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# Amazon Elastic Compute Cloud

## API Reference

API Version 2014-09-01



## Amazon Elastic Compute Cloud: API Reference

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## Table of Contents

Welcome .....	1
List of Actions by Function .....	2
Actions .....	8
AcceptVpcPeeringConnection .....	12
Description .....	12
Request Parameters .....	12
Response Elements .....	12
Errors .....	12
Examples .....	12
Related Actions .....	13
AllocateAddress .....	13
Description .....	13
Request Parameters .....	13
Response Elements .....	14
Errors .....	14
Examples .....	14
Related Actions .....	15
AssignPrivateIpAddresses .....	16
Description .....	16
Request Parameters .....	16
Response Elements .....	16
Errors .....	17
Examples .....	17
Related Actions .....	18
AssociateAddress .....	19
Description .....	19
Request Parameters .....	19
Response Elements .....	20
Errors .....	20
Examples .....	20
Related Actions .....	21
AssociateDhcpOptions .....	22
Description .....	22
Request Parameters .....	22
Response Elements .....	22
Errors .....	22
Examples .....	23
Related Actions .....	23
AssociateRouteTable .....	24
Description .....	24
Request Parameters .....	24
Response Elements .....	24
Errors .....	24
Examples .....	25
Related Actions .....	25
AttachInternetGateway .....	26
Description .....	26
Request Parameters .....	26
Response Elements .....	26
Errors .....	26
Examples .....	27
Related Actions .....	27
AttachNetworkInterface .....	28
Description .....	28
Request Parameters .....	28

Response Elements .....	28
Errors .....	28
Examples .....	29
Related Actions .....	29
AttachVolume .....	30
Description .....	30
Request Parameters .....	30
Response Elements .....	30
Errors .....	31
Examples .....	31
Related Actions .....	32
AttachVpnGateway .....	33
Description .....	33
Request Parameters .....	33
Response Elements .....	33
Errors .....	33
Examples .....	34
Related Actions .....	34
AuthorizeSecurityGroupEgress .....	35
Description .....	35
Request Parameters .....	35
Response Elements .....	36
Errors .....	36
Examples .....	36
Related Actions .....	37
AuthorizeSecurityGroupIngress .....	38
Description .....	38
Request Parameters .....	38
Response Elements .....	39
Errors .....	40
Examples .....	40
Related Actions .....	41
BundleInstance .....	42
Description .....	42
Request Parameters .....	42
JSON Parameters .....	43
Response Elements .....	43
Errors .....	43
Examples .....	43
Related Actions .....	44
CancelBundleTask .....	45
Description .....	45
Request Parameters .....	45
Response Elements .....	45
Errors .....	45
Examples .....	45
Related Actions .....	46
CancelConversionTask .....	47
Description .....	47
Request Parameters .....	47
Response Elements .....	47
Errors .....	47
Examples .....	47
Related Actions .....	48
CancelExportTask .....	49
Description .....	49
Request Parameters .....	49
Response Elements .....	49

Errors .....	49
Examples .....	49
Related Actions .....	50
CancelReservedInstancesListing .....	51
Description .....	51
Request Parameters .....	51
Response Elements .....	51
Errors .....	51
Examples .....	51
Related Actions .....	53
CancelSpotInstanceRequests .....	54
Description .....	54
Request Parameters .....	54
Response Elements .....	54
Errors .....	54
Examples .....	54
Related Actions .....	56
ConfirmProductInstance .....	57
Description .....	57
Request Parameters .....	57
Response Elements .....	57
Errors .....	57
Examples .....	58
Related Actions .....	58
CopyImage .....	59
Description .....	59
Request Parameters .....	59
Response Elements .....	59
Errors .....	60
Examples .....	60
CopySnapshot .....	61
Description .....	61
Request Parameters .....	61
Response Elements .....	62
Errors .....	62
Examples .....	62
Related Actions .....	63
CreateCustomerGateway .....	64
Description .....	64
Request Parameters .....	64
Response Elements .....	64
Errors .....	65
Examples .....	65
Related Actions .....	65
CreateDhcpOptions .....	66
Description .....	66
Request Parameters .....	66
Response Elements .....	67
Errors .....	67
Examples .....	67
Related Actions .....	68
CreateImage .....	69
Description .....	69
Request Parameters .....	69
Response Elements .....	71
Errors .....	71
Examples .....	71
Related Actions .....	72

CreateInstanceExportTask .....	73
Description .....	73
Request Parameters .....	73
Response Elements .....	74
Errors .....	74
Examples .....	74
Related Actions .....	75
CreateInternetGateway .....	76
Description .....	76
Request Parameters .....	76
Response Elements .....	76
Errors .....	76
Examples .....	76
Related Actions .....	77
CreateKeyPair .....	78
Description .....	78
Request Parameters .....	78
Response Elements .....	78
Errors .....	78
Examples .....	79
Related Actions .....	80
CreateNetworkAcl .....	81
Description .....	81
Request Parameters .....	81
Response Elements .....	81
Errors .....	81
Examples .....	81
Related Actions .....	82
CreateNetworkAclEntry .....	83
Description .....	83
Request Parameters .....	83
Response Elements .....	84
Errors .....	85
Examples .....	85
Related Actions .....	85
CreateNetworkInterface .....	86
Description .....	86
Request Parameters .....	86
Response Elements .....	87
Errors .....	87
Examples .....	87
Related Actions .....	90
CreatePlacementGroup .....	91
Description .....	91
Request Parameters .....	91
Response Elements .....	91
Errors .....	91
Examples .....	92
Related Actions .....	92
CreateReservedInstancesListing .....	93
Description .....	93
Request Parameters .....	93
Response Elements .....	93
Errors .....	94
Examples .....	94
Related Actions .....	101
CreateRoute .....	102
Description .....	102

Request Parameters .....	102
Response Elements .....	103
Errors .....	103
Examples .....	103
Related Actions .....	104
CreateRouteTable .....	105
Description .....	105
Request Parameters .....	105
Response Elements .....	105
Errors .....	105
Examples .....	105
Related Actions .....	106
CreateSecurityGroup .....	107
Description .....	107
Request Parameters .....	107
Response Elements .....	108
Errors .....	108
Examples .....	108
Related Actions .....	109
CreateSnapshot .....	110
Description .....	110
Request Parameters .....	110
Response Elements .....	110
Errors .....	111
Examples .....	112
Related Actions .....	112
CreateSpotDatafeedSubscription .....	113
Description .....	113
Request Parameters .....	113
Response Elements .....	113
Examples .....	113
Related Actions .....	114
CreateSubnet .....	115
Description .....	115
Request Parameters .....	115
Response Elements .....	116
Errors .....	116
Examples .....	116
Related Actions .....	117
CreateTags .....	118
Description .....	118
Request Parameters .....	118
Response Elements .....	118
Errors .....	119
Examples .....	119
Related Actions .....	120
CreateVolume .....	121
Description .....	121
Request Parameters .....	121
Response Elements .....	122
Errors .....	123
Examples .....	123
Related Actions .....	124
CreateVpc .....	125
Description .....	125
Request Parameters .....	125
Response Elements .....	125
Errors .....	125

Examples .....	126
Related Actions .....	127
CreateVpcPeeringConnection .....	127
Description .....	127
Request Parameters .....	127
Response Elements .....	127
Errors .....	128
Examples .....	128
Related Actions .....	129
CreateVpnConnection .....	130
Description .....	130
Request Parameters .....	130
Response Elements .....	131
Errors .....	131
Examples .....	131
Related Actions .....	132
CreateVpnConnectionRoute .....	133
Description .....	133
Request Parameters .....	133
Response Elements .....	133
Errors .....	133
Examples .....	134
Related Actions .....	134
CreateVpnGateway .....	135
Description .....	135
Request Parameters .....	135
Response Elements .....	135
Errors .....	135
Examples .....	135
Related Actions .....	136
DeleteCustomerGateway .....	137
Description .....	137
Request Parameters .....	137
Response Elements .....	137
Errors .....	137
Examples .....	137
Related Actions .....	138
DeleteDhcpOptions .....	139
Description .....	139
Request Parameters .....	139
Response Elements .....	139
Errors .....	139
Examples .....	139
Related Actions .....	140
DeleteInternetGateway .....	141
Description .....	141
Request Parameters .....	141
Response Elements .....	141
Errors .....	141
Examples .....	141
Related Actions .....	142
DeleteKeyPair .....	143
Description .....	143
Request Parameters .....	143
Response Elements .....	143
Errors .....	143
Examples .....	143
Related Actions .....	144



DeleteNetworkAcl .....	145
Description .....	145
Request Parameters .....	145
Response Elements .....	145
Errors .....	145
Examples .....	145
Related Actions .....	146
DeleteNetworkAclEntry .....	147
Description .....	147
Request Parameters .....	147
Response Elements .....	147
Errors .....	147
Examples .....	148
Related Actions .....	148
DeleteNetworkInterface .....	149
Description .....	149
Request Parameters .....	149
Response Elements .....	149
Errors .....	149
Examples .....	149
Related Actions .....	150
DeletePlacementGroup .....	151
Description .....	151
Request Parameters .....	151
Response Elements .....	151
Errors .....	151
Examples .....	151
Related Actions .....	152
DeleteRoute .....	153
Description .....	153
Request Parameters .....	153
Response Elements .....	153
Errors .....	153
Examples .....	153
Related Actions .....	154
DeleteRouteTable .....	155
Description .....	155
Request Parameters .....	155
Response Elements .....	155
Errors .....	155
Examples .....	155
Related Actions .....	156
DeleteSecurityGroup .....	157
Description .....	157
Request Parameters .....	157
Response Elements .....	157
Errors .....	157
Examples .....	158
Related Actions .....	158
DeleteSnapshot .....	159
Description .....	159
Request Parameters .....	159
Response Elements .....	159
Errors .....	159
Examples .....	160
Related Actions .....	160
DeleteSpotDatafeedSubscription .....	161
Description .....	161

Request Parameters .....	161
Response Elements .....	161
Examples .....	161
Related Actions .....	161
DeleteSubnet .....	162
Description .....	162
Request Parameters .....	162
Response Elements .....	162
Errors .....	162
Examples .....	162
Related Actions .....	163
DeleteTags .....	164
Description .....	164
Request Parameters .....	164
Response Elements .....	164
Errors .....	164
Examples .....	165
Related Actions .....	166
DeleteVolume .....	167
Description .....	167
Request Parameters .....	167
Response Elements .....	167
Errors .....	167
Examples .....	167
Related Actions .....	168
DeleteVpc .....	169
Description .....	169
Request Parameters .....	169
Response Elements .....	169
Errors .....	169
Examples .....	169
Related Actions .....	170
DeleteVpcPeeringConnection .....	170
Description .....	170
Request Parameters .....	170
Response Elements .....	170
Errors .....	171
Examples .....	171
Related Actions .....	171
DeleteVpnConnection .....	172
Description .....	172
Request Parameters .....	172
Response Elements .....	172
Errors .....	172
Examples .....	173
Related Actions .....	173
DeleteVpnConnectionRoute .....	174
Description .....	174
Request Parameters .....	174
Response Elements .....	174
Errors .....	174
Examples .....	175
Related Actions .....	175
DeleteVpnGateway .....	176
Description .....	176
Request Parameters .....	176
Response Elements .....	176
Errors .....	176

Examples .....	176
Related Actions .....	177
DeregisterImage .....	178
Description .....	178
Request Parameters .....	178
Response Elements .....	178
Errors .....	178
Examples .....	178
Related Actions .....	179
DescribeAccountAttributes .....	180
Description .....	180
Request Parameters .....	180
Response Elements .....	180
Errors .....	180
Examples .....	180
DescribeAddresses .....	183
Description .....	183
Request Parameters .....	183
Response Elements .....	184
Errors .....	184
Examples .....	185
Related Actions .....	186
DescribeAvailabilityZones .....	187
Description .....	187
Request Parameters .....	187
Response Elements .....	188
Errors .....	188
Examples .....	188
Related Actions .....	189
DescribeBundleTasks .....	190
Description .....	190
Request Parameters .....	190
Response Elements .....	191
Errors .....	191
Examples .....	192
Related Actions .....	192
DescribeConversionTasks .....	193
Description .....	193
Request Parameters .....	193
Response Elements .....	193
Errors .....	193
Examples .....	193
Related Actions .....	194
DescribeCustomerGateways .....	195
Description .....	195
Request Parameters .....	195
Response Elements .....	196
Errors .....	197
Examples .....	197
Related Actions .....	197
DescribeDhcpOptions .....	199
Description .....	199
Request Parameters .....	199
Response Elements .....	200
Errors .....	200
Examples .....	201
Related Actions .....	202
DescribeExportTasks .....	203

Description .....	203
Request Parameters .....	203
Response Elements .....	203
Errors .....	203
Examples .....	203
Related Actions .....	204
DescribeImageAttribute .....	205
Description .....	205
Request Parameters .....	205
Response Elements .....	205
Errors .....	206
Examples .....	206
Related Actions .....	207
DescribeImages .....	208
Description .....	208
Request Parameters .....	208
Response Elements .....	212
Errors .....	212
Examples .....	212
Related Actions .....	215
DescribeInstanceAttribute .....	216
Description .....	216
Request Parameters .....	216
Response Elements .....	216
Errors .....	217
Examples .....	217
Related Actions .....	219
DescribeInstances .....	220
Description .....	220
Request Parameters .....	220
Response Elements .....	227
Errors .....	227
Examples .....	227
Related Actions .....	230
DescribeInstanceState .....	232
Description .....	232
Request Parameters .....	233
Response Elements .....	235
Errors .....	235
Examples .....	235
DescribeInternetGateways .....	239
Description .....	239
Request Parameters .....	239
Response Elements .....	240
Errors .....	240
Examples .....	241
Related Actions .....	241
DescribeKeyPairs .....	242
Description .....	242
Request Parameters .....	242
Response Elements .....	243
Errors .....	243
Examples .....	243
Related Actions .....	244
DescribeNetworkAcls .....	245
Description .....	245
Request Parameters .....	245
Response Elements .....	247

Errors .....	247
Examples .....	247
Related Actions .....	249
DescribeNetworkInterfaceAttribute .....	251
Description .....	251
Request Parameters .....	251
Response Elements .....	251
Errors .....	252
Examples .....	252
Related Actions .....	252
DescribeNetworkInterfaces .....	253
Description .....	253
Request Parameters .....	253
Response Elements .....	256
Errors .....	256
Examples .....	256
Related Actions .....	258
DescribePlacementGroups .....	259
Description .....	259
Request Parameters .....	259
Response Elements .....	260
Errors .....	260
Examples .....	260
Related Actions .....	261
DescribeRegions .....	262
Description .....	262
Request Parameters .....	262
Response Elements .....	262
Errors .....	263
Examples .....	263
Related Actions .....	264
DescribeReservedInstances .....	265
Description .....	265
Request Parameters .....	265
Response Elements .....	267
Errors .....	267
Examples .....	267
Related Actions .....	268
DescribeReservedInstancesListings .....	269
Description .....	269
Request Parameters .....	269
Response Elements .....	270
Errors .....	270
Examples .....	271
Related Actions .....	272
DescribeReservedInstancesModifications .....	273
Description .....	273
Request Parameters .....	273
Response Elements .....	275
Errors .....	275
Examples .....	275
Related Actions .....	276
DescribeReservedInstancesOfferings .....	277
Description .....	277
Request Parameters .....	277
Response Elements .....	280
Errors .....	280
Examples .....	280

Related Actions .....	285
DescribeRouteTables .....	286
Description .....	286
Request Parameters .....	286
Response Elements .....	288
Errors .....	288
Examples .....	288
Related Actions .....	289
DescribeSecurityGroups .....	291
Description .....	291
Request Parameters .....	291
Response Elements .....	293
Errors .....	293
Examples .....	293
Related Actions .....	295
DescribeSnapshotAttribute .....	296
Description .....	296
Request Parameters .....	296
Response Elements .....	296
Errors .....	296
Examples .....	297
Related Actions .....	297
DescribeSnapshots .....	299
Description .....	299
Request Parameters .....	299
Response Elements .....	301
Errors .....	302
Examples .....	302
Related Actions .....	303
DescribeSpotDatafeedSubscription .....	304
Description .....	304
Request Parameters .....	304
Response Elements .....	304
Errors .....	304
Examples .....	304
Related Actions .....	305
DescribeSpotInstanceRequests .....	306
Description .....	306
Request Parameters .....	306
Response Elements .....	309
Errors .....	310
Examples .....	310
Related Actions .....	313
DescribeSpotPriceHistory .....	314
Description .....	314
Request Parameters .....	314
Response Elements .....	316
Examples .....	316
Related Actions .....	317
DescribeSubnets .....	318
Description .....	318
Request Parameters .....	318
Response Elements .....	319
Errors .....	320
Examples .....	320
Related Actions .....	321
DescribeTags .....	322
Description .....	322

Request Parameters .....	322
Response Elements .....	323
Examples .....	323
Related Actions .....	327
DescribeVolumeAttribute .....	328
Description .....	328
Request Parameters .....	328
Response Elements .....	328
Errors .....	328
Example .....	329
Related Actions .....	329
DescribeVolumes .....	330
Description .....	330
Request Parameters .....	330
Response Elements .....	332
Errors .....	333
Examples .....	333
Related Actions .....	334
DescribeVolumeStatus .....	335
Description .....	335
Request Parameters .....	335
Response Elements .....	337
Errors .....	337
Examples .....	338
Related Actions .....	339
DescribeVpcAttribute .....	340
Description .....	340
Request Parameters .....	340
Response Elements .....	340
Errors .....	340
Examples .....	341
Related Actions .....	341
DescribeVpcPeeringConnections .....	342
Description .....	342
Request Parameters .....	342
Response Elements .....	344
Errors .....	344
Examples .....	344
Related Actions .....	345
DescribeVpcs .....	346
Description .....	346
Request Parameters .....	346
Response Elements .....	347
Errors .....	348
Examples .....	348
Related Actions .....	348
DescribeVpnConnections .....	350
Description .....	350
Request Parameters .....	350
Response Elements .....	352
Errors .....	352
Examples .....	352
Related Actions .....	353
DescribeVpnGateways .....	354
Description .....	354
Request Parameters .....	354
Response Elements .....	355
Errors .....	356

Examples .....	356
Related Actions .....	357
DetachInternetGateway .....	358
Description .....	358
Request Parameters .....	358
Response Elements .....	358
Errors .....	358
Examples .....	358
Related Actions .....	359
DetachNetworkInterface .....	360
Description .....	360
Request Parameters .....	360
Response Elements .....	360
Errors .....	360
Examples .....	360
Related Actions .....	361
DetachVolume .....	362
Description .....	362
Request Parameters .....	362
Response Elements .....	362
Errors .....	363
Examples .....	363
Related Actions .....	364
DetachVpnGateway .....	365
Description .....	365
Request Parameters .....	365
Response Elements .....	365
Errors .....	365
Examples .....	366
Related Actions .....	366
DisableVgwRoutePropagation .....	367
Description .....	367
Request Parameters .....	367
Response Elements .....	367
Errors .....	367
Examples .....	367
Related Actions .....	368
DisassociateAddress .....	369
Description .....	369
Request Parameters .....	369
Response Elements .....	369
Errors .....	369
Examples .....	370
Related Actions .....	370
DisassociateRouteTable .....	371
Description .....	371
Request Parameters .....	371
Response Elements .....	371
Errors .....	371
Examples .....	371
Related Actions .....	372
EnableVgwRoutePropagation .....	373
Description .....	373
Request Parameters .....	373
Response Elements .....	373
Errors .....	373
Examples .....	373
Related Actions .....	374



EnableVolumeIO .....	375
Description .....	375
Request Parameters .....	375
Response Elements .....	375
Errors .....	375
Examples .....	375
Related Actions .....	376
GetConsoleOutput .....	377
Description .....	377
Request Parameters .....	377
Response Elements .....	377
Errors .....	378
Examples .....	378
Related Actions .....	378
GetPasswordData .....	379
Description .....	379
Request Parameters .....	379
Response Elements .....	379
Errors .....	379
Examples .....	380
Related Actions .....	380
ImportInstance .....	381
Description .....	381
Request Parameters .....	381
Response Elements .....	383
Errors .....	383
Examples .....	383
Related Actions .....	384
ImportKeyPair .....	385
Description .....	385
Request Parameters .....	385
Response Elements .....	385
Error .....	386
Examples .....	386
Related Actions .....	387
ImportVolume .....	388
Description .....	388
Request Parameters .....	388
Response Elements .....	389
Errors .....	389
Examples .....	389
Related Actions .....	390
ModifyImageAttribute .....	391
Description .....	391
Request Parameters .....	391
Response Elements .....	392
Errors .....	392
Examples .....	392
Related Actions .....	393
ModifyInstanceAttribute .....	394
Description .....	394
Request Parameters .....	394
Response Elements .....	396
Errors .....	396
Examples .....	396
Related Actions .....	397
ModifyNetworkInterfaceAttribute .....	398
Description .....	398

Request Parameters .....	398
Response Elements .....	399
Errors .....	399
Examples .....	399
Related Actions .....	399
ModifyReservedInstances .....	400
Description .....	400
Request Parameters .....	400
Response Elements .....	400
Errors .....	400
Examples .....	401
Related Actions .....	401
ModifySnapshotAttribute .....	402
Description .....	402
Request Parameters .....	402
Response Elements .....	402
Errors .....	403
Examples .....	403
Related Actions .....	403
ModifySubnetAttribute .....	404
Description .....	404
Request Parameters .....	404
Response Elements .....	404
Errors .....	404
Examples .....	405
Related Actions .....	405
ModifyVolumeAttribute .....	406
Description .....	406
Request Parameters .....	406
Response Elements .....	406
Errors .....	406
Examples .....	407
Related Actions .....	407
ModifyVpcAttribute .....	408
Description .....	408
Request Parameters .....	408
Response Elements .....	408
Errors .....	408
Examples .....	409
MonitorInstances .....	410
Description .....	410
Request Parameters .....	410
Response Elements .....	410
Errors .....	410
Examples .....	410
Related Actions .....	411
PurchaseReservedInstancesOffering .....	412
Description .....	412
Request Parameters .....	412
Response Elements .....	413
Errors .....	413
Examples .....	413
Related Actions .....	417
RebootInstances .....	418
Description .....	418
Request Parameters .....	418
Response Elements .....	418
Errors .....	418

Examples .....	418
Related Actions .....	419
RegisterImage .....	420
Description .....	420
Request Parameters .....	420
Response Elements .....	423
Errors .....	423
Examples .....	423
Related Actions .....	424
RejectVpcPeeringConnection .....	425
Description .....	425
Request Parameters .....	425
Response Elements .....	425
Errors .....	425
Examples .....	425
Related Actions .....	426
ReleaseAddress .....	427
Description .....	427
Request Parameters .....	427
Response Elements .....	427
Errors .....	428
Examples .....	428
Related Actions .....	428
ReplaceNetworkAclAssociation .....	429
Description .....	429
Request Parameters .....	429
Response Elements .....	429
Errors .....	429
Examples .....	430
Related Actions .....	430
ReplaceNetworkAclEntry .....	431
Description .....	431
Request Parameters .....	431
Response Elements .....	432
Errors .....	432
Examples .....	432
Related Actions .....	433
ReplaceRoute .....	434
Description .....	434
Request Parameters .....	434
Response Elements .....	435
Errors .....	435
Examples .....	435
Related Actions .....	436
ReplaceRouteTableAssociation .....	437
Description .....	437
Request Parameters .....	437
Response Elements .....	437
Errors .....	437
Examples .....	438
Related Actions .....	438
ReportInstanceStatus .....	439
Description .....	439
Request Parameters .....	439
Response Elements .....	440
Errors .....	440
Examples .....	440
RequestSpotInstances .....	442

Description .....	442
Request Parameters .....	442
Response Elements .....	448
Errors .....	448
Examples .....	448
Related Actions .....	449
ResetImageAttribute .....	450
Description .....	450
Request Parameters .....	450
Response Elements .....	450
Errors .....	450
Examples .....	450
Related Actions .....	451
ResetInstanceAttribute .....	452
Description .....	452
Request Parameters .....	452
Response Elements .....	452
Errors .....	452
Examples .....	453
Related Actions .....	453
ResetNetworkInterfaceAttribute .....	454
Description .....	454
Request Parameters .....	454
Response Elements .....	454
Errors .....	454
Examples .....	454
Related Actions .....	455
ResetSnapshotAttribute .....	456
Description .....	456
Request Parameters .....	456
Response Elements .....	456
Errors .....	456
Examples .....	456
Related Actions .....	457
RevokeSecurityGroupEgress .....	458
Description .....	458
Request Parameters .....	458
Response Elements .....	459
Errors .....	459
Examples .....	459
Related Actions .....	460
RevokeSecurityGroupIngress .....	461
Description .....	461
Request Parameters .....	461
Response Elements .....	462
Errors .....	462
Examples .....	463
Related Actions .....	463
RunInstances .....	464
Description .....	464
Request Parameters .....	464
Response Elements .....	470
Errors .....	470
Examples .....	471
Related Actions .....	473
StartInstances .....	474
Description .....	474
Request Parameters .....	474

Response Elements .....	474
Errors .....	474
Examples .....	475
Related Actions .....	475
StopInstances .....	476
Description .....	476
Request Parameters .....	476
Response Elements .....	476
Errors .....	477
Examples .....	477
Related Actions .....	477
TerminateInstances .....	478
Description .....	478
Request Parameters .....	478
Response Elements .....	478
Errors .....	478
Examples .....	479
Related Actions .....	479
UnassignPrivateIpAddresses .....	480
Description .....	480
Request Parameters .....	480
Response Elements .....	480
Errors .....	480
Examples .....	480
Related Actions .....	481
UnmonitorInstances .....	482
Description .....	482
Request Parameters .....	482
Response Elements .....	482
Errors .....	482
Examples .....	482
Related Actions .....	483
Data Types .....	484
AccountAttributeSetItemType .....	487
Ancestors .....	487
Relevant Operations .....	487
Contents .....	487
AccountAttributeValueSetItemType .....	487
Ancestors .....	487
Relevant Operations .....	487
Contents .....	488
AssignPrivateIpAddressesSetItemRequestType .....	488
Ancestors .....	488
Relevant Operations .....	488
Contents .....	488
AttachmentSetItemResponseType .....	488
Ancestors .....	488
Relevant Operations .....	488
Contents .....	488
AttachmentType .....	489
Ancestors .....	489
Relevant Operations .....	489
Contents .....	489
AvailabilityZoneItemType .....	489
Ancestors .....	490
Relevant Operations .....	490
Contents .....	490
AvailabilityZoneMessageType .....	490

Ancestors .....	490
Relevant Operations .....	490
Contents .....	490
BlockDeviceMappingItemType .....	491
Ancestors .....	491
Relevant Operations .....	491
Contents .....	491
BundleInstanceS3StorageType .....	491
Ancestors .....	491
Relevant Operations .....	492
Contents .....	492
BundleInstanceTaskErrorType .....	492
Ancestors .....	492
Relevant Operations .....	492
Contents .....	493
BundleInstanceTaskStorageType .....	493
Ancestors .....	493
Relevant Operations .....	493
Contents .....	493
BundleInstanceTaskType .....	493
Ancestors .....	493
Relevant Operations .....	493
Contents .....	494
CancelSpotInstanceRequestsResponseSetItemType .....	494
Ancestors .....	494
Relevant Operations .....	494
Contents .....	495
ConversionTaskType .....	495
Ancestors .....	495
Relevant Operations .....	495
Contents .....	495
CreateVolumePermissionItemType .....	496
Ancestors .....	496
Relevant Operations .....	496
Contents .....	496
CustomerGatewayType .....	496
Ancestors .....	496
Relevant Operations .....	496
Contents .....	496
DescribeAddressesResponseItemType .....	497
Ancestors .....	497
Relevant Operations .....	497
Contents .....	497
DescribeImagesResponseItemType .....	498
Ancestors .....	498
Relevant Operations .....	498
Contents .....	498
DescribeKeyPairsResponseItemType .....	500
Ancestors .....	500
Relevant Operations .....	500
Contents .....	500
DescribeReservedInstancesListingsResponseSetItemType .....	500
Ancestors .....	500
Relevant Operations .....	500
Contents .....	500
DescribeReservedInstancesListingSetItemType .....	501
Ancestors .....	501
Relevant Operations .....	501

Contents .....	501
DescribeReservedInstancesModificationsResponseSetItemType .....	502
Ancestors .....	502
Relevant Operations .....	502
Contents .....	502
DescribeReservedInstancesOfferingsResponseSetItemType .....	503
Ancestors .....	503
Relevant Operations .....	503
Contents .....	503
DescribeReservedInstancesOfferingsResponseType .....	504
Ancestors .....	504
Relevant Operations .....	504
Contents .....	504
DescribeReservedInstancesResponseSetItemType .....	504
Ancestors .....	505
Relevant Operations .....	505
Contents .....	505
DescribeReservedInstancesSetItemType .....	506
Ancestors .....	506
Relevant Operations .....	506
Contents .....	506
DescribeSnapshotsSetItemResponseType .....	506
Ancestors .....	506
Relevant Operations .....	507
Contents .....	507
DescribeVolumesSetItemResponseType .....	507
Ancestors .....	507
Relevant Operations .....	508
Contents .....	508
DhcpConfigurationItemType .....	509
Ancestors .....	509
Relevant Operations .....	509
Contents .....	509
DhcpOptionsType .....	509
Ancestors .....	509
Relevant Operations .....	509
Contents .....	509
DhcpValueType .....	510
Ancestors .....	510
Relevant Operations .....	510
Contents .....	510
DiskImageDescriptionType .....	510
Ancestors .....	510
Relevant Operations .....	510
Contents .....	510
DiskImageVolumeDescriptionType .....	511
Ancestors .....	511
Relevant Operations .....	511
Contents .....	511
EbsBlockDeviceType .....	511
Ancestors .....	511
Relevant Operations .....	512
Contents .....	512
EbsInstanceBlockDeviceMappingResponseType .....	512
Ancestors .....	513
Relevant Operations .....	513
Contents .....	513
ExportTaskResponseType .....	513

Ancestors .....	513
Relevant Operations .....	513
Contents .....	514
ExportToS3TaskResponseType .....	514
Ancestors .....	514
Relevant Operations .....	514
Contents .....	514
GroupItemType .....	515
Ancestors .....	515
Relevant Operations .....	515
Contents .....	515
IamInstanceProfileRequestType .....	515
Ancestors .....	516
Relevant Operations .....	516
Contents .....	516
IamInstanceProfileResponseType .....	516
Ancestors .....	516
Relevant Operations .....	516
Contents .....	516
IcmpTypeCodeType .....	517
Ancestors .....	517
Relevant Operations .....	517
Contents .....	517
ImportInstanceTaskDetailsType .....	517
Ancestors .....	517
Relevant Operations .....	517
Contents .....	517
ImportInstanceVolumeDetailItemType .....	518
Ancestors .....	518
Relevant Operations .....	518
Contents .....	518
ImportVolumeTaskDetailsType .....	519
Ancestors .....	519
Relevant Operations .....	519
Contents .....	519
InstanceBlockDeviceMappingItemType .....	519
Ancestors .....	519
Relevant Operations .....	519
Contents .....	520
InstanceBlockDeviceMappingResponseItemType .....	520
Ancestors .....	520
Relevant Operations .....	520
Contents .....	520
InstanceCountsSetItemType .....	520
Ancestors .....	521
Relevant Operations .....	521
Contents .....	521
InstanceCountsSetType .....	521
Ancestors .....	521
Relevant Operations .....	521
Contents .....	521
InstanceEbsBlockDeviceType .....	521
Ancestors .....	522
Relevant Operations .....	522
Contents .....	522
InstanceExportTaskResponseType .....	522
Ancestors .....	522
Relevant Operations .....	522



Contents .....	522
InstanceMonitoringStateType .....	523
Ancestors .....	523
Relevant Operations .....	523
Contents .....	523
InstanceNetworkInterfaceAssociationType .....	523
Relevant Operations .....	523
Contents .....	523
InstanceNetworkInterfaceAttachmentType .....	524
Relevant Operations .....	524
Contents .....	524
InstanceNetworkInterfaceSetItemRequestType .....	524
Ancestors .....	524
Relevant Operations .....	524
Contents .....	525
InstanceNetworkInterfaceSetItemType .....	525
Ancestors .....	525
Relevant Operations .....	525
Contents .....	526
InstancePrivateIpAddressesSetItemType .....	527
Ancestors .....	527
Relevant Operations .....	527
Contents .....	527
InstanceStateChangeType .....	527
Ancestors .....	527
Relevant Operations .....	527
Contents .....	528
InstanceStateType .....	528
Ancestors .....	528
Relevant Operations .....	528
Contents .....	528
InstanceStatusDetailsSetType .....	529
Ancestors .....	529
Relevant Operations .....	529
Contents .....	529
InstanceStatusEventsSetType .....	529
Relevant Operations .....	529
Contents .....	529
InstanceStatusEventType .....	530
Ancestors .....	530
Relevant Operations .....	530
Contents .....	530
InstanceStatusItemType .....	530
Ancestors .....	530
Relevant Operations .....	530
Contents .....	531
InstanceStatusSetType .....	531
Relevant Operations .....	531
Contents .....	531
InstanceStateType .....	531
Ancestors .....	531
Relevant Operations .....	532
Contents .....	532
InternetGatewayAttachmentType .....	532
Ancestors .....	532
Relevant Operations .....	532
Contents .....	532
InternetGatewayType .....	532

Ancestors .....	533
Relevant Operations .....	533
Contents .....	533
IpPermissionType .....	533
Ancestors .....	533
Relevant Operations .....	533
Contents .....	533
IpRangeItemType .....	534
Ancestors .....	534
Relevant Operations .....	534
Contents .....	534
LaunchPermissionItemType .....	534
Ancestors .....	534
Relevant Operations .....	535
Contents .....	535
LaunchSpecificationRequestType .....	535
Ancestors .....	535
Relevant Operations .....	535
Contents .....	535
LaunchSpecificationResponseType .....	536
Ancestors .....	536
Relevant Operations .....	536
Contents .....	537
MonitoringInstanceType .....	538
Ancestors .....	538
Relevant Operations .....	538
Contents .....	538
MonitorInstancesResponseSetItemType .....	538
Ancestors .....	538
Relevant Operations .....	538
Contents .....	538
NetworkAclAssociationType .....	539
Ancestors .....	539
Relevant Operations .....	539
Contents .....	539
NetworkAclEntryType .....	539
Ancestors .....	539
Relevant Operations .....	539
Contents .....	539
NetworkAclType .....	540
Ancestors .....	540
Relevant Operations .....	540
Contents .....	540
NetworkInterfaceAssociationType .....	541
Ancestors .....	541
Relevant Operations .....	541
Contents .....	541
NetworkInterfaceAttachmentType .....	541
Relevant Operations .....	542
Contents .....	542
NetworkInterfacePrivateIpAddressesSetItemType .....	542
Relevant Operations .....	542
Contents .....	542
NetworkInterfaceType .....	543
Ancestors .....	543
Relevant Operations .....	543
Contents .....	543
PlacementGroupInfoType .....	544

Ancestors .....	544
Relevant Operations .....	544
Contents .....	545
PlacementRequestType .....	545
Ancestors .....	545
Relevant Operations .....	545
Contents .....	545
PlacementResponseType .....	545
Ancestors .....	546
Relevant Operations .....	546
Contents .....	546
PortRangeType .....	546
Ancestors .....	546
Relevant Operations .....	546
Contents .....	546
PriceScheduleRequestSetItemType .....	547
Ancestors .....	547
Relevant Operations .....	547
Contents .....	547
PriceScheduleSetItemType .....	547
Ancestors .....	547
Relevant Operations .....	547
Contents .....	547
PriceScheduleSetType .....	548
Ancestors .....	548
Relevant Operations .....	548
Contents .....	548
PricingDetailsSetItemType .....	548
Ancestors .....	548
Relevant Operations .....	549
Contents .....	549
PrivateIpAddressesSetItemRequestType .....	549
Ancestors .....	549
Relevant Operations .....	549
Contents .....	549
ProductCodeItemType .....	549
Ancestors .....	549
Relevant Operations .....	550
Contents .....	550
ProductCodesSetItemType .....	550
Ancestors .....	550
Relevant Operations .....	550
Contents .....	550
ProductDescriptionSetItemType .....	550
Ancestors .....	551
Relevant Operations .....	551
Contents .....	551
PropagatingVgwType .....	551
Ancestors .....	551
Relevant Operations .....	551
Contents .....	551
RecurringChargesSetItemType .....	551
Relevant Operations .....	551
Contents .....	552
RegionItemType .....	552
Ancestors .....	552
Relevant Operations .....	552
Contents .....	552

ReservationInfoType .....	552
Ancestors .....	552
Relevant Operations .....	552
Contents .....	553
ReservedInstanceLimitPriceType .....	553
Ancestors .....	553
Relevant Operations .....	553
Contents .....	553
ReservedInstancesConfigurationSetItemType .....	553
Ancestors .....	554
Relevant Operations .....	554
Contents .....	554
ReservedInstancesModificationResultSetItemType .....	554
Ancestors .....	554
Relevant Operations .....	554
Contents .....	554
ResourceTagSetItemType .....	555
Ancestors .....	555
Relevant Operations .....	555
Contents .....	555
RouteTableAssociationType .....	555
Ancestors .....	555
Relevant Operations .....	555
Contents .....	556
RouteTableType .....	556
Ancestors .....	556
Relevant Operations .....	556
Contents .....	556
RouteType .....	557
Ancestors .....	557
Relevant Operations .....	557
Contents .....	557
RunningInstancesItemType .....	558
Ancestors .....	558
Relevant Operations .....	558
Contents .....	558
SecurityGroupIdSetItemType .....	561
Ancestors .....	561
Relevant Operations .....	561
Contents .....	561
SecurityGroupItemType .....	561
Ancestors .....	561
Relevant Operations .....	562
Contents .....	562
SpotDatafeedSubscriptionType .....	562
Ancestors .....	562
Relevant Operations .....	562
Contents .....	563
SpotInstanceRequestSetItemType .....	563
Ancestors .....	563
Relevant Operations .....	563
Contents .....	563
SpotInstanceStateFaultType .....	565
Ancestors .....	565
Relevant Operations .....	565
Contents .....	565
SpotInstanceStatusMessageType .....	565
Ancestors .....	565

Relevant Operations .....	565
Contents .....	565
SpotPriceHistorySetItemType .....	566
Ancestors .....	566
Relevant Operations .....	566
Contents .....	566
StateReasonType .....	566
Ancestors .....	566
Relevant Operations .....	567
Contents .....	567
SubnetType .....	567
Ancestors .....	567
Relevant Operations .....	568
Contents .....	568
TagSetItemType .....	568
Relevant Operations .....	568
Contents .....	569
UserData Type .....	569
Ancestors .....	569
Relevant Operations .....	569
Contents .....	569
UserIdGroupPairType .....	569
Ancestors .....	570
Relevant Operations .....	570
Contents .....	570
VolumeStatusItemType .....	570
Ancestors .....	570
Relevant Operation .....	570
Contents .....	570
VolumeStatusInfoType .....	571
Ancestors .....	571
Relevant Operation .....	571
Contents .....	571
VolumeStatusDetailsItemType .....	571
Ancestors .....	571
Relevant Operation .....	572
Contents .....	572
VolumeStatusEventItemType .....	572
Ancestors .....	572
Relevant Operation .....	572
Contents .....	572
VolumeStatusActionItemType .....	573
Ancestors .....	573
Relevant Operation .....	573
Contents .....	573
VpcType .....	573
Ancestors .....	573
Relevant Operations .....	573
Contents .....	573
VpcPeeringConnectionType .....	574
Ancestors .....	574
Relevant Operations .....	574
Contents .....	574
VpcPeeringConnectionStateReasonType .....	575
Ancestors .....	575
Relevant Operations .....	575
Contents .....	575
VpcPeeringConnectionVpcInfoType .....	575

Ancestors .....	575
Relevant Operations .....	576
Contents .....	576
VpnConnectionOptionsResponseType .....	576
Relevant Operations .....	576
Contents .....	576
VpnConnectionType .....	576
Ancestors .....	576
Relevant Operations .....	577
Contents .....	577
VpnGatewayType .....	577
Ancestors .....	578
Relevant Operations .....	578
Contents .....	578
VpnStaticRouteType .....	578
Ancestors .....	578
Relevant Operations .....	578
Contents .....	579
VpnTunnelTelemetryType .....	579
Ancestors .....	579
Relevant Operations .....	579
Contents .....	579
Making API Requests .....	580
Required Knowledge .....	580
Available APIs for Amazon EC2 .....	580
Query Requests .....	581
Structure of a GET Request .....	582
Endpoints .....	583
Query Parameters .....	583
Query API Authentication .....	584
Query Response Structures .....	584
Troubleshooting API Request Errors .....	585
Query API Request Rate .....	585
Eventual Consistency .....	586
Unauthorized Operation .....	587
Ensuring Idempotency .....	587
Idempotency Support .....	588
Example Idempotent Command .....	589
Example Idempotent Query .....	589
SOAP Requests .....	589
Logging API Calls .....	590
Amazon EC2 Information in CloudTrail .....	590
Understanding Amazon EC2 Log File Entries .....	590
Common Query Parameters .....	593
Common Query Parameters for Signature Version 2 .....	593
Common Query Parameters for Signature Version 4 .....	594
Permissions .....	596
Customer Gateways .....	597
DHCP Options Sets .....	597
Instances .....	597
Internet Gateways .....	599
Network ACLs .....	600
Route Tables .....	600
Security Groups .....	600
Volumes .....	601
VPC Peering Connections .....	602
Error Codes .....	604
Common Causes of Client Errors .....	604

Client Error Codes .....	605
Summary of Server Error Codes .....	620
Request Error Response .....	620
Example Error Response Request .....	620
Eventual Consistency .....	621

# Welcome

This is the *Amazon EC2 API Reference*. It provides descriptions, syntax, and usage examples for each of the actions and data types for Amazon EC2 and Amazon Virtual Private Cloud (Amazon VPC).

The topic for each action shows the Query API request parameters and the XML response. You can also view the XML request elements in the WSDL.

Alternatively, you can use one of the AWS SDKs to access an API that's tailored to the programming language or platform that you're using. For more information, see [AWS SDKs](#).

How Do I?	Relevant Topics
Download the current WSDL (2014-09-01)	<a href="#">Amazon EC2 Developer Resources</a>
Learn about using the Query API	<a href="#">Making API Requests (p. 580)</a>
Get the list of API actions by function	<a href="#">List of Actions by Function (p. 2)</a>
Get the alphabetical list of API actions	<a href="#">Actions (p. 8)</a>
Get the alphabetical list of data types	<a href="#">Data Types (p. 484)</a>
Get a list of common query parameters	<a href="#">Common Query Parameters (p. 593)</a>
Get descriptions of the error codes	<a href="#">Error Codes (p. 604)</a>

## Note

We have deprecated the SOAP API for Amazon EC2. We will continue to support SOAP requests for API versions up to and including version 2014-02-01, until the end of December 2014. For more information, see [SOAP Requests \(p. 589\)](#).

To learn more about Amazon EC2 and Amazon VPC, see the following resources:

- [Amazon EC2 product page](#)
- [Amazon EC2 User Guide for Linux Instances](#)
- [Amazon VPC User Guide](#)
- [Amazon EC2 Command Line Reference](#)



# List of Actions by Function

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## Account Attributes

- [DescribeAccountAttributes](#) (p. 180)

## Amazon DevPay

- [ConfirmProductInstance](#) (p. 57)

## AMIs

- [CopyImage](#) (p. 59)
- [CreateImage](#) (p. 69)
- [DeregisterImage](#) (p. 178)
- [DescribeImageAttribute](#) (p. 205)
- [DescribeImages](#) (p. 208)
- [ModifyImageAttribute](#) (p. 391)
- [RegisterImage](#) (p. 420)
- [ResetImageAttribute](#) (p. 450)

## Bundle Tasks

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)
- [DescribeBundleTasks](#) (p. 190)

## Customer Gateways (Amazon VPC)

- [CreateCustomerGateway](#) (p. 64)
- [DeleteCustomerGateway](#) (p. 137)
- [DescribeCustomerGateways](#) (p. 195)

### **DHCP Options (Amazon VPC)**

- [AssociateDhcpOptions](#) (p. 22)
- [CreateDhcpOptions](#) (p. 66)
- [DeleteDhcpOptions](#) (p. 139)
- [DescribeDhcpOptions](#) (p. 199)

### **Elastic Block Store**

- [AttachVolume](#) (p. 30)
- [CopySnapshot](#) (p. 61)
- [CreateSnapshot](#) (p. 110)
- [CreateVolume](#) (p. 121)
- [DeleteSnapshot](#) (p. 159)
- [DeleteVolume](#) (p. 167)
- [DescribeSnapshotAttribute](#) (p. 296)
- [DescribeSnapshots](#) (p. 299)
- [DescribeVolumeAttribute](#) (p. 328)
- [DescribeVolumes](#) (p. 330)
- [DescribeVolumeStatus](#) (p. 335)
- [DetachVolume](#) (p. 362)
- [EnableVolumeIO](#) (p. 375)
- [ModifySnapshotAttribute](#) (p. 402)
- [ModifyVolumeAttribute](#) (p. 406)
- [ResetSnapshotAttribute](#) (p. 456)

### **Elastic IP Addresses**

- [AllocateAddress](#) (p. 13)
- [AssociateAddress](#) (p. 19)
- [DescribeAddresses](#) (p. 183)
- [DisassociateAddress](#) (p. 369)
- [ReleaseAddress](#) (p. 427)

### **Elastic Network Interfaces (Amazon VPC)**

- [AssignPrivateIpAddresses](#) (p. 16)
- [AttachNetworkInterface](#) (p. 28)
- [CreateNetworkInterface](#) (p. 86)
- [DeleteNetworkInterface](#) (p. 149)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)

- [DetachNetworkInterface](#) (p. 360)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ResetNetworkInterfaceAttribute](#) (p. 454)
- [UnassignPrivateIpAddresses](#) (p. 480)

### **Instances**

- [DescribeInstanceAttribute](#) (p. 216)
- [DescribeInstances](#) (p. 220)
- [DescribeInstanceStatus](#) (p. 232)
- [GetConsoleOutput](#) (p. 377)
- [GetPasswordData](#) (p. 379)
- [ModifyInstanceAttribute](#) (p. 394)
- [MonitorInstances](#) (p. 410)
- [RebootInstances](#) (p. 418)
- [ReportInstanceStatus](#) (p. 439)
- [ResetInstanceAttribute](#) (p. 452)
- [RunInstances](#) (p. 464)
- [StartInstances](#) (p. 474)
- [StopInstances](#) (p. 476)
- [TerminateInstances](#) (p. 478)
- [UnmonitorInstances](#) (p. 482)

### **Internet Gateways (Amazon VPC)**

- [AttachInternetGateway](#) (p. 26)
- [CreateInternetGateway](#) (p. 76)
- [DeleteInternetGateway](#) (p. 141)
- [DescribeInternetGateways](#) (p. 239)
- [DetachInternetGateway](#) (p. 358)

### **Key Pairs**

- [CreateKeyPair](#) (p. 78)
- [DeleteKeyPair](#) (p. 143)
- [DescribeKeyPairs](#) (p. 242)
- [ImportKeyPair](#) (p. 385)

### **Network ACLs (Amazon VPC)**

- [CreateNetworkAcl](#) (p. 81)
- [CreateNetworkAclEntry](#) (p. 83)

- [DeleteNetworkAcl](#) (p. 145)
- [DeleteNetworkAclEntry](#) (p. 147)
- [DescribeNetworkAcls](#) (p. 245)
- [ReplaceNetworkAclAssociation](#) (p. 429)
- [ReplaceNetworkAclEntry](#) (p. 431)

### **Placement Groups**

- [CreatePlacementGroup](#) (p. 91)
- [DeletePlacementGroup](#) (p. 151)
- [DescribePlacementGroups](#) (p. 259)

### **Regions and Availability Zones**

- [DescribeAvailabilityZones](#) (p. 187)
- [DescribeRegions](#) (p. 262)

### **Reserved Instances**

- [CancelReservedInstancesListing](#) (p. 51)
- [CreateReservedInstancesListing](#) (p. 93)
- [DescribeReservedInstances](#) (p. 265)
- [DescribeReservedInstancesListings](#) (p. 269)
- [DescribeReservedInstancesModifications](#) (p. 273)
- [DescribeReservedInstancesOfferings](#) (p. 277)
- [ModifyReservedInstances](#) (p. 400)
- [PurchaseReservedInstancesOffering](#) (p. 412)

### **Route Tables (Amazon VPC)**

- [AssociateRouteTable](#) (p. 24)
- [CreateRoute](#) (p. 102)
- [CreateRouteTable](#) (p. 105)
- [DeleteRoute](#) (p. 153)
- [DeleteRouteTable](#) (p. 155)
- [DescribeRouteTables](#) (p. 286)
- [DisableVgwRoutePropagation](#) (p. 367)
- [DisassociateRouteTable](#) (p. 371)
- [EnableVgwRoutePropagation](#) (p. 373)
- [ReplaceRoute](#) (p. 434)
- [ReplaceRouteTableAssociation](#) (p. 437)

## Security Groups

- [AuthorizeSecurityGroupEgress](#) (p. 35) (EC2-VPC only)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [CreateSecurityGroup](#) (p. 107)
- [DeleteSecurityGroup](#) (p. 157)
- [DescribeSecurityGroups](#) (p. 291)
- [RevokeSecurityGroupEgress](#) (p. 458) (EC2-VPC only)
- [RevokeSecurityGroupIngress](#) (p. 461)

## Spot Instances

- [CancelSpotInstanceRequests](#) (p. 54)
- [CreateSpotDatafeedSubscription](#) (p. 113)
- [DeleteSpotDatafeedSubscription](#) (p. 161)
- [DescribeSpotDatafeedSubscription](#) (p. 304)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [DescribeSpotPriceHistory](#) (p. 314)
- [RequestSpotInstances](#) (p. 442)

## Subnets (Amazon VPC)

- [CreateSubnet](#) (p. 115)
- [DeleteSubnet](#) (p. 162)
- [DescribeSubnets](#) (p. 318)
- [ModifySubnetAttribute](#) (p. 404)

## Tags

- [CreateTags](#) (p. 118)
- [DeleteTags](#) (p. 164)
- [DescribeTags](#) (p. 322)

## VM Import

- [CancelConversionTask](#) (p. 47)
- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

## VM Export

- [CancelExportTask](#) (p. 49)
- [CreateInstanceExportTask](#) (p. 73)

- [DescribeExportTasks](#) (p. 203)

### **VPCs (Amazon VPC)**

- [CreateVpc](#) (p. 125)
- [DeleteVpc](#) (p. 169)
- [DescribeVpcAttribute](#) (p. 340)
- [DescribeVpcs](#) (p. 346)
- [ModifyVpcAttribute](#) (p. 408)

### **VPC Peering Connections (Amazon VPC)**

- [AcceptVpcPeeringConnection](#) (p. 12)
- [CreateVpcPeeringConnection](#) (p. 127)
- [DeleteVpcPeeringConnection](#) (p. 170)
- [DescribeVpcPeeringConnections](#) (p. 342)
- [RejectVpcPeeringConnection](#) (p. 425)

### **VPN Connections (Amazon VPC)**

- [CreateVpnConnection](#) (p. 130)
- [CreateVpnConnectionRoute](#) (p. 133)
- [DeleteVpnConnection](#) (p. 172)
- [DeleteVpnConnectionRoute](#) (p. 174)
- [DescribeVpnConnections](#) (p. 350)

### **Virtual Private Gateways (Amazon VPC)**

- [AttachVpnGateway](#) (p. 33)
- [CreateVpnGateway](#) (p. 135)
- [DeleteVpnGateway](#) (p. 176)
- [DescribeVpnGateways](#) (p. 354)
- [DetachVpnGateway](#) (p. 365)

# Actions

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## Topics

- [AcceptVpcPeeringConnection](#) (p. 12)
- [AllocateAddress](#) (p. 13)
- [AssignPrivateIpAddresses](#) (p. 16)
- [AssociateAddress](#) (p. 19)
- [AssociateDhcpOptions](#) (p. 22)
- [AssociateRouteTable](#) (p. 24)
- [AttachInternetGateway](#) (p. 26)
- [AttachNetworkInterface](#) (p. 28)
- [AttachVolume](#) (p. 30)
- [AttachVpnGateway](#) (p. 33)
- [AuthorizeSecurityGroupEgress](#) (p. 35)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)
- [CancelConversionTask](#) (p. 47)
- [CancelExportTask](#) (p. 49)
- [CancelReservedInstancesListing](#) (p. 51)
- [CancelSpotInstanceRequests](#) (p. 54)
- [ConfirmProductInstance](#) (p. 57)
- [CopyImage](#) (p. 59)
- [CopySnapshot](#) (p. 61)
- [CreateCustomerGateway](#) (p. 64)
- [CreateDhcpOptions](#) (p. 66)
- [CreateImage](#) (p. 69)
- [CreateInstanceExportTask](#) (p. 73)
- [CreateInternetGateway](#) (p. 76)
- [CreateKeyPair](#) (p. 78)
- [CreateNetworkAcl](#) (p. 81)
- [CreateNetworkAclEntry](#) (p. 83)
- [CreateNetworkInterface](#) (p. 86)

- [CreatePlacementGroup](#) (p. 91)
- [CreateReservedInstancesListing](#) (p. 93)
- [CreateRoute](#) (p. 102)
- [CreateRouteTable](#) (p. 105)
- [CreateSecurityGroup](#) (p. 107)
- [CreateSnapshot](#) (p. 110)
- [CreateSpotDatafeedSubscription](#) (p. 113)
- [CreateSubnet](#) (p. 115)
- [CreateTags](#) (p. 118)
- [CreateVolume](#) (p. 121)
- [CreateVpc](#) (p. 125)
- [CreateVpcPeeringConnection](#) (p. 127)
- [CreateVpnConnection](#) (p. 130)
- [CreateVpnConnectionRoute](#) (p. 133)
- [CreateVpnGateway](#) (p. 135)
- [DeleteCustomerGateway](#) (p. 137)
- [DeleteDhcpOptions](#) (p. 139)
- [DeleteInternetGateway](#) (p. 141)
- [DeleteKeyPair](#) (p. 143)
- [DeleteNetworkAcl](#) (p. 145)
- [DeleteNetworkAclEntry](#) (p. 147)
- [DeleteNetworkInterface](#) (p. 149)
- [DeletePlacementGroup](#) (p. 151)
- [DeleteRoute](#) (p. 153)
- [DeleteRouteTable](#) (p. 155)
- [DeleteSecurityGroup](#) (p. 157)
- [DeleteSnapshot](#) (p. 159)
- [DeleteSpotDatafeedSubscription](#) (p. 161)
- [DeleteSubnet](#) (p. 162)
- [DeleteTags](#) (p. 164)
- [DeleteVolume](#) (p. 167)
- [DeleteVpc](#) (p. 169)
- [DeleteVpcPeeringConnection](#) (p. 170)
- [DeleteVpnConnection](#) (p. 172)
- [DeleteVpnConnectionRoute](#) (p. 174)
- [DeleteVpnGateway](#) (p. 176)
- [DeregisterImage](#) (p. 178)
- [DescribeAccountAttributes](#) (p. 180)
- [DescribeAddresses](#) (p. 183)
- [DescribeAvailabilityZones](#) (p. 187)
- [DescribeBundleTasks](#) (p. 190)
- [DescribeConversionTasks](#) (p. 193)
- [DescribeCustomerGateways](#) (p. 195)
- [DescribeDhcpOptions](#) (p. 199)
- [DescribeExportTasks](#) (p. 203)
- [DescribeImageAttribute](#) (p. 205)



- [DescribeImages](#) (p. 208)
- [DescribeInstanceAttribute](#) (p. 216)
- [DescribeInstances](#) (p. 220)
- [DescribeInstanceState](#) (p. 232)
- [DescribeInternetGateways](#) (p. 239)
- [DescribeKeyPairs](#) (p. 242)
- [DescribeNetworkAcls](#) (p. 245)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)
- [DescribePlacementGroups](#) (p. 259)
- [DescribeRegions](#) (p. 262)
- [DescribeReservedInstances](#) (p. 265)
- [DescribeReservedInstancesListings](#) (p. 269)
- [DescribeReservedInstancesModifications](#) (p. 273)
- [DescribeReservedInstancesOfferings](#) (p. 277)
- [DescribeRouteTables](#) (p. 286)
- [DescribeSecurityGroups](#) (p. 291)
- [DescribeSnapshotAttribute](#) (p. 296)
- [DescribeSnapshots](#) (p. 299)
- [DescribeSpotDatafeedSubscription](#) (p. 304)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [DescribeSpotPriceHistory](#) (p. 314)
- [DescribeSubnets](#) (p. 318)
- [DescribeTags](#) (p. 322)
- [DescribeVolumeAttribute](#) (p. 328)
- [DescribeVolumes](#) (p. 330)
- [DescribeVolumeStatus](#) (p. 335)
- [DescribeVpcAttribute](#) (p. 340)
- [DescribeVpcPeeringConnections](#) (p. 342)
- [DescribeVpcs](#) (p. 346)
- [DescribeVpnConnections](#) (p. 350)
- [DescribeVpnGateways](#) (p. 354)
- [DetachInternetGateway](#) (p. 358)
- [DetachNetworkInterface](#) (p. 360)
- [DetachVolume](#) (p. 362)
- [DetachVpnGateway](#) (p. 365)
- [DisableVgwRoutePropagation](#) (p. 367)
- [DisassociateAddress](#) (p. 369)
- [DisassociateRouteTable](#) (p. 371)
- [EnableVgwRoutePropagation](#) (p. 373)
- [EnableVolumeIO](#) (p. 375)
- [GetConsoleOutput](#) (p. 377)
- [GetPasswordData](#) (p. 379)
- [ImportInstance](#) (p. 381)
- [ImportKeyPair](#) (p. 385)
- [ImportVolume](#) (p. 388)

- [ModifyImageAttribute](#) (p. 391)
- [ModifyInstanceAttribute](#) (p. 394)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ModifyReservedInstances](#) (p. 400)
- [ModifySnapshotAttribute](#) (p. 402)
- [ModifySubnetAttribute](#) (p. 404)
- [ModifyVolumeAttribute](#) (p. 406)
- [ModifyVpcAttribute](#) (p. 408)
- [MonitorInstances](#) (p. 410)
- [PurchaseReservedInstancesOffering](#) (p. 412)
- [RebootInstances](#) (p. 418)
- [RegisterImage](#) (p. 420)
- [RejectVpcPeeringConnection](#) (p. 425)
- [ReleaseAddress](#) (p. 427)
- [ReplaceNetworkAclAssociation](#) (p. 429)
- [ReplaceNetworkAclEntry](#) (p. 431)
- [ReplaceRoute](#) (p. 434)
- [ReplaceRouteTableAssociation](#) (p. 437)
- [ReportInstanceStatus](#) (p. 439)
- [RequestSpotInstances](#) (p. 442)
- [ResetImageAttribute](#) (p. 450)
- [ResetInstanceAttribute](#) (p. 452)
- [ResetNetworkInterfaceAttribute](#) (p. 454)
- [ResetSnapshotAttribute](#) (p. 456)
- [RevokeSecurityGroupEgress](#) (p. 458)
- [RevokeSecurityGroupIngress](#) (p. 461)
- [RunInstances](#) (p. 464)
- [StartInstances](#) (p. 474)
- [StopInstances](#) (p. 476)
- [TerminateInstances](#) (p. 478)
- [UnassignPrivateIpAddresses](#) (p. 480)
- [UnmonitorInstances](#) (p. 482)

# AcceptVpcPeeringConnection

## Description

Accepts a VPC peering connection request. To accept a request, the VPC peering connection must be in the `pending-acceptance` state, and you must be the owner of the peer VPC. Use the [DescribeVpcPeeringConnections](#) (p. 342) request to view your outstanding VPC peering connection requests.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

*VpcPeeringConnectionId*

The ID of the VPC peering connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `CreateVpcPeeringConnection` element.

*vpcPeeringConnection*

Information about the peering connection.

Type: [VpcPeeringConnectionType](#) (p. 574)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [ActiveVpcPeeringConnectionPerVpcLimitExceeded](#) (p. 619)
- [InvalidStateTransition](#) (p. 619)
- [InvalidVpcPeeringConnectionId.Malformed](#) (p. 619)
- [InvalidVpcPeeringConnectionId.NotFound](#) (p. 619)
- [MissingParameter](#) (p. 619)
- [VpcPeeringConnectionAlreadyExists](#) (p. 619)

## Examples

### Example Request

This example accepts the specified VPC peering connection request.

```
https://ec2.amazonaws.com/?Action=AcceptVpcPeeringConnection
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

## Example Response

```
<AcceptVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcPeeringConnection>
    <vpcPeeringConnectionId>pcx-1a2b3c4d</vpcPeeringConnectionId>
    <requesterVpcInfo>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/28</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
      <ownerId>777788889999</ownerId>
      <vpcId>vpc-111aaa22</vpcId>
      <cidrBlock>10.0.1.0/28</cidrBlock>
    </accepterVpcInfo>
    <status>
      <code>active</code>
      <message>Active</message>
    </status>
    <tagSet/>
  </vpcPeeringConnection>
</AcceptVpcPeeringConnectionResponse>
```

## Related Actions

- [DescribeVpcPeeringConnections](#) (p. 342)
- [CreateVpcPeeringConnection](#) (p. 127)
- [RejectVpcPeeringConnection](#) (p. 425)
- [DeleteVpcPeeringConnection](#) (p. 170)
- [CreateRoute](#) (p. 102)
- [ReplaceRoute](#) (p. 434)

# AllocateAddress

## Description

Acquires an Elastic IP address.

An Elastic IP address is for use either in the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *Domain*

Set to `vpc` to allocate the address for use with instances in a VPC.

Type: String

Valid values: `vpc`

Default: The address is for use in EC2-Classic.

Required: Conditional

Condition: Required when allocating the address for use in a VPC.

## Response Elements

The following elements are returned in an `AllocateAddressResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`publicIp`

The Elastic IP address.

Type: `xsd:string`

`domain`

Indicates whether this Elastic IP address is for use with instances in EC2-Classic (`standard`) or instances in a VPC (`vpc`).

Type: `xsd:string`

Valid values: `standard` | `vpc`

`allocationId`

[EC2-VPC] The ID that AWS assigns to represent the allocation of the Elastic IP address for use with a VPC.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [AddressLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request allocates an Elastic IP address for use with instances in EC2-Classic.

```
https://ec2.amazonaws.com/?Action=AllocateAddress
&AUTHPARAMS
```

### Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>192.0.2.1</publicIp>
  <domain>standard</domain>
</AllocateAddressResponse>
```

## Example Request

This example request allocates an Elastic IP address for use with instances in a VPC.

```
https://ec2.amazonaws.com/?Action=AllocateAddress  
Domain=vpc  
&AUTHPARAMS
```

## Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <publicIp>198.51.100.1</publicIp>  
  <domain>vpc</domain>  
  <allocationId>eipalloc-5723d13e</allocationId>  
</AllocateAddressResponse>
```

## Related Actions

- [DescribeAddresses](#) (p. 183)
- [ReleaseAddress](#) (p. 427)
- [AssociateAddress](#) (p. 19)
- [DisassociateAddress](#) (p. 369)

# AssignPrivateIpAddresses

## Description

Assigns one or more secondary private IP addresses to the specified network interface. You can specify one or more specific secondary IP addresses, or you can specify the number of secondary IP addresses to be automatically assigned within the subnet's CIDR block range. The number of secondary IP addresses that you can assign to an instance varies by instance type. For more information, see [Private IP Addresses Per ENI Per Instance Type](#) and [Elastic IP Addresses](#) in the *Amazon EC2 User Guide for Linux Instances*.

This action is available only in EC2-VPC.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress.n*

One or more IP addresses to be assigned as a secondary private IP address to the network interface.

If you don't specify an IP address, Amazon EC2 automatically selects an IP address within the subnet range.

Type: [AssignPrivateIpAddressesSetItemRequestType \(p. 488\)](#)

Default: None

Required: Conditional

Condition: You can't specify this parameter when also specifying *SecondaryPrivateIpAddressCount*.

### *SecondaryPrivateIpAddressCount*

The number of secondary IP addresses to assign to the network interface.

Type: Integer

Default: None

Required: Conditional

Condition: You can't specify this parameter when also specifying *PrivateIPAddresses.n*.

### *AllowReassignment*

Indicates whether to allow an IP address that is already assigned to another network interface or instance to be reassigned to the specified network interface.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in an *AssignPrivateIpAddressesResponse* element.

### *requestId*

The ID of the request.

Type: xsd:string

return

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: xsd:boolean

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [PrivateIpAddressLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request assigns two secondary private IP addresses (10.0.2.1 and 10.0.2.11) to the specified network interface.

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.0=10.0.2.1
&PrivateIpAddress.1=10.0.2.11
&AUTHPARAMS
```

### Example Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

### Example Request

This example request assigns two secondary private IP addresses to the specified network interface. Amazon EC2 automatically assigns these IP addresses from the available IP addresses within the subnet's CIDR block range.

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&SecondaryPrivateIpAddressCount=2
&AUTHPARAMS
```



## Example Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</AssignPrivateIpAddresses>
```

## Related Actions

- [DescribeAddresses](#) (p. 183)
- [ReleaseAddress](#) (p. 427)
- [AssociateAddress](#) (p. 19)
- [DisassociateAddress](#) (p. 369)

# AssociateAddress

## Description

Associates an Elastic IP address with an instance or a network interface. For more information about Elastic IP addresses, see [Elastic IP Addresses](#) in the *Amazon EC2 User Guide for Linux Instances*.

[EC2-Classic, VPC in an EC2-VPC-only account] If the Elastic IP address is already associated with a different instance, it is disassociated from that instance and associated with the specified instance.

[VPC in an EC2-Classic account] If you don't specify a private IP address, the Elastic IP address is associated with the primary IP address. If the Elastic IP address is already associated with a different instance or a network interface, you get an error unless you specify the *AllowReassociation* parameter.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *PublicIp*

The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for Elastic IP addresses for use with instances in EC2-Classic.

### *InstanceId*

The ID of the instance. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic. For a VPC, you can specify either *InstanceID* or *NetworkInterfaceID*, but not both.

### *AllocationId*

[EC2-VPC] The allocation ID.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC.

### *NetworkInterfaceId*

[EC2-VPC] The ID of the network interface.

Type: String

Default: None

Required: Conditional

Condition: If the instance has more than one network interface, you must specify a network interface ID.

#### *PrivateIpAddress*

[EC2-VPC] The primary or secondary private IP address to associate with the Elastic IP address. If no private IP address is specified, the Elastic IP address is associated with the primary private IP address.

Type: String

Default: None

Required: No

#### *AllowReassociation*

[EC2-VPC] Allows an Elastic IP address that is already associated with an instance or network interface to be re-associated with the specified instance or network interface. Otherwise, the operation fails.

Type: Boolean

Default: `false` if not specified

Required: No

## Response Elements

The following elements are returned in an `AssociateAddressResponse` element.

#### `requestId`

The ID of the request.

Type: `xsd:string`

#### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

#### `associationId`

[EC2-VPC] The ID that represents the association of the Elastic IP address with an instance.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [Gateway.NotAttached \(p. 619\)](#)
- [IncorrectInstanceState \(p. 619\)](#)
- [InvalidAllocationID.NotFound \(p. 619\)](#)
- [InvalidInstanceID \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)
- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [MissingParameter \(p. 619\)](#)
- [Resource.AlreadyAssociated \(p. 619\)](#)

## Examples

### Example Request

This example request associates an Elastic IP address with an instance in EC2-Classic.

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-2ea64347
&PublicIp=192.0.2.1
&AUTHPARAMS
```

## Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>
```

## Example Request

This example request associates a Elastic IP address with an instance in a VPC. The `AllowReassignment` parameter allows the Elastic IP address to be associated with the specified instance even if it's already associated with a different instance or a network interface.

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-4fd2431a
&AllocationId=eipalloc-5723d13e
&AllowReassignment=true
&AUTHPARAMS
```

## Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 13)
- [DescribeAddresses](#) (p. 183)
- [ReleaseAddress](#) (p. 427)
- [DisassociateAddress](#) (p. 369)

# AssociateDhcpOptions

## Description

Associates a set of DHCP options (that you've previously created) with the specified VPC, or associates no DHCP options with the VPC.

After you associate the options with the VPC, any existing instances and all new instances that you launch in that VPC use the options. You don't need to restart or relaunch the instances. They automatically pick up the changes within a few hours, depending on how frequently the instance renews its DHCP lease. You can explicitly renew the lease using the operating system on the instance.

For more information, see [DHCP Options Sets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *DhcpOptionsId*

The ID of the DHCP options set, or `default` to associate no DHCP options with the VPC.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AssociateDhcpOptionsResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidVpcID.NotFound](#) (p. 619)

## Examples

### Example Request

This example request associates the DHCP options with the ID `dopt-7a8b9c2d` with the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

### Example Request

This example request changes the VPC with the ID `vpc-1a2b3c4d` to have no associated DHCP options set.

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=default
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

## Related Actions

- [CreateDhcpOptions](#) (p. 66)
- [DescribeDhcpOptions](#) (p. 199)
- [DeleteDhcpOptions](#) (p. 139)

# AssociateRouteTable

## Description

Associates a subnet with a route table. The subnet and route table must be in the same VPC. This association causes traffic originating from the subnet to be routed according to the routes in the route table. The action returns an association ID, which you need in order to disassociate the route table from the subnet later. A route table can be associated with multiple subnets.

For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AssociateRouteTableResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `associationId`

The route table association ID (needed to disassociate the route table).

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameterValue \(p. 619\)](#)
- [InvalidRouteTableID.NotFound \(p. 619\)](#)
- [InvalidSubnetID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request associates a route table with the ID `rtb-e4ad488d` with a subnet with the ID `subnet-15ad487c`.

```
https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-e4ad488d
&SubnetId=subnet-15ad487c
```

### Example Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```

### Related Actions

- [CreateRouteTable](#) (p. 105)
- [DisassociateRouteTable](#) (p. 371)
- [DescribeRouteTables](#) (p. 286)
- [ReplaceRouteTableAssociation](#) (p. 437)



# AttachInternetGateway

## Description

Attaches an Internet gateway to a VPC, enabling connectivity between the Internet and the VPC. For more information about your VPC and Internet gateway, see the [Amazon VPC User Guide](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachInternetGatewayResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInternetGatewayID.NotFound \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [Resource.AlreadyAssociated \(p. 619\)](#)

## Examples

### Example Request

This example request attaches the Internet gateway with the ID `igw-eaad4883` to the VPC with the ID `vpc-11ad4878`.

```
https://ec2.amazonaws.com/?Action=AttachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

### Example Response

```
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 76)
- [DeleteInternetGateway](#) (p. 141)
- [DetachInternetGateway](#) (p. 358)
- [DescribeInternetGateways](#) (p. 239)

# AttachNetworkInterface

## Description

Attaches a network interface to an instance.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *DeviceIndex*

The index of the device for the network interface attachment.

Type: Integer

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachNetworkInterfaceResponse` element.

### `requestId`

The ID of the attachment request.

Type: `xsd:string`

### `attachmentId`

The ID of the network interface attachment.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectState \(p. 619\)](#)
- [InvalidInstanceId.NotFound \(p. 619\)](#)
- [InvalidNetworkInterfaceId.NotFound \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)

## Examples

### Example Request

This example request attaches the specified network interface to the specified instance.

```
https://ec2.amazonaws.com/?Action=AttachNetworkInterface
&DeviceIndex=1
&InstanceId=i-9cc316fe
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

### Example Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

## Related Actions

- [DetachNetworkInterface](#) (p. 360)
- [CreateNetworkInterface](#) (p. 86)
- [DeleteNetworkInterface](#) (p. 149)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ResetNetworkInterfaceAttribute](#) (p. 454)

# AttachVolume

## Description

Attaches an Amazon EBS volume to a running or stopped instance and exposes it to the instance with the specified device name.

Encrypted Amazon EBS volumes can be attached only to instances that support Amazon EBS encryption. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

For a list of supported device names, see [Attaching the Volume to an Instance](#). Any device names that aren't reserved for instance store volumes can be used for Amazon EBS volumes. For more information, see [Amazon EC2 Instance Store](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Note

If a volume has an AWS Marketplace product code:

- The volume can be attached only to the root device of a stopped instance.
- AWS Marketplace product codes are copied from the volume to the instance.
- You must be subscribed to the product.
- The instance type and operating system of the instance must support the product. For example, you can't detach a volume from a Windows instance and attach it to a Linux instance.

For an overview of the AWS Marketplace, see [Introducing AWS Marketplace](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the volume. The volume and instance must be in the same Availability Zone.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance. The instance and volume must be in the same Availability Zone.

Type: String

Default: None

Required: Yes

### *Device*

The device name to expose to the instance (for example, `/dev/sdh` or `xvdh`).

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachVolumeResponse` element.

### `requestId`

The ID of the request.

Type: xsd:string

volumeId  
The ID of the volume.  
Type: xsd:string

instanceId  
The ID of the instance.  
Type: xsd:string

device  
The device name.  
Type: xsd:string

status  
The attachment state of the volume.  
Type: xsd:string  
Valid values: attaching | attached | detaching | detached

attachTime  
The time stamp when the attachment initiated.  
Type: xsd:dateTime

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [AttachmentLimitExceeded \(p. 619\)](#)
- [EncryptedVolumesNotSupported \(p. 619\)](#)
- [IncorrectState \(p. 619\)](#)
- [InvalidInstanceId.NotFound \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [InvalidVolume.NotFound \(p. 619\)](#)
- [InvalidVolume.ZoneMismatch \(p. 619\)](#)
- [VolumeInUse \(p. 619\)](#)

## Examples

### Example Request

This example request attaches the volume with the ID `vol-1a2b3c4d` to the instance with the ID `i-1a2b3c4d` and exposes it as `/dev/sdh`.

```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-1a2b3c4d
&InstanceId=i-1a2b3c4d
&Device=/dev/sdh
&AUTHPARAMS
```

## Example Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 121)
- [DeleteVolume](#) (p. 167)
- [DescribeVolumes](#) (p. 330)
- [DetachVolume](#) (p. 362)

# AttachVpnGateway

## Description

Attaches a virtual private gateway to a VPC. For more information, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachVpnGatewayResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `attachment`

Information about the attachment.

Type: [AttachmentType](#) (p. 489)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidVpcID.NotFound](#) (p. 619)
- [VpnGatewayAttachmentLimitExceeded](#) (p. 619)
- [InvalidVpcState](#) (p. 619)



## Examples

### Example Request

This example request attaches the virtual private gateway with the ID `vgw-8db04f81` to the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=AttachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>attaching</state>
  </attachment>
</AttachVpnGatewayResponse>
```

## Related Actions

- [CreateVpnGateway](#) (p. 135)
- [DescribeVpnGateways](#) (p. 354)
- [DetachVpnGateway](#) (p. 365)
- [CreateVpc](#) (p. 125)
- [CreateVpnConnection](#) (p. 130)

# AuthorizeSecurityGroupEgress

## Description

Adds one or more egress rules to a security group for use with a VPC. Specifically, this action permits instances to send traffic to one or more destination CIDR IP address ranges, or to one or more destination security groups for the same VPC.

### Important

You can have up to 50 rules per security group (covering both ingress and egress rules).

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. This action doesn't apply to security groups for use in EC2-Classic. For more information, see [Security Groups for Your VPC](#) in the *Amazon VPC User Guide*.

Each rule consists of the protocol (for example, TCP), plus either a CIDR range or a source group. For the TCP and UDP protocols, you must also specify the destination port or port range. For the ICMP protocol, you must also specify the ICMP type and code. You can use -1 for the type or code to mean all types or all codes.

Rule changes are propagated to affected instances as quickly as possible. However, a small delay might occur.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Yes

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)).

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use -1 to specify all.

Required: Yes

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

### *IpPermissions.n.ToPort*

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use -1 to specify all ICMP codes for the ICMP type.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

*IpPermissions.n.Groups.m.GroupId*

The name of the destination security group. You can't specify a destination security group and a CIDR IP address range.

Type: String

Default: None

Required: Yes

*IpPermissions.n.IpRanges.m.CidrIp*

The CIDR IP address range. You can't specify this parameter when specifying a destination security group.

Type: String

Default: 0.0.0.0/0

Constraints: A valid CIDR IP address range.

Required: No

## Response Elements

The following elements are returned in an `AuthorizeSecurityGroupEgressResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGroup.NotFound \(p. 619\)](#)
- [InvalidPermission.Duplicate \(p. 619\)](#)
- [RulesPerSecurityGroupLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request grants your security group with the ID `sg-1a2b3c4d` access to the `192.0.2.0/24` and `198.51.100.0/24` address ranges on TCP port 80.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
```

```
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24  
&AUTHPARAMS
```

## Example Request

This example request grants egress access from the security group with the ID `sg-1a2b3c4d` to the destination security group with the ID `sg-9a8d7f5c` on TCP port 1433.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress  
&GroupId=sg-1a2b3c4d  
&IpPermissions.1.IpProtocol=tcp  
&IpPermissions.1.FromPort=1433  
&IpPermissions.1.ToPort=1433  
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c  
&AUTHPARAMS
```

## Example Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2014-  
09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</AuthorizeSecurityGroupEgressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 107)
- [DescribeSecurityGroups](#) (p. 291)
- [RevokeSecurityGroupEgress](#) (p. 458)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [RevokeSecurityGroupIngress](#) (p. 461)
- [DeleteSecurityGroup](#) (p. 157)

# AuthorizeSecurityGroupIngress

## Description

Adds one or more ingress rules to a security group.

### Important

EC2-Classic: You can have up to 100 rules per group.

EC2-VPC: You can have up to 50 rules per group (covering both ingress and egress rules).

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see [Amazon EC2 Security Groups](#) in the *Amazon EC2 User Guide for Linux Instances* and [Security Groups for Your VPC](#) in the *Amazon VPC User Guide*.

[EC2-Classic] This action gives one or more CIDR IP address ranges permission to access a security group in your account, or gives one or more security groups (called the *source groups*) permission to access a security group for your account. A source group can be for your own AWS account, or another.

[EC2-VPC] This action gives one or more CIDR IP address ranges permission to access a security group in your VPC, or gives one or more other security groups (called the *source groups*) permission to access a security group for your VPC. The security groups must all be for the same VPC.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Required for a nondefault VPC; can be used instead of *GroupName* otherwise.

### *GroupName*

[EC2-Classic, default VPC] The name of the security group.

Type: String

Default: None

Required: No

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)). For EC2-Classic, security groups can have rules only for TCP, UDP, and ICMP. For EC2-VPC, security groups can have rules assigned to any protocol number.

When you use `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values for EC2-Classic: `tcp` | `udp` | `icmp` or the corresponding protocol number (6 | 17 | 1).

Valid values for EC2-VPC: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use -1 to specify all.

Required: Required for EC2-VPC.

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

*IpPermissions.n.ToPort*

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use -1 to specify all ICMP codes for the ICMP type.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

*IpPermissions.n.Groups.m.GroupName*

[EC2-Classic, default VPC] The name of the source security group. You can't specify a source security group and a CIDR IP address range.

Type: String

Default: None

Required: No

*IpPermissions.n.Groups.m.GroupId*

The ID of the source security group. You can't specify a source security group and a CIDR IP address range.

Type: String

Default: None

Required: Required for nondefault VPCs; can be used instead of `GroupName` otherwise.

*IpPermissions.n.Groups.m.UserId*

[EC2-Classic] The ID of the AWS account that owns the source security group, if it's not the current AWS account.

Type: String

Default: None

Required: No

*IpPermissions.n.IpRanges.m.CidrIp*

The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Default: 0.0.0.0/0

Constraints: A valid CIDR IP address range.

Required: No

## Response Elements

The following elements are returned in an `AuthorizeSecurityGroupIngressResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGroup.NotFound \(p. 619\)](#)
- [InvalidParameterCombination \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [InvalidPermission.Duplicate \(p. 619\)](#)
- [InvalidPermission.Malformed \(p. 619\)](#)
- [RulesPerSecurityGroupLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request grants TCP port 80 access from the 192.0.2.0/24 and 198.51.100.0/24 address ranges to the security group for EC2-Classic named `webserv`.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=webserv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

### Example Request

This example request grants TCP port 80 access from the source group for EC2-Classic named `OtherAccountGroup` (in AWS account 111122223333) to the security group for EC2-Classic named `webserv`.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=webserv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupName=OtherAccountGroup
&IpPermissions.1.Groups.1.UserId=111122223333
&AUTHPARAMS
```

### Example Request

This example request grants TCP port 80 access from the source group named `OtherGroupInMyVPC` (with the ID `sg-2a2b3c4d`) to the security group named `VpcWebServers` (with the ID `sg-1a2b3c4d`). In EC2-VPC, you must use the security group IDs in a request, not the security group names. In this example, your AWS account ID is 111122223333.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-2a2b3c4d
&IpPermissions.1.Groups.1.UserId=111122223333
&AUTHPARAMS
```

## Example Request

This example request grants your local system the ability to use SSH (port 22) to connect to any instance in the security group named default.

```
https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
&AUTHPARAMS
```

## Example Request

This example request grants your local system the ability to use Remote Desktop (port 3389) to connect to any instance in the security group named default.

```
https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=3389
&IpPermissions.1.ToPort=3389
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
&AUTHPARAMS
```

## Example Response

```
<AuthorizeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupIngressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 107)
- [DescribeSecurityGroups](#) (p. 291)
- [RevokeSecurityGroupIngress](#) (p. 461)
- [DeleteSecurityGroup](#) (p. 157)



# BundleInstance

## Description

Bundles an Amazon instance store-backed Windows instance.

During bundling, only the root device volume (C:\) is bundled. Data on other instance store volumes is not preserved.

**Note**

This action doesn't apply to Linux/Unix instances or Windows instances that are backed by Amazon EBS.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InstanceId*

The ID of the instance to bundle.

Type: String

Default: None

Required: Yes

*Storage.S3.Bucket*

The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: String

Default: None

Required: Yes

*Storage.S3.Prefix*

The beginning of the file name of the AMI.

Type: String

Default: None

Required: Yes

*Storage.S3.AWSSecretAccessKeyId*

The access key ID of the owner of the Amazon S3 bucket. Before you specify a value for this parameter, review and follow the guidance in [Best Practices for Managing AWS Access Keys](#).

Type: String

Default: None

Required: Yes

*Storage.S3.UploadPolicy*

A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on your behalf.

Type: String

Default: None

Required: Yes

*Storage.S3.UploadPolicySignature*

The signature of the Base64 encoded JSON document.

Type: String

Default: None

Required: Yes

## JSON Parameters

The upload policy gives Amazon EC2 limited permission to upload items into your Amazon S3 bucket. The following table describes the required parameters for the upload policy JSON document. Parameter names are case-sensitive. For more information about upload policies and how to sign them, see the sections about policy construction and signatures in the [Amazon Simple Storage Service Developer Guide](#).

`expiration`

The expiration of the policy. We recommend 12 hours or longer.

Required: Yes

`conditions`

A list of restrictions on what can be uploaded to Amazon S3. Must contain the bucket and ACL conditions in this table.

Required: Yes

`bucket`

The bucket to store the AMI.

Required: Yes

`acl`

This must be set to `ec2-bundle-read`.

Required: Yes

## Response Elements

The following elements are returned in a `BundleInstanceResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`bundleInstanceTask`

The bundle task.

Type: [BundleInstanceTaskType](#) (p. 493)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [BundlingInProgress](#) (p. 619)
- [InvalidInstanceType](#) (p. 619)
- [InvalidState](#) (p. 619)

## Examples

### Example Request

This example request bundles the specified instance.

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSSecretAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MD
laIiwuY29uZGl0aW9ucyI6IjFt7ImJlY2tldCI6ICJteSlidWNrZXQifSxbInN0YXJ0cy13aXRoIiwgI
iRrZXkiLCAibXktbmV3LWltYWdlIi0seyJhY2wiOiAiZWMyLWJlbnRsZSlyZWZkInlkaW50IiwiaWF0Ijoi
2008-10-07T11:51:50.000Z'&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3n1GNEXAMPLE
&AUTHPARAMS
```

## Example Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
    <bundleId>bun-cla540a8</bundleId>
    <state>bundling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>70%</progress>
    <storage>
      <S3>
        <bucket>myawsbucket</bucket>
        <prefix>winami</prefix>
      </S3>
    </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```

## Related Actions

- [CancelBundleTask](#) (p. 45)
- [DescribeBundleTasks](#) (p. 190)
- [CreateImage](#) (p. 69)

# CancelBundleTask

## Description

Cancels a bundling operation for an instance store-backed Windows instance.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *BundleId*

The ID of the bundle task.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CancelBundleTaskResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `bundleInstanceTask`

The bundle task.

Type: [BundleInstanceTaskType \(p. 493\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidBundleID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request cancels the specified bundle task.

```
https://ec2.amazonaws.com/?Action=CancelBundleTask
&BundleId=bun-cla322b9
&AUTHPARAMS
```

## Example Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
    <bundleId>bun-cla322b9</bundleId>
    <state>canceling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>20%</progress>
    <storage>
      <S3>
        <bucket>myawsbucket</bucket>
        <prefix>my-new-image</prefix>
      </S3>
    </storage>
  </bundleInstanceTask>
</CancelBundleTaskResponse>
```

## Related Actions

- [BundleInstance](#) (p. 42)
- [DescribeBundleTasks](#) (p. 190)

# CancelConversionTask

## Description

Cancel an active conversion task. The task can be the import of an instance or volume. The action removes all artifacts of the conversion, including a partially uploaded volume or instance. If the conversion is complete or is in the process of transferring the final disk image, the command fails and returns an exception.

For more information, see [Canceling an Upload](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ConversionTaskId*

The ID of the conversion task.

Type: String

Default: None

Required: Yes

## Response Elements

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidConversionTaskId \(p. 619\)](#)

## Examples

### Example Request

This example request cancels the conversion task with the ID `import-i-fh95npoc`.

```
https://ec2.amazonaws.com/?Action=CancelConversionTask
&ConversionTaskId=import-i-fh95npoc
&AUTHPARAMS
```

## Example Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</CancelConversionTaskResponse>
```

## Related Actions

- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)
- [DescribeConversionTasks](#) (p. 193)

# CancelExportTask

## Description

Cancels an active export task. The request removes all artifacts of the export, including any partially-created Amazon S3 objects. If the export task is complete or is in the process of transferring the final disk image, the command fails and returns an error.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ExportTaskId*

The ID of the export task. This is the ID returned by `CreateInstanceExportTask`.

Type: String

Default: None

Required: Yes

## Response Elements

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidExportTaskID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request cancels the export task with the ID `export-i-1234wxyz`.

```
https://ec2.amazonaws.com/?Action=CancelExportTask
&exportTaskId=export-i-1234wxyz
&AUTHPARAMS
```



## Example Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<return>true</return>  
</CancelExportTask>
```

## Related Actions

- [CreateInstanceExportTask](#) (p. 73)
- [DescribeExportTasks](#) (p. 203)

# CancelReservedInstancesListing

## Description

Cancels the specified Reserved Instance listing in the Reserved Instance Marketplace.

For more information about Reserved Instance Marketplace, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*reservedInstancesListingId*

The ID of the Reserved Instance listing to be canceled.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CancelReservedInstancesListingResponseType` element.

*requestId*

The ID of the request.

Type: `xsd:string`

*reservedInstancesListingsSet*

The Reserved Instance listing for cancellation. The listing information is wrapped in an `item` element.

Type: [DescribeReservedInstancesListingsResponseSetItem Type \(p. 500\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInput \(p. 619\)](#)

## Examples

### Example Request

This example request cancels a Reserved Instance listing in the Reserved Instance Marketplace.

```
https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing
&ReservedInstancesListingId=3ebe97b5-f273-43b6-a204-7a18cEXAMPLE
&AUTHPARAMS
```

## Example Response

The response shows that status is CANCELLED.

```
<CancelReservedInstancesListingResponse>
  <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-
7a18cEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <createDate>2012-07-12T16:55:28.000Z</createDate>
      <updateDate>2012-07-12T16:55:28.000Z</updateDate>
      <status>cancelled</status>
      <statusMessage>CANCELLED</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>1</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>5</term>
          <price>166.64</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
        <item>
          <term>4</term>
          <price>133.32</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
        <item>
          <term>3</term>
          <price>99.99</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
        <item>
          <term>2</term>
          <price>66.66</price>
          <currencyCode>USD</currencyCode>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

```
        <active>false</active>
    </item>
    <item>
        <term>1</term>
        <price>33.33</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
</priceSchedules>
<tagSet/>
<clientToken>XqJIt1342112125076</clientToken>
</item>
</reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

## Related Actions

- [CreateReservedInstancesListing](#) (p. 93)
- [DescribeReservedInstancesListings](#) (p. 269)

# CancelSpotInstanceRequests

## Description

Cancels one or more Spot Instance requests. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Important

Canceling a Spot Instance request does not terminate running Spot Instances associated with the request.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

*SpotInstanceRequestId.n*

One or more Spot Instance request IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CancelSpotInstanceRequestsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`spotInstanceRequestSet`

A list of Spot Instance requests. Each request is wrapped in an `item` element.

Type: [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 494)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidSpotInstanceRequestID.NotFound](#) (p. 619)

## Examples

### Cancel a Spot Instance Request

#### To cancel Spot Instance requests

1. Construct the following Query request to view your open Spot Instance requests.

2. Construct a Query request to cancel the Spot Instance requests.

**Tip**

You can filter the list of Spot Instance requests to return only certain instance types. For more information about how to filter the results, see [DescribeSpotInstanceRequests](#) in the *Amazon EC2 API Reference*.

## Example Request

This example gets a list of your open Spot Instance requests.

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=state
&Filter.1.Value.1=open
&AUTHPARAMS
```

## Example Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>8cd6486a-80e1-494d-8a4f-be36cEXAMPLE</requestId>
  <spotInstanceRequestSet>
    ...
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.002000</spotPrice>
      <type>one-time</type>
      <state>open</state>
      <status>
        <code>not-scheduled-yet</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request will not be evaluated until YYYY-MM-DDTHH:MM:SS+0000 due to your 'Valid From' constraint.</message>
      </status>
      <validFrom>YYYY-MM-DDTHH:MM:SS.000Z</validFrom>
      <validUntil>YYYY-MM-DDTHH:MM:SS.000Z</validUntil>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-security-group</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>Linux</groupName>
          </item>
        </groupSet>
        <instanceType>t1.micro</instanceType>
        <blockDeviceMapping>
          <item>
            <deviceName>/dev/sda1</deviceName>
            <ebs>
              <volumeSize>8</volumeSize>
              <deleteOnTermination>true</deleteOnTermination>
              <volumeType>standard</volumeType>
            </ebs>
          </item>
        </blockDeviceMapping>
      </launchSpecification>
    </item>
  </spotInstanceRequestSet>
</DescribeSpotInstanceRequestsResponse>
```

```
        </blockDeviceMapping>
        <monitoring>
            <enabled>>false</enabled>
        </monitoring>
    </launchSpecification>
    <createTime>2013-06-14T16:00:40.000Z</createTime>
    <productDescription>Linux/UNIX</productDescription>
</item>
...
</spotInstanceRequestSet>
</DescribeSpotInstanceRequestsResponse>
```

## Example Request

This example cancels a Spot Instance request.

```
https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-1a2b3c4d
&AUTHPARAMS
```

## Example Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)
- [DescribeSpotPriceHistory](#) (p. 314)

# ConfirmProductInstance

## Description

Determines whether a product code is associated with an instance. This action can only be used by the owner of the product code. It is useful when a product code owner needs to verify whether another user's instance is eligible for support.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ProductCode*

The product code. This must be an Amazon DevPay product code that you own.

Type: String

Default: None

Required: Yes

### *InstanceId*

The instance.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ConfirmProductInstanceResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

### `ownerId`

The AWS account ID of the instance owner. This is only present if the product code is attached to the instance.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceId.NotFound \(p. 619\)](#)



## Examples

### Example Request

This example request determines whether the specified product code is associated with the specified instance.

```
https://ec2.amazonaws.com/?Action=ConfirmProductInstance
&ProductCode=774F4FF8
&InstanceId=i-10a64379
&AUTHPARAMS
```

### Example Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

# CopyImage

## Description

Initiates the copy of an AMI from the specified source region to the current region. You specify the destination region by using its endpoint when making the request.

### Note

You can't copy an AMI that uses encrypted snapshots.

For more information, see [Copying an AMI](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SourceRegion*

The name of the region that contains the AMI to copy.

Type: String

Default: None

Required: Yes

### *SourceImageId*

The ID of the AMI to copy.

Type: String

Default: None

Required: Yes

### *Name*

The name of the new AMI in the destination region.

Type: String

Default: Same name as the AMI being copied.

Required: No

### *Description*

A description for the new AMI in the destination region.

Type: String

Default: Same description as the AMI being copied.

Constraints: Up to 255 characters

Required: No

### *ClientToken*

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see [How to Ensure Idempotency](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

The following elements are returned in a `CopyImage` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`imageId`  
The ID of the new AMI.  
Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAMIID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request copies the AMI in us-west-2 with the ID `ami-1a2b3c4d`, naming the new AMI `My-Standard-AMI`.

```
https://ec2.amazonaws.com/?Action=CopyImage
&SourceRegion=us-west-2
&SourceImageId=ami-1a2b3c4d
&Name=My-Standard-AMI
&Description=This%20is%20the%20new%20version%20of%20My-Standard-AMI
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

### Example Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

# CopySnapshot

## Description

Copies a point-in-time snapshot of an Amazon Elastic Block Store (Amazon EBS) volume and stores it in Amazon Simple Storage Service (Amazon S3). You can copy the snapshot within the same region or from one region to another. The snapshot is copied to the regional endpoint that you send the HTTP request to. For more information, see [Regions and Endpoints](#).

Copies of encrypted Amazon EBS snapshots remain encrypted. Copies of unencrypted snapshots remain unencrypted.

For more information, see [Copying an Amazon EBS Snapshot](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SourceRegion*

The ID of the region that contains the snapshot to be copied.

Type: String

Default: None

Required: Yes

### *SourceSnapshotId*

The ID of the Amazon EBS snapshot to copy.

Type: String

Default: None

Required: Yes

### *Description*

A description for the new Amazon EBS snapshot.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

### *DestinationRegion*

The destination region of the snapshot copy operation.

Type: String

Required: Conditional

Condition: Required in the *PresignedUrl*.

### *PresignedUrl*

The pre-signed URL that facilitates copying an encrypted snapshot. The *PresignedUrl* should use the snapshot source endpoint, the *CopySnapshot* action, and include the *SourceRegion*, *SourceSnapshotId*, and *DestinationRegion* parameters. The *PresignedUrl* must be signed using AWS Signature Version 4. Because Amazon EBS snapshots are stored in Amazon S3, the signing algorithm for this parameter uses the same logic that is described in [Authenticating Requests by Using Query Parameters \(AWS Signature Version 4\)](#) in the *Amazon Simple Storage Service API Reference*. An invalid or improperly signed *PresignedUrl* will cause the copy operation to fail asynchronously, and the snapshot will move to an `error` state.

Type: String

Default: None

Required: Conditional

Condition: Required for copying encrypted snapshots.

## Response Elements

The following elements are returned in a `CopySnapshotResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`snapshotId`

The ID of the new snapshot.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidSnapshot.NotFound \(p. 619\)](#)
- [ResourceLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request copies the snapshot in the `us-west-1` region with the ID `snap-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=CopySnapshot
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1a2b3c4d
&Description=My%20snapshot
&AUTHPARAMS
```

### Example Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>
```

### Example Request

This example request copies an encrypted snapshot in the `ap-southeast-2` region with the ID `snap-1a2b3c4d` to the `sa-east-1` region.

Because this snapshot is encrypted, the `PresignedUrl` is required. For this example, the `PresignedUrl` takes the following form with the source region as the endpoint.

```
https://ec2.ap-southeast-2.amazonaws.com/?Action=CopySnapshot
&SourceRegion=ap-southeast-2
&SourceSnapshotId=snap-1a2b3c4d
&DestinationRegion=sa-east-1
&AUTHPARAMS
```

This URL should be signed using AWS Signature Version 4, and used in the API call to the destination region as the `PresignedUrl` parameter (the URL in the example below is not actually signed, but it illustrates the required parameters that would need to be signed to copy encrypted snapshots).

```
https://ec2.sa-east-1.amazonaws.com/?Action=CopySnapshot
&SourceRegion=ap-southeast-2
&SourceSnapshotId=snap-1a2b3c4d
&DestinationRegion=sa-east-1
&Description=My%20snapshot
&PresignedUrl=https://ec2.ap-southeast-2.amazonaws.com/?Action=CopySnap
shot&SourceRegion=ap-southeast-2&SourceSnapshotId=snap-1a2b3c4d&DestinationRe
gion=sa-east-1&AUTHPARAMS
&AUTHPARAMS
```

## Example Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 110)
- [DeleteSnapshot](#) (p. 159)
- [DescribeSnapshots](#) (p. 299)

# CreateCustomerGateway

## Description

Provides information to AWS about your VPN customer gateway device. The customer gateway is the appliance at your end of the VPN connection. (The device on the AWS side of the VPN connection is the virtual private gateway.) You must provide the Internet-routable IP address of the customer gateway's external interface. The IP address must be static and can't be behind a device performing network address translation (NAT).

For devices that use Border Gateway Protocol (BGP), you can also provide the device's BGP Autonomous System Number (ASN). You can use an existing ASN assigned to your network. If you don't have an ASN already, you can use a private ASN (in the 64512 - 65534 range).

### Note

Amazon EC2 supports all 2-byte ASN numbers in the range of 1 - 65534, with the exception of 7224, which is reserved in the US East (N. Virginia) region, and 9059, which is reserved in the EU (Ireland) region.

For more information about ASNs, see the [Wikipedia article](#).

For more information about VPN customer gateways, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *Type*

The type of VPN connection that this customer gateway supports.

Type: String

Valid values: `ipsec.1`

Default: None

Required: Yes

### *IpAddress*

The Internet-routable IP address for the customer gateway's outside interface. The address must be static.

Type: String

Default: None

Required: Yes

### *BgpAsn*

For devices that support BGP, the customer gateway's BGP ASN.

Type: Integer

Default: 65000

Required: No

## Response Elements

The following elements are returned in an `CreateCustomerGatewayResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`  
`customerGateway`  
Information about the customer gateway.  
Type: [CustomerGatewayType](#) (p. 496)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [CustomerGatewayLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example request passes information to AWS about the customer gateway with the IP address 12.1.2.3 and BGP ASN 65534.

```
https://ec2.amazonaws.com/?Action=CreateCustomerGateway
&Type=ipsec.1
&IpAddress=12.1.2.3
&BgpAsn=65534
&AUTHPARAMS
```

### Example Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGateway>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
    <ipAddress>12.1.2.3</ipAddress>
    <bgpAsn>65534</bgpAsn>
    <tagSet/>
  </customerGateway>
</CreateCustomerGatewayResponse>
```

## Related Actions

- [DescribeCustomerGateways](#) (p. 195)
- [DeleteCustomerGateway](#) (p. 137)



# CreateDhcpOptions

## Description

Creates a set of DHCP options for your VPC. After creating the set, you must associate it with the VPC, causing all existing and new instances that you launch in the VPC to use this set of DHCP options. The following are the individual DHCP options you can specify. For more information about the options, see [RFC 2132](#).

DHCP Option Name	Description
domain-name-servers	The IP addresses of up to four domain name servers, or AmazonProvidedDNS. The default DHCP option set specifies AmazonProvidedDNS. If specifying more than one domain name server in a single parameter, separate them with commas.
domain-name	If you're using AmazonProvidedDNS in <code>us-east-1</code> , specify <code>ec2.internal</code> . If you're using AmazonProvidedDNS in another region, specify <code>region.compute.internal</code> (for example, <code>ap-northeast-1.compute.internal</code> ). Otherwise, specify a domain name (for example, <code>MyCompany.com</code> ). If specifying more than one domain name in a single parameter, separate them with spaces.
ntp-servers	The IP addresses of up to four Network Time Protocol (NTP) servers.
netbios-name-servers	The IP addresses of up to four NetBIOS name servers.
netbios-node-type	The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2 (broadcast and multicast are not currently supported). For more information about these node types, see <a href="#">RFC 2132</a> .

### Important

Your VPC automatically starts out with a set of DHCP options that includes only a DNS server that we provide (AmazonProvidedDNS). If you create a set of options, and if your VPC has an Internet gateway, make sure to set the `domain-name-servers` option either to Amazon-ProvidedDNS or to a domain name server of your choice.

For more information about DHCP options, see [DHCP Options Sets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*DhcpConfiguration.n.Key*

The name of a DHCP option.

Type: String

Default: None

Required: Yes

*DhcpConfiguration.n.Value.m*

A value for the DHCP option.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `CreateDhcpOptionsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`dhcpOptions`

A set of DHCP options.

Type: [DhcpOptionsType](#) (p. 509)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example request creates a set of DHCP options with a domain name `example.com` and two DNS servers (`10.2.5.1` and `10.2.5.2`). The DNS servers' IP addresses are specified in a single parameter, separated by commas, to preserve the order in which they are specified.

```
https://ec2.amazonaws.com/?Action=CreateDhcpOptions
&DhcpConfiguration.1.Key=domain-name
&DhcpConfiguration.1.Value.1=example.com
&DhcpConfiguration.2.Key=domain-name-servers
&DhcpConfiguration.2.Value.1=10.2.5.1,10.2.5.2
&AUTHPARAMS
```

### Example Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptions>
    <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
    <dhcpConfigurationSet>
      <item>
        <key>domain-name</key>
```

```
    <valueSet>
      <item>
        <value>example.com</value>
      </item>
    </valueSet>
  </item>
  <item>
    <key>domain-name-servers</key>
    <valueSet>
      <item>
        <value>10.2.5.1</value>
      </item>
      <item>
        <value>10.2.5.2</value>
      </item>
    </valueSet>
  </item>
</dhcpConfigurationSet>
<tagSet/>
</dhcpOptions>
</CreateDhcpOptionsResponse>
```

## Related Actions

- [AssociateDhcpOptions](#) (p. 22)
- [DescribeDhcpOptions](#) (p. 199)
- [DeleteDhcpOptions](#) (p. 139)

# CreateImage

## Description

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped.

### Note

If you customized your instance with instance store volumes or EBS volumes in addition to the root device volume, the new AMI contains block device mapping information for those volumes. When you launch an instance from this new AMI, the instance automatically launches with those additional volumes.

For more information, see [Creating Amazon EBS-Backed Linux AMIs](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Name*

A name for the new image.

Type: String

Default: None

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(\_)

Required: Yes

### *Description*

A description for the new image.

Type: String

Default: None

Constraints: Up to 255 ASCII characters

Required: No

### *NoReboot*

By default, this parameter is set to `false`, which means Amazon EC2 attempts to shut down the instance cleanly before image creation and then reboots the instance. When the parameter is set to `true`, Amazon EC2 doesn't shut down the instance before creating the image. When this option is used, file system integrity on the created image can't be guaranteed.

Type: Boolean

Default: `false`

Required: No

### *BlockDeviceMapping.n.DeviceName*

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify *DeviceName* with the root device name and *BlockDeviceMapping.n.Ebs.SnapshotId* with the snapshot ID

*BlockDeviceMapping.n.NoDevice*

Suppresses a device mapping.

Type: Boolean

Default: `true`

Required: No

*BlockDeviceMapping.n.VirtualName*

The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Constraint: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Required: No

*BlockDeviceMapping.n.Ebs.SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify *SnapshotId* with the snapshot ID, and *BlockDeviceMapping.n.DeviceName* with the root device name.

*BlockDeviceMapping.n.Ebs.VolumeSize*

The size of the volume, in GiBs.

Type: Integer

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the size of the snapshot.

Constraints: If the volume type is `io1`, the minimum size of the volume is 10 GiB. If you specify *SnapshotId* and *VolumeSize*, *VolumeSize* must be equal to or larger than the size of the snapshot.

Required: No

*BlockDeviceMapping.n.Ebs.DeleteOnTermination*

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Default: `true`

Required: No

*BlockDeviceMapping.n.Ebs.VolumeType*

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Required: No

*BlockDeviceMapping.n.Ebs.Iops*

Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume.

Type: Integer

Valid values: Range is 100 to 4,000.

Default: None

Required: Required when the volume type is `io1`; not used with `standard` or `gp2` volumes.

*BlockDeviceMapping.n.Ebs.Encrypted*

Specifies whether the volume is encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are automatically encrypted. There is no way to create an encrypted volume from an unencrypted snapshot or vice versa. If your AMI uses encrypted volumes, you can only launch it on supported instance types. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `CreateImageResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`imageId`

The ID of the new AMI.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAMIName.Duplicate \(p. 619\)](#)
- [InvalidAMIName.Malformed \(p. 619\)](#)
- [InvalidBlockDeviceMapping \(p. 619\)](#)
- [InvalidInstanceId.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request creates an AMI from the specified instance.

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-10a64379
&Name=standard-web-server-v1.0
&AUTHPARAMS
```

## Example Request

This example request creates an AMI with three volumes. The first volume is based on an Amazon EBS snapshot. The second volume is an empty 100 GiB Amazon EBS volume. The third volume is an instance store volume, `ephemeral0`.

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-10a64379
&Name=standard-web-server-v1.0
&BlockDeviceMapping.1.DeviceName=/dev/sdf
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&BlockDeviceMapping.2.DeviceName=/dev/sdg
&BlockDeviceMapping.2.Ebs.VolumeSize=100
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.VirtualName=ephemeral0
&AUTHPARAMS
```

## Related Actions

- [RunInstances](#) (p. 464)
- [DescribeInstances](#) (p. 220)
- [TerminateInstances](#) (p. 478)

# CreateInstanceExportTask

## Description

Exports a running or stopped instance to an Amazon S3 bucket.

For information about the supported operating systems, image formats, and known limitations for the types of instances you can export, see [Exporting EC2 Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *Description*

A description for the conversion task or the resource being exported. The maximum length is 255 bytes.

Type: String

Default: None

Required: No

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *TargetEnvironment*

The target virtualization environment.

Type: String

Valid values: `vmware` | `citrix` | `microsoft`

Default: None

Required: Yes

### *ExportToS3.DiskImageFormat*

The format for the exported image.

Type: String

Valid values: `vmdk` | `vhd`

Default: `vmdk` if `TargetEnvironment` = `vmware`, otherwise `vhd`

Required: No

### *ExportToS3.ContainerFormat*

The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid values: `ova`

Default: `ova` if `TargetEnvironment` = `vmware`, otherwise blank

Required: No

### *ExportToS3.S3Bucket*

The Amazon S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ\_ACL permissions to the AWS account `vm-import-export@amazon.com`.

Type: String

Default: None



Required: Yes

*ExportToS3.S3Prefix*

The image is written to a single object in the Amazon S3 bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `CreateInstanceExportTaskResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`exportTask`

The details of the created ExportVM task.

Type: [ExportTaskResponseType](#) (p. 513)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInstanceID.NotFound](#) (p. 619)
- [NotExportable](#) (p. 619)

## Examples

### Example Request

This example request creates an Export VM task that makes a Windows instance available as an OVA.

```
https://ec2.amazonaws.com/?Action=CreateInstanceExportTask
&Description=Example%20for%20docs
&InstanceId=i-12345678
&TargetEnvironment=VMWare
&ExportToS3.DiskImageFormat=VMDK
&ExportToS3.ContainerFormat=OVA
&ExportToS3.S3bucket=my-bucket-for-exported-vm
&ExportToS3.S3prefix=my-exports/
&AUTHPARAMS
```

### Example Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<exportTask>
  <exportTaskId>export-i-1234wxyz</exportTaskId>
  <description>Example for docs</description>
  <state>active</state>
  <statusMessage>Running</statusMessage>
  <instanceExport>
    <instanceId>i-12345678</instanceId>
    <targetEnvironment>VMWare</targetEnvironment>
  </instanceExport>
  <exportToS3>
    <diskImageFormat>VMDK</diskImageFormat>
    <containerFormat>OVA</containerFormat>
    <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
    <s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
  </exportToS3>
</exportTask>
</CreateInstanceExportTaskResponse>
```

## Related Actions

- [CancelExportTask](#) (p. 49)
- [DescribeExportTasks](#) (p. 203)

# CreateInternetGateway

## Description

Creates an Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using [AttachInternetGateway](#) (p. 26).

For more information about your VPC and Internet gateway, see the [Amazon VPC User Guide](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

No parameters.

## Response Elements

The following elements are returned in a `CreateInternetGatewayResponse` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`internetGateway`  
Information about the Internet gateway.  
Type: [InternetGatewayType](#) (p. 532)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InternetGatewayLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example request creates an Internet gateway.

```
https://ec2.amazonaws.com/?Action=CreateInternetGateway
&AUTHPARAMS
```

### Example Response

```
<CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGateway>
```

```
<internetGatewayId>igw-eaad4883</internetGatewayId>  
<attachmentSet/>  
<tagSet/>  
</internetGateway>  
</CreateInternetGatewayResponse>
```

## Related Actions

- [DeleteInternetGateway](#) (p. 141)
- [AttachInternetGateway](#) (p. 26)
- [DetachInternetGateway](#) (p. 358)
- [DescribeInternetGateways](#) (p. 239)

# CreateKeyPair

## Description

Creates a 2048-bit RSA key pair with the specified name. Amazon EC2 stores the public key and displays the private key for you to save to a file. The private key is returned as an unencrypted PEM encoded PKCS#8 private key. If a key with the specified name already exists, Amazon EC2 returns an error.

You can have up to five thousand key pairs per region.

### Tip

The key pair returned to you is available only in the region in which you create it. To create a key pair that is available in all regions, use [ImportKeyPair \(p. 385\)](#).

For more information about key pairs, see [Key Pairs](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *KeyName*

A unique name for the key pair.

Type: String

Default: None

Constraints: Up to 255 ASCII characters.

Required: Yes

## Response Elements

The following elements are returned in a `CreateKeyPairResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `keyName`

The name of the key pair name.

Type: `xsd:string`

### `keyFingerprint`

A SHA-1 digest of the DER encoded private key.

Type: `xsd:string`

### `keyMaterial`

An unencrypted PEM encoded RSA private key.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidKeyPair.Duplicate \(p. 619\)](#)

## Examples

### Example Request

This example request creates a key pair named `my-key-pair`.

```
https://ec2.amazonaws.com/?Action=CreateKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

### Example Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <keyName>my-key-pair</keyName>
  <keyFingerprint>
    1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f
  </keyFingerprint>
  <keyMaterial>---- BEGIN RSA PRIVATE KEY ----
MIICiTCCAfICCCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAGTAldBMRAdDgYDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBASTC0lBTSBDb25zb2x1MRIwEAYDVQQDEw1UZXR0Q2lsYWVWbHAd
BgkqhkiG9w0BCQEWEG5vb25lQGFTYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI1MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRAdDgYD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBASTC0lBTSBDb25z
b2x1MRIwEAYDVQQDEw1UZXR0Q2lsYWVWbHAdBgkqhkiG9w0BCQEWEG5vb25lQGFT
YXpvbi5jb20wZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb30hjZnzcvcQAaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEATCu4
nUhVVxYUntned9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJiLJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----</keyMaterial>
</CreateKeyPairResponse>
```

Create a file named `my-key-pair.pem` and paste the entire key from the response into this file, including the following lines.

```
"---- BEGIN RSA PRIVATE KEY ----"
"-----END RSA PRIVATE KEY-----"
```

Confirm that the file contents are similar to the following and save the file to a local directory.

```
---- BEGIN RSA PRIVATE KEY ----
MIICiTCCAfICCCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAGTAldBMRAdDgYDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBASTC0lBTSBDb25zb2x1MRIwEAYDVQQDEw1UZXR0Q2lsYWVWbHAd
BgkqhkiG9w0BCQEWEG5vb25lQGFTYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI1MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRAdDgYD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBASTC0lBTSBDb25z
b2x1MRIwEAYDVQQDEw1UZXR0Q2lsYWVWbHAdBgkqhkiG9w0BCQEWEG5vb25lQGFT
YXpvbi5jb20wZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
```

```
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE  
Ibb3OhjZnzcVQAaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4  
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb  
FFBjvSfpJI1J00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb  
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE  
-----END RSA PRIVATE KEY-----
```

Keep this file in a safe place; it is required to decrypt login information when you connect to an instance that you launched using this key pair.

If you're using an SSH client on a Linux computer to connect to your instance, use the following command to set the permissions of your private key file so that only you can read it.

```
$ chmod 400 my-key-pair.pem
```

## Related Actions

- [RunInstances](#) (p. 464)
- [DescribeKeyPairs](#) (p. 242)
- [DeleteKeyPair](#) (p. 143)

# CreateNetworkAcl

## Description

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (in addition to security groups) for the instances in your VPC.

For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateNetworkAclResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`networkAcl`

Information about the network ACL.

Type: [NetworkAclType \(p. 540\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpcID.NotFound \(p. 619\)](#)
- [NetworkAclLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request creates a network ACL in the specified VPC. The response includes a default entry for egress, and another for ingress, each with a very high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.



```
https://ec2.amazonaws.com/?Action=CreateNetworkAcl
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

## Example Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <networkAcl>
    <networkAclId>acl-5fb85d36</networkAclId>
    <vpcId>vpc-11ad4878</vpcId>
    <default>>false</default>
    <entrySet>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>>true</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
    </entrySet>
    <associationSet/>
    <tagSet/>
  </networkAcl>
</CreateNetworkAclResponse>
```

## Related Actions

- [DeleteNetworkAcl](#) (p. 145)
- [DescribeNetworkAcls](#) (p. 245)
- [ReplaceNetworkAclAssociation](#) (p. 429)

# CreateNetworkAclEntry

## Description

Creates an entry (a rule) in a network ACL with the specified rule number. Each network ACL has a set of numbered ingress rules and a separate set of numbered egress rules. When determining whether a packet should be allowed in or out of a subnet associated with the ACL, we process the entries in the ACL according to the rule numbers, in ascending order. Each network ACL has a set of ingress rules and a separate set of egress rules.

### Tip

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, ...), and not number them one right after the other (for example, 101, 102, 103, ...). This makes it easier to add a rule between existing ones without having to renumber the rules.

After you add an entry, you can't modify it; you must either replace it, or create an entry and delete the old one.

For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkAclId*

The ID of the ACL.

Type: String

Default: None

Required: Yes

### *RuleNumber*

The rule number for the entry (for example, 100). ACL entries are processed in ascending order by rule number.

Type: Integer

Default: None

Constraints: Positive integer from 1 to 32766

Required: Yes

### *Protocol*

The IP protocol to which the rule applies. You can use -1 to mean all protocols.

Type: Integer

Valid values: -1 or a protocol number (see [Protocol Numbers](#)).

Required: Yes

### *RuleAction*

Allows or denies traffic that matches the rule.

Type: String

Default: None

Valid values: allow | deny

Required: Yes

### *Egress*

Indicates whether this rule applies to egress traffic from the subnet (`true`) or ingress traffic to the subnet (`false`).

Type: Boolean

Default: `false`

Required: No

*CidrBlock*

The CIDR range to allow or deny, in CIDR notation (for example, 172.16.0.0/24).

Type: String

Default: None

Required: Yes

*Icmp.Code*

For the ICMP protocol, the ICMP code. You can use -1 to specify all ICMP codes for the given ICMP type.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

*Icmp.Type*

For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

*PortRange.From*

The first port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

*PortRange.To*

The last port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

## Response Elements

The following elements are returned in a `CreateNetworkAclEntryResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [NetworkAclEntryAlreadyExists \(p. 619\)](#)
- [NetworkAclEntryLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request creates an entry with rule number 110 in the network ACL with the ID `acl-2cb85d45`. The rule allows ingress traffic from anywhere (`0.0.0.0/0`) on UDP port 53 into any associated subnet.

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol=udp
&RuleAction=allow
&Egress=false
&CidrBlock=0.0.0.0/0
&PortRange.From=53
&PortRange.To=53
&AUTHPARAMS
```

### Example Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</CreateNetworkAclEntryResponse>
```

## Related Actions

- [DeleteNetworkAclEntry \(p. 147\)](#)
- [ReplaceNetworkAclEntry \(p. 431\)](#)
- [DescribeNetworkAcls \(p. 245\)](#)

# CreateNetworkInterface

## Description

Creates a network interface in the specified subnet.

For more information about network interfaces, see [Elastic Network Interfaces](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SubnetId*

The ID of the subnet to associate with the network interface.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress*

The primary private IP address of the network interface. If you don't specify an IP address, Amazon EC2 selects one for you from the subnet range.

Type: String

Default: None

Required: No

### *PrivateIpAddresses.n.PrivateIpAddress*

The private IP address of the specified network interface. You can use this parameter multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary.

You can't specify this parameter when `PrivateIpAddresses.n.Primary` is `true` if you specify `PrivateIpAddress`.

Type: String

Default: None

Required: No

### *PrivateIpAddresses.n.Primary*

Indicates whether the private IP address is the primary private IP address.

Only one IP address can be designated as primary. You can't specify this parameter as `true` and specify `PrivateIpAddresses.n.PrivateIpAddress` if you also specify `PrivateIpAddress`.

Type: Boolean

Default: `false`

Required: No

### *SecondaryPrivateIpAddressCount*

The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, Amazon EC2 selects these IP addresses within the subnet range.

The number of IP addresses you can assign to a network interface varies by instance type. For more information, see [Private IP Addresses Per ENI Per Instance Type](#) in the *Amazon EC2 User Guide for Linux Instances*.

For a single network interface, you can't specify this option and specify more than one private IP address using `PrivateIpAddress.n`.

Type: Integer

Default: None

Required: No

*Description*

A description for the network interface.

Type: String

Default: None

Required: No

*SecurityGroupId.n*

The list of security group IDs for the network interface.

Type: [SecurityGroupIdSetItemType](#) (p. 561)

Default: None

Required: No

## Response Elements

The following elements are returned in a `CreateNetworkInterfaceResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`networkInterface`

The network interface that was created.

Type: [NetworkInterfaceType](#) (p. 543)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidGroup.NotFound](#) (p. 619)
- [InvalidParameterValue](#) (p. 619)
- [InvalidSecurityGroupId.NotFound](#) (p. 619)
- [InvalidSubnetID.NotFound](#) (p. 619)

## Examples

### Example Request

This example request creates a network interface in the specified subnet with a primary IP address that is automatically selected by Amazon EC2.

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>8dbe591e-5a22-48cb-b948-dd0aadd55adf</requestId>
  <networkInterface>
    <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>available</status>
    <macAddress>02:74:b0:72:79:61</macAddress>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.157</privateIpAddress>
        <primary>true</primary>
      </item>
    </privateIpAddressesSet>
  </networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example Request

This example request creates a network interface in the specified subnet with a primary IP address of 10.0.2.140 and four secondary private IP addresses that are automatically selected by Amazon EC2.

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.0.Primary=true
&PrivateIpAddresses.0.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>bd78c839-0895-4fac-a17f-98b559b6b630</requestId>
  <networkInterface>
    <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
```

```
<availabilityZone>ap-southeast-1b</availabilityZone>
<description/>
<ownerId>251839141158</ownerId>
<requesterManaged>>false</requesterManaged>
<status>pending</status>
<macAddress>02:74:b0:70:7f:1a</macAddress>
<privateIpAddress>10.0.2.140</privateIpAddress>
<sourceDestCheck>>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<tagSet/>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.2.140</privateIpAddress>
    <primary>>true</primary>
  </item>
  <item>
    <privateIpAddress>10.0.2.172</privateIpAddress>
    <primary>>false</primary>
  </item>
  <item>
    <privateIpAddress>10.0.2.169</privateIpAddress>
    <primary>>false</primary>
  </item>
  <item>
    <privateIpAddress>10.0.2.170</privateIpAddress>
    <primary>>false</primary>
  </item>
  <item>
    <privateIpAddress>10.0.2.171</privateIpAddress>
    <primary>>false</primary>
  </item>
</privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example Request

This example request creates a network interface with a primary private IP address of 10.0.2.130 and two secondary IP addresses of 10.0.2.132 and 10.0.2.133.

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.0.Primary=true
&PrivateIpAddresses.0.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.1.Primary=false
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```



## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>a9565f4c-f928-4113-859b-905886d11658</requestId>
  <networkInterface>
    <networkInterfaceId>eni-41c47828</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:78:bf:ab</macAddress>
    <privateIpAddress>10.0.2.130</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-188d9f74</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.130</privateIpAddress>
        <primary>true</primary>
      </item>
      <item>
        <privateIpAddress>10.0.2.133</privateIpAddress>
        <primary>false</primary>
      </item>
      <item>
        <privateIpAddress>10.0.2.132</privateIpAddress>
        <primary>false</primary>
      </item>
    </privateIpAddressesSet>
  </networkInterface>
</CreateNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 28)
- [DetachNetworkInterface](#) (p. 360)
- [DeleteNetworkInterface](#) (p. 149)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ResetNetworkInterfaceAttribute](#) (p. 454)

# CreatePlacementGroup

## Description

Creates a placement group that you launch cluster instances into. You must give the group a name that's unique within the scope of your account.

For more information about placement groups and cluster instances, see [Cluster Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### GroupName

A name for the placement group.

Type: String

Default: None

Constraints: Up to 255 ASCII characters

Required: Yes

### Strategy

The placement strategy.

Type: String

Valid values: `cluster`

Required: Yes

## Response Elements

The following elements are returned in a `CreatePlacementGroupResponse` element.

### requestId

The ID of the request.

Type: `xsd:string`

### return

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidPlacementGroup.Duplicate \(p. 619\)](#)

## Examples

### Example Request

This example request creates a placement group named `XYZ-cluster`.

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
&GroupName=XYZ-cluster
&Strategy=cluster
&AUTHPARAMS
```

### Example Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</CreatePlacementGroupResponse>
```

## Related Actions

- [DeletePlacementGroup](#) (p. 151)
- [DescribePlacementGroups](#) (p. 259)

# CreateReservedInstancesListing

## Description

Creates a listing for Amazon EC2 Reserved Instances to be sold in the Reserved Instance Marketplace. You can submit one Reserved Instance listing at a time.

The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

To sell your Reserved Instances, you must first register as a Seller in the Reserved Instance Marketplace. After completing the registration process, you can create a Reserved Instance Marketplace listing of some or all of your Reserved Instances, and specify the upfront price to receive for them. Your Reserved Instance listings then become available for purchase.

For more information about Reserved Instance Marketplace, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *reservedInstancesId*

The ID of the active Reserved Instance.

Type: String

Default: None

Required: Yes

### *instanceCount*

The number of instances that are a part of a Reserved Instance account to be listed in the Reserved Instance Marketplace. This number should be less than or equal to the instance count associated with the Reserved Instance ID specified in this call.

Type: Integer

Default: None

Required: Yes

### *priceSchedules*

A list specifying the price of the Reserved Instance for each month remaining in the Reserved Instance term.

Type: [PriceScheduleRequestSetItemType \(p. 547\)](#)

Required: Yes

### *clientToken*

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see [Ensuring Idempotency](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateReservedInstancesListingResponseType` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`reservedInstancesListingSet`

The Reserved Instances listing that was created. The listing information is wrapped in an `item` element.

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 500)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInput](#) (p. 619)

## Examples

### Example Request

This example request creates a Reserved Instance Marketplace listing from the existing Reserved Instance `e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE`, which has 11 months remaining in its term. In this example, we set the upfront price at \$2.50, and the price drops over the course of the 11-month term if the instance is still not sold.

Term (months)	Upfront Price
11, 10, 9	\$2.50
8, 7, 6	\$2.00
5, 4	\$1.50
3, 2	\$0.70
1	\$0.10

```
https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&InstanceCount=1
&PriceSchedules.0.Price=2.5
&PriceSchedules.0.Term=11
&PriceSchedules.1.Price=2.0
&PriceSchedules.1.Term=8
&PriceSchedules.2.Price=1.5
&PriceSchedules.2.Term=5
&PriceSchedules.3.Price=0.7
&PriceSchedules.3.Term=3
&PriceSchedules.4.Price=0.1
&PriceSchedules.4.Term=1
&ReservedInstancesId=e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE
&AUTHPARAMS
```

## Example Response

```
<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
9e57dEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <createDate>2012-07-17T17:11:09.449Z</createDate>
      <updateDate>2012-07-17T17:11:09.468Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>1</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>11</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>true</active>
        </item>
        <item>
          <term>10</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>9</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>8</term>
          <price>2.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

```
<item>
  <term>7</term>
  <price>2.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>6</term>
  <price>2.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>5</term>
  <price>1.5</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>4</term>
  <price>1.5</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>3</term>
  <price>0.7</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>2</term>
  <price>0.7</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>1</term>
  <price>0.1</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
</priceSchedules>
<tagSet/>
<clientToken>myIdempToken1</clientToken>
</item>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

## List a Reserved Instance in the Reserved Instance Marketplace

To list a Reserved Instance in the Reserved Instance Marketplace

1. Get a list of your Reserved Instances by calling [DescribeReservedInstances](#) (p. 265).

Note the Reserved Instance ID of the Reserved Instance that you want to list in the Reserved Instance Marketplace.

2. Create a listing for three Reserved Instances from Reserved Instance ID `e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE` and specify the following pricing schedule.

Term (remaining months)	11	10	9	8	7	6	5	4	3	2	1
Price specified for period	2.5			2.0			1.5		0.7		0.1
Price	2.5	2.5	2.5	2.0	2.0	2.0	1.5	1.5	0.7	0.7	0.1

3. To view the details of your Reserved Instance listing, run [DescribeReservedInstancesListings](#) (p. 269).

### Example Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&AUTHPARAMS
```

### Example Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    ...
    <item>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>61.0</fixedPrice>
      <usagePrice>0.034</usagePrice>
      <instanceCount>3</instanceCount>
      <productDescription>Linux/UNIX</productDescription>
      <state>active</state>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

### Example Request

```
https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&ReservedInstancesId=e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE
&InstanceCount=3
```



```
&PriceSchedules.0.Price=2.5&PriceSchedules.0.Term=11
&PriceSchedules.1.Price=2.0&PriceSchedules.1.Term=8
&PriceSchedules.2.Price=1.5&PriceSchedules.2.Term=5
&PriceSchedules.3.Price=0.7&PriceSchedules.3.Term=3
&PriceSchedules.4.Price=0.1&PriceSchedules.4.Term=1
&AUTHPARAMS
```

## Example Response

```
<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dEXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
9e57dEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <createDate>2012-08-30T17:11:09.449Z</createDate>
      <updateDate>2012-08-30T17:11:09.468Z</updateDate>
      <status>active</status>
      <statusMessage>active</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>3</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>11</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>true</active>
        </item>
        <item>
          <term>10</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>9</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

```
        <active>false</active>
    </item>
    <item>
        <term>8</term>
        <price>2.00</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>7</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>6</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>5</term>
        <price>1.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>4</term>
        <price>1.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>3</term>
        <price>0.7</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>2</term>
        <price>0.7</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>1</term>
        <price>0.1</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
</priceSchedules>
<tagSet/>
<clientToken>listRI1</clientToken>
</item>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

## Example Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings
&AUTHPARAMS
```

## Example Response

```
<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942cEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <createDate>2012-07-06T19:35:29.000Z</createDate>
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>20</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>8</term>
          <price>480.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>7</term>
          <price>420.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>6</term>
          <price>360.0</price>
          <currencyCode>USD</currencyCode>
          <active>active</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

```
<item>
  <term>5</term>
  <price>300.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>4</term>
  <price>240.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>3</term>
  <price>180.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>2</term>
  <price>120.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
<item>
  <term>1</term>
  <price>60.0</price>
  <currencyCode>USD</currencyCode>
  <active>>false</active>
</item>
</reservedInstancesListingsSet>
<tagSet/>
<clientToken>myclienttoken1</clientToken>
</item>
</DescribeReservedInstancesListingsResponse>
```

## Related Actions

- [CancelReservedInstancesListing](#) (p. 51)
- [DescribeReservedInstancesListings](#) (p. 269)

# CreateRoute

## Description

Creates a route in a route table within a VPC. The route's target can be an Internet gateway or virtual private gateway attached to the VPC, a VPC peering connection, or a NAT instance in the VPC.

When determining how to route traffic, we use the route with the most specific match. For example, let's say the traffic is destined for 192.0.2.3, and the route table includes the following two routes:

- 192.0.2.0/24 (goes to some target A)
- 192.0.2.0/28 (goes to some target B)

Both routes apply to the traffic destined for 192.0.2.3. However, the second route in the list covers a smaller number of IP addresses and is therefore more specific, so we use that route to determine where to target the traffic.

For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId*

The ID of the route table for the route.

Type: String

Default: None

Required: Yes

### *DestinationCidrBlock*

The CIDR address block used for the destination match. Routing decisions are based on the most specific match.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of an Internet gateway or virtual private gateway attached to your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must specify one of the following: *GatewayId*, *InstanceId*, *VpcPeeringConnectionId*, or *NetworkInterfaceId*.

### *InstanceId*

The ID of a NAT instance in your VPC. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Default: None

Required: Conditional

Condition: You must specify one of the following: *GatewayId*, *InstanceId*, *VpcPeeringConnectionId*, or *NetworkInterfaceId*.

### *NetworkInterfaceId*

The ID of a network interface.

Type: String

Default: None

Required: Conditional

Condition: You must specify one of the following: `GatewayId`, `InstanceId`, `VpcPeeringConnectionId`, or `NetworkInterfaceId`.

*VpcPeeringConnectionId*

The ID of a VPC peering connection.

Type: String

Default: None

Required: Conditional

Condition: You must specify one of the following: `GatewayId`, `InstanceId`, `VpcPeeringConnectionId`, or `NetworkInterfaceId`.

## Response Elements

The following elements are returned in a `CreateRouteResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGatewayID.NotFound \(p. 619\)](#)
- [InvalidInstanceID.Malformed \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)
- [InvalidNetworkInterfaceID.Malformed \(p. 619\)](#)
- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [InvalidRouteTableID.Malformed \(p. 619\)](#)
- [InvalidRouteTableID.NotFound \(p. 619\)](#)
- [InvalidVpcPeeringConnectionID.Malformed \(p. 619\)](#)
- [InvalidVpcPeeringConnectionID.NotFound \(p. 619\)](#)
- [RouteAlreadyExists \(p. 619\)](#)

## Examples

### Example Request

This example request creates a route in the route table with the ID `rtb-e4ad488d`. The route matches all traffic (`0.0.0.0/0`) and routes it to the Internet gateway with the ID `igw-eaad4883`.

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=0.0.0.0/0
&GatewayId=igw-eaad4883
&AUTHPARAMS
```

## Example Request

This example request creates a route in the route table with the ID `rtb-g8ff4ea2`. The route sends all traffic (`0.0.0.0/0`) to the NAT instance with the ID `i-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=0.0.0.0/0
&InstanceId=i-1a2b3c4d
&AUTHPARAMS
```

## Example Request

This example command creates a route in route table `rtb-g8ff4ea2`. The route matches traffic for the CIDR block `10.0.0.0/16` and routes it to VPC peering connection, `pcx-111aaa22`. This route enables traffic to be directed to the peer VPC in the VPC peering connection.

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=10.0.0.0/16
&VpcPeeringConnectionId=pcx-111aaa22
&AUTHPARAMS
```

## Example Response

```
<CreateRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</CreateRouteResponse>
```

## Related Actions

- [DeleteRoute](#) (p. 153)
- [ReplaceRoute](#) (p. 434)
- [DescribeRouteTables](#) (p. 286)

# CreateRouteTable

## Description

Creates a route table for the specified VPC. After you create a route table, you can add routes and associate the table with a subnet.

For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateRouteTableResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`routeTable`

Information about the route table.

Type: [RouteTableType \(p. 556\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpcID.NotFound \(p. 619\)](#)
- [RouteTableLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request creates a route table for the VPC with the ID `vpc-11ad4878`.

```
https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-11ad4878
&AUTHPARAMS
```



## Example Response

By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
    <routeTableId>rtb-f9ad4890</routeTableId>
    <vpcId>vpc-11ad4878</vpcId>
    <routeSet>
      <item>
        <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
        <gatewayId>local</gatewayId>
        <state>active</state>
      </item>
    </routeSet>
    <associationSet/>
    <tagSet/>
  </routeTable>
</CreateRouteTableResponse>
```

## Related Actions

- [AssociateRouteTable](#) (p. 24)
- [DisassociateRouteTable](#) (p. 371)
- [DescribeRouteTables](#) (p. 286)
- [DeleteRouteTable](#) (p. 155)
- [ReplaceRouteTableAssociation](#) (p. 437)
- [CreateRoute](#) (p. 102)

# CreateSecurityGroup

## Description

Creates a security group.

### Important

EC2-Classic: You can have up to 500 security groups.

EC2-VPC: You can create up to 100 security groups per VPC.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see [Amazon EC2 Security Groups](#) in the *Amazon EC2 User Guide for Linux Instances* and [Security Groups for Your VPC](#) in the *Amazon VPC User Guide*.

When you create a security group, you specify a friendly name of your choice. You can have a security group for use in EC2-Classic with the same name as a security group for use in a VPC. However, you can't have two security groups for use in EC2-Classic with the same name or two security groups for use in a VPC with the same name.

You have a default security group for use in EC2-Classic and a default security group for use in your VPC. If you don't specify a security group when you launch an instance, the instance is launched into the appropriate default security group. A default security group includes a default rule that grants instances unrestricted network access to each other.

You can add or remove rules from your security groups using `AuthorizeSecurityGroupIngress`, `AuthorizeSecurityGroupEgress`, `RevokeSecurityGroupIngress`, and `RevokeSecurityGroupEgress`.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupName*

The name of the security group.

Type: String

Default: None

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and `._-:/()#,@[]+=&:{}!$*`

Required: Yes

### *GroupDescription*

A description for the security group. This is informational only.

Type: String

Default: None

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and `._-:/()#,@[]+=&:{}!$*`

Required: Yes

### *VpcId*

[EC2-VPC] The ID of the VPC.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC.

## Response Elements

The following elements are returned in a `CreateSecurityGroupResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

`groupId`

The ID of the security group.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGroup.Duplicate \(p. 619\)](#)
- [InvalidGroup.Reserved \(p. 619\)](#)
- [InvalidVpcID.NotFound \(p. 619\)](#)
- [SecurityGroupLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request creates a security group named `webserv` for EC2-Classic.

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=webserv
&GroupDescription=Web Servers
&AUTHPARAMS
```

### Example Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

## Example Request

This example request creates a security group named `WebServerSG` for the specified VPC.

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=WebServerSG
&GroupDescription=Web Servers
&VpcId=vpc-3325caf2
&AUTHPARAMS
```

## Example Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-0a42d66a</groupId>
</CreateSecurityGroupResponse>
```

## Related Actions

- [RunInstances](#) (p. 464)
- [DescribeSecurityGroups](#) (p. 291)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [RevokeSecurityGroupIngress](#) (p. 461)
- [DeleteSecurityGroup](#) (p. 157)

# CreateSnapshot

## Description

Creates a snapshot of an Amazon EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of instance store volumes, and to save data before shutting down an instance.

When a snapshot is created from a volume with an AWS Marketplace product code, the product code is propagated to the snapshot.

You can take a snapshot of an attached volume that is in use. However, snapshots only capture data that has been written to your Amazon EBS volume at the time the snapshot command is issued. This might exclude any data that has been cached by any applications or the operating system. If you can pause any file writes to the volume long enough to take a snapshot, your snapshot should be complete. However, if you can't pause all file writes to the volume, you should unmount the volume from within the instance, issue the snapshot command, and then remount the volume to ensure a consistent and complete snapshot. You can remount and use your volume while the snapshot status is `pending`.

To create a snapshot for Amazon EBS volumes that serve as root devices, you should stop the instance before taking the snapshot.

Snapshots that are taken from encrypted volumes are automatically encrypted. Volumes that are created from encrypted snapshots are also automatically encrypted. Your encrypted volumes and any associated snapshots always remain protected. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

For more information, see [Amazon Elastic Block Store](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the Amazon EBS volume.

Type: String

Default: None

Required: Yes

### *Description*

A description for the snapshot.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

The following elements are returned in a `CreateSnapshotResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

<code>snapshotId</code>	The ID of the snapshot. Type: <code>xsd:string</code>
<code>volumeId</code>	The ID of the volume. Type: <code>xsd:string</code>
<code>status</code>	The snapshot state. Type: <code>xsd:string</code> Valid values: <code>pending</code>   <code>completed</code>   <code>error</code>
<code>startTime</code>	The time stamp when the snapshot was initiated. Type: <code>xsd:dateTime</code>
<code>progress</code>	The progress of the snapshot, as a percentage. Type: <code>xsd:string</code>
<code>ownerId</code>	The AWS account ID of the Amazon EBS snapshot owner. Type: <code>xsd:string</code>
<code>volumeSize</code>	The size of the volume, in GiB. Type: <code>xsd:string</code>
<code>description</code>	The description for the snapshot. Type: <code>xsd:string</code>
<code>encrypted</code>	Indicates whether the snapshot is encrypted. Type: <code>xsd:boolean</code>

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [ConcurrentSnapshotLimitExceeded \(p. 619\)](#)
- [IncorrectState \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [InvalidState \(p. 619\)](#)
- [InvalidVolumeID.Malformed \(p. 619\)](#)
- [InvalidVolume.NotFound \(p. 619\)](#)
- [MissingParameter \(p. 619\)](#)
- [SnapshotLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example creates a snapshot of the volume with the ID `vol-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-1a2b3c4d
&Description=Daily+Backup
&AUTHPARAMS
```

### Example Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <status>pending</status>
  <startTime>YYYY-MM-DDTHH:MM:SS.000Z</startTime>
  <progress>60%</progress>
  <ownerId>111122223333</ownerId>
  <volumeSize>30</volumeSize>
  <encrypted>>true</encrypted>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
```

### Related Actions

- [DeleteSnapshot](#) (p. 159)
- [DescribeSnapshots](#) (p. 299)

# CreateSpotDatafeedSubscription

## Description

Creates the datafeed for Spot Instances, enabling you to view Spot Instance usage logs. You can create one data feed per account. For more information, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *Bucket*

The Amazon S3 bucket in which to store the Spot Instance datafeed.

Type: String

Default: None

Constraints: Must be a valid bucket associated with your account.

Required: Yes

### *Prefix*

A prefix for the datafeed file names.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `CreateSpotDatafeedSubscriptionResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `spotDatafeedSubscription`

The Spot Instance datafeed subscription.

Type: [SpotDatafeedSubscriptionType \(p. 562\)](#)

## Examples

### Example Request

This example request creates the data feed for the account.

```
https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=myawsbucket
&AUTHPARAMS
```



## Example Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [DeleteSpotDatafeedSubscription](#) (p. 161)
- [DescribeSpotDatafeedSubscription](#) (p. 304)

# CreateSubnet

## Description

Creates a subnet in an existing VPC.

When you create each subnet, you provide the VPC ID and the CIDR block you want for the subnet. After you create a subnet, you can't change its CIDR block. The subnet's CIDR block can be the same as the VPC's CIDR block (assuming you want only a single subnet in the VPC), or a subset of the VPC's CIDR block. If you create more than one subnet in a VPC, the subnets' CIDR blocks must not overlap. The smallest subnet (and VPC) you can create uses a /28 netmask (16 IP addresses), and the largest uses a /16 netmask (65,536 IP addresses).

### Important

AWS reserves both the first four and the last IP address in each subnet's CIDR block. They're not available for use.

If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle.

For more information about subnets, see [Your VPC and Subnets](#) in the *Amazon VPC User Guide*.

If you launch an instance in a VPC using an Amazon EBS-backed AMI, the IP address doesn't change if you stop and restart the instance (unlike a similar instance launched outside a VPC, which gets a new IP address when restarted). It's therefore possible to have a subnet with no running instances (they're all stopped), but no remaining IP addresses available. For more information about Amazon EBS-backed AMIs, see [AMI Basics](#) in the *Amazon EC2 User Guide for Linux Instances*.

For more information about subnets, see [Your VPC and Subnets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

### *CidrBlock*

The CIDR block for the subnet. For example, 10.0.0.0/24.

Type: String

Default: None

Required: Yes

### *AvailabilityZone*

The Availability Zone for the subnet.

Type: String

Default: Amazon EC2 selects one for you (recommended).

Required: No

## Response Elements

The following elements are returned in a `CreateSubnetResponse` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`subnet`  
Information about the subnet.  
Type: [SubnetType](#) (p. 567)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)
- [InvalidSubnet.Conflict](#) (p. 619)
- [InvalidVpcID.NotFound](#) (p. 619)
- [SubnetLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example request creates a subnet with CIDR block `10.0.1.0/24` in the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-1a2b3c4d
&CidrBlock=10.0.1.0/24
&AUTHPARAMS
```

### Example Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
    <subnetId>subnet-9d4a7b6c</subnetId>
    <state>pending</state>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlock>10.0.1.0/24</cidrBlock>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
```

## Related Actions

- [DescribeSubnets](#) (p. 318)
- [DeleteSubnet](#) (p. 162)

# CreateTags

## Description

Adds or overwrites one or more tags for the specified Amazon EC2 resource or resources. Each resource can have a maximum of 10 tags. Each tag consists of a key and optional value. Tag keys must be unique per resource.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ResourceId.n*

The IDs of one or more resources to tag. For example, `ami-1a2b3c4d`.

Type: String

Default: None

Required: Yes

### *Tag.n.Key*

The key for a tag.

Type: String

Default: None

Constraints: Tag keys are case-sensitive and accept a maximum of 127 Unicode characters. May not begin with `aws:`

Required: Yes

### *Tag.n.Value*

The value for a tag. If you don't want the tag to have a value, specify the parameter with no value, and we set the value to an empty string.

Type: String

Default: None

Constraints: Tag values are case-sensitive and accept a maximum of 255 Unicode characters.

Required: Yes

## Response Elements

The following elements are returned in a `CreateTagsResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [ConcurrentTagAccess \(p. 619\)](#)
- [InvalidAMIID.NotFound \(p. 619\)](#)
- [InvalidGroup.NotFound \(p. 619\)](#)
- [InvalidID \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)
- [InvalidInternetGatewayID.NotFound \(p. 619\)](#)
- [InvalidNetworkACLID.NotFound \(p. 619\)](#)
- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [InvalidSnapshot.NotFound \(p. 619\)](#)
- [InvalidSpotInstanceRequestID.Malformed \(p. 619\)](#)
- [InvalidSpotInstanceRequestID.NotFound \(p. 619\)](#)
- [InvalidSubnetID.NotFound \(p. 619\)](#)
- [InvalidVolume.NotFound \(p. 619\)](#)
- [InvalidVpcID.NotFound \(p. 619\)](#)
- [MissingParameter \(p. 619\)](#)
- [TagLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request adds (or overwrites) two tags for an AMI and an instance. One of the tags is just a key (`webserver`), with no value (we set the value to an empty string). The other tag consists of a key (`stack`) and value (`Production`).

```
https://ec2.amazonaws.com/?Action=CreateTags
&ResourceId.1=ami-1a2b3c4d
&ResourceId.2=i-7f4d3a2b
&Tag.1.Key=webserver
&Tag.1.Value=
&Tag.2.Key=stack
&Tag.2.Value=Production
&AUTHPARAMS
```

### Example Response

```
<CreateTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>
```

## Related Actions

- [DescribeTags](#) (p. 322)
- [DeleteTags](#) (p. 164)

# CreateVolume

## Description

Creates an Amazon EBS volume that can be attached to an instance in the same Availability Zone. The volume is created in the regional endpoint that you send the HTTP request to. For more information, see [Regions and Endpoints](#).

You can create a new empty volume or restore a volume from an Amazon EBS snapshot. Any AWS Marketplace product codes from the snapshot are propagated to the volume.

You can create encrypted volumes with the `Encrypted` parameter. Encrypted volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are also automatically encrypted. There is no way to create an encrypted volume from an unencrypted snapshot or vice versa. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *Size*

The size of the volume, in GiBs.

Type: String

Valid values: 1-1024

Constraints: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Required: No

### *SnapshotId*

The snapshot from which to create the volume.

Type: String

Default: None

Condition: Required if you are creating a volume from a snapshot.

Required: Conditional

### *AvailabilityZone*

The Availability Zone in which to create the volume. Use [DescribeAvailabilityZones \(p. 187\)](#) to list the Availability Zones that are currently available to you.

Type: String

Default: None

Required: Yes

### *VolumeType*

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Required: No



#### *Iops*

Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume.

Type: Integer

Valid values: Range is 100 to 4,000.

Default: None

Required: Conditional

Condition: Required when the volume type is `io1`; not used with `standard` or `gp2` volumes.

#### *Encrypted*

Specifies whether the volume should be encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are automatically encrypted. There is no way to create an encrypted volume from an unencrypted snapshot or vice versa. If your AMI uses encrypted volumes, you can only launch it on supported instance types. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: Boolean

Default: false

Required: No

## Response Elements

The following elements are returned in a `CreateVolumeResponse` element.

#### `requestId`

The ID of the request.

Type: `xsd:string`

#### `volumeId`

The ID of the volume.

Type: `xsd:string`

#### `size`

The size of the volume, in GiBs.

Type: `xsd:string`

#### `snapshotId`

The snapshot from which the volume was created, if applicable.

Type: `xsd:string`

#### `availabilityZone`

The Availability Zone for the volume.

Type: `xsd:string`

#### `status`

The volume state.

Type: `xsd:string`

Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

#### `createTime`

The time stamp when volume creation was initiated.

Type: `xsd:dateTime`

#### `volumeType`

The volume type.

Type: `xsd:string`

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

`iops`

The number of I/O operations per second (IOPS) that the volume supports. For Provisioned IOPS (SSD) volumes, this represents the number of IOPS that have been provisioned for the volume. For General Purpose (SSD) volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information on General Purpose (SSD) baseline performance, I/O credits, and bursting, see [Amazon EBS Volume Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: xsd:int

Valid values: Range is 100 to 4,000 for Provisioned IOPS (SSD) volumes and 3 to 3,072 for General Purpose (SSD) volumes.

`encrypted`

Indicates whether the volume will be encrypted.

Type: xsd:boolean

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectState \(p. 619\)](#)
- [InvalidSnapshot.NotFound \(p. 619\)](#)
- [InvalidZone.NotFound \(p. 619\)](#)
- [MaxIOPSLimitExceeded \(p. 619\)](#)
- [UnknownVolumeType \(p. 619\)](#)
- [VolumeLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request creates an 80 GiB encrypted volume in the Availability Zone `us-east-1a`.

```
https://ec2.amazonaws.com/?Action=CreateVolume
&Size=80
&AvailabilityZone=us-east-1a
&Encrypted=1
&AUTHPARAMS
```

### Example Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <size>80</size>
  <snapshotId/>
  <availabilityZone>us-east-1a</availabilityZone>
  <status>creating</status>
  <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
  <volumeType>standard</volumeType>
```

```
<encrypted>true</encrypted>  
</CreateVolumeResponse>
```

## Example Request

This example request creates a new Provisioned IOPS (SSD) volume with 1000 provisioned IOPS from a snapshot in the Availability Zone `us-east-1a`.

```
https://ec2.amazonaws.com/?Action=CreateVolume  
&AvailabilityZone=us-east-1a  
&SnapshotId=snap-example  
&VolumeType=io1  
&Iops=1000  
&AUTHPARAMS
```

## Example Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <volumeId>vol-1a2b3c4d</volumeId>  
  <size>500</size>  
  <snapshotId>snap-example</>  
  <availabilityZone>us-east-1a</availabilityZone>  
  <status>creating</status>  
  <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>  
  <volumeType>io1</volumeType>  
</CreateVolumeResponse>
```

## Related Actions

- [DeleteVolume](#) (p. 167)
- [DescribeVolumes](#) (p. 330)
- [AttachVolume](#) (p. 30)
- [DetachVolume](#) (p. 362)
- [DescribeAvailabilityZones](#) (p. 187)

# CreateVpc

## Description

Creates a VPC with the specified CIDR block.

The smallest VPC you can create uses a /28 netmask (16 IP addresses), and the largest uses a /16 netmask (65,536 IP addresses). To help you decide how big to make your VPC, see [Your VPC and Subnets](#) in the *Amazon VPC User Guide*.

By default, each instance you launch in the VPC has the default DHCP options, which includes only a default DNS server that we provide (AmazonProvidedDNS). For more information about DHCP options, see [DHCP Options Sets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *CidrBlock*

The CIDR block for the VPC (for example, 10.0.0.0/16).

Type: String

Default: None

Required: Yes

### *instanceTenancy*

The supported tenancy options for instances launched into the VPC. A value of `default` means that instances can be launched with any tenancy; a value of `dedicated` means all instances launched into the VPC are launched as dedicated tenancy instances regardless of the tenancy assigned to the instance at launch. Dedicated tenancy instances runs on single-tenant hardware.

Type: String

Valid values: `default` | `dedicated`

Default: `default`

Required: No

## Response Elements

The following elements are returned in a `CreateVpcResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `vpc`

Information about the VPC.

Type: [VpcType \(p. 573\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpcRange](#) (p. 619)
- [VpcLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example request creates a VPC with the CIDR block 10.0.0.0/16.

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AUTHPARAMS
```

### Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpc>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>default</instanceTenancy>
    <tagSet/>
  </vpc>
</CreateVpcResponse>
```

### Example Request

This example request creates a VPC with the dedicated tenancy option.

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&InstanceTenancy=dedicated
&AUTHPARAMS
```

### Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>a9e49797-a74f-4f68-b302-a134a51fd054</requestId>
  <vpc>
    <vpcId>vpc-11a63c78</vpcId>
    <state>pending</state>
    <cidrBlock>10.32.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>dedicated</instanceTenancy>
  </vpc>
</CreateVpcResponse>
```

## Related Actions

- [DescribeVpcs](#) (p. 346)
- [DeleteVpc](#) (p. 169)
- [CreateDhcpOptions](#) (p. 66)
- [AssociateDhcpOptions](#) (p. 22)

# CreateVpcPeeringConnection

## Description

Requests a VPC peering connection between two VPCs: a requester VPC that you own and a peer VPC with which to create the connection. The peer VPC can belong to another AWS account. The requester VPC and peer VPC cannot have overlapping CIDR blocks.

The owner of the peer VPC must accept the peering request to activate the peering connection. The VPC peering connection request expires after 7 days, after which it cannot be accepted or rejected.

A `CreateVpcPeeringConnection` request between VPCs with overlapping CIDR blocks results in the VPC peering connection having a status of `failed`.

For more information, see [VPC Peering](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *VpcId*

The ID of the requester VPC.

Type: String

Default: None

Required: Yes

### *PeerVpcId*

The ID of the VPC with which you are creating the peering connection.

Type: String

Default: None

Required: Yes

### *PeerOwnerId*

The AWS account ID of the owner of the peer VPC.

Type: String

Default: Your AWS account ID

Required: Conditional

Condition: Required if the peer VPC is not in the same account as the requester VPC.

## Response Elements

The following elements are returned in an `CreateVpcPeeringConnection` element.

`vpcPeeringConnection`

Information about the peering connection.

Type: [VpcPeeringConnectionType](#) (p. 574)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)
- [InvalidVpcId.NotFound](#) (p. 619)
- [MissingParameter](#) (p. 619)
- [OperationNotPermitted](#) (p. 619)
- [OutstandingVpcPeeringConnectionLimitExceeded](#) (p. 619)

## Examples

### Example Request 1

This example requests a peering connection between your VPC (`vpc-1a2b3c4d`), and a VPC (`vpc-a1b2c3d4`) that belongs to AWS account 123456789012.

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-a1b2c3d4
&PeerOwnerId=123456789012
&AUTHPARAMS
```

### Example Response 1

```
<CreateVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcPeeringConnection>
    <vpcPeeringConnectionId>pcx-73a5401a</vpcPeeringConnectionId>
    <requesterVpcInfo>
      <ownerId>777788889999</ownerId>
      <vpcId>vpc-vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/28</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-a1b2c3d4</vpcId>
    </accepterVpcInfo>
    <status>
      <code>initiating-request</code>
      <message>Initiating Request to 123456789012</message>
    </status>
    <expirationTime>2014-02-18T14:37:25.000Z</expirationTime>
  </tagSet/>
```

```
</vpcPeeringConnection>  
</CreateVpcPeeringConnectionResponse>
```

## Example Request 2

This example requests a peering connection between your VPCs `vpc-1a2b3c4d` and `vpc-11122233`.

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection  
&VpcId=vpc-1a2b3c4d  
&PeerVpcId=vpc-11122233  
&AUTHPARAMS
```

## Related Actions

- [DescribeVpcPeeringConnections](#) (p. 342)
- [AcceptVpcPeeringConnection](#) (p. 12)
- [RejectVpcPeeringConnection](#) (p. 425)
- [DeleteVpcPeeringConnection](#) (p. 170)
- [CreateRoute](#) (p. 102)
- [ReplaceRoute](#) (p. 434)



# CreateVpnConnection

## Description

Creates a VPN connection between an existing virtual private gateway and a VPN customer gateway. The only supported connection type is `ipsec.1`.

The response includes information that you need to give to your network administrator to configure your customer gateway. We recommend that you use the command line version of this operation (**ec2-create-vpn-connection**), which lets you get the configuration information formatted in a friendlier way. For information about the command, see [ec2-create-vpn-connection](#) in the *Amazon EC2 Command Line Reference*.

### Important

We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your customer gateway.

If you decide to shut down your VPN connection for any reason and later create a new VPN connection, you must reconfigure your customer gateway with the new information returned from this call.

For more information about VPN connections, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *Type*

The type of VPN connection.

Type: String

Valid values: `ipsec.1`

Default: None

Required: Yes

### *CustomerGatewayId*

The ID of the customer gateway.

Type: String

Default: None

Required: Yes

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *Options.StaticRoutesOnly*

Indicates whether the VPN connection requires static routes. If you are creating a VPN connection for a device that does not support BGP, you must specify `true`.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in an `CreateVpnConnectionResponse` element.

<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpnConnection</code>	Information about the VPN connection. Type: <a href="#">VpnConnectionType</a> (p. 576)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidCustomerGateway.DuplicateIpAddress](#) (p. 619)
- [InvalidCustomerGatewayID.NotFound](#) (p. 619)
- [InvalidOption.Conflict](#) (p. 619)
- [VpnConnectionLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example request creates a VPN connection between the virtual private gateway with the ID `vgw-8db04f81` and the customer gateway with the ID `cgw-b4dc3961`. The response includes configuration information for the customer gateway. Because it's a long set of information, we haven't included the complete response here. To see an example of the configuration information, see the [Amazon VPC Network Administrator Guide](#).

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

### Example Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      ...Customer gateway configuration data in escaped XML format...
    </customerGatewayConfiguration>
    <type>ipsec.1</type>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

```
<customerGatewayId>cgw-b4dc3961</customerGatewayId>
<vpnGatewayId>vgw-8db04f81</vpnGatewayId>
<tagSet/>
</vpnConnection>
</CreateVpnConnectionResponse>
```

## Example Request

This example request creates a VPN connection with the static routes option between the virtual private gateway with the ID `vgw-8db04f81`, and the customer gateway with the ID `cgw-b4dc3961`, for a device that does not support the Border Gateway Protocol (BGP). The response includes configuration information for the VPN connection's customer gateway. Because it's a long set of information, we haven't included the complete response here.

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.StaticRoutesOnly=true
&AUTHPARAMS
```

## Example Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>5cc7891f-1f3b-4fc4-a626-bdea8f63ff5a</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-83ad48ea</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      ...Customer gateway configuration data in escaped XML format...
    </customerGatewayConfiguration>
    <customerGatewayId>cgw-63ae4b0a</customerGatewayId>
    <vpnGatewayId>vgw-4ea04527</vpnGatewayId>
    <options>
      <staticRoutesOnly>true</staticRoutesOnly>
    </options>
    <routes/>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

## Related Actions

- [DescribeVpnConnections](#) (p. 350)
- [DeleteVpnConnection](#) (p. 172)
- [CreateVpc](#) (p. 125)
- [CreateSubnet](#) (p. 115)
- [AttachVpnGateway](#) (p. 33)

# CreateVpnConnectionRoute

## Description

Creates a static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

For more information about VPN connections, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *DestinationCidrBlock*

The CIDR block associated with the local subnet of the customer network.

Type: String

Default: None

Required: Yes

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `CreateVpnConnectionRouteResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpnConnectionID \(p. 619\)](#)

## Examples

### Example Request

This example request creates a static route to the VPN connection for the VPN connection with the ID `vpn-83ad48ea` to the destination CIDR block `11.12.0.0/16`. Note that when using the Query API the `/` is denoted as `%2F`.

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

### Example Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```

## Related Actions

- [DeleteVpnConnectionRoute](#) (p. 174)
- [DeleteVpnConnection](#) (p. 172)
- [DescribeVpnConnections](#) (p. 350)
- [CreateVpc](#) (p. 125)
- [CreateSubnet](#) (p. 115)
- [AttachVpnGateway](#) (p. 33)

# CreateVpnGateway

## Description

Creates a virtual private gateway. A virtual private gateway is the endpoint on the VPC side of your VPN connection. You can create a virtual private gateway before creating the VPC itself.

For more information about virtual private gateways, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### Type

The type of VPN connection this virtual private gateway supports.

Type: String

Valid values: `ipsec.1`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateVpnGatewayResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `vpnGateway`

Information about the virtual private gateway.

Type: [VpnGatewayType \(p. 577\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameterValue \(p. 619\)](#)
- [VpnGatewayLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example request creates a virtual private gateway.

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
&AUTHPARAMS
```

## Example Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGateway>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
    <availabilityZone>us-east-1a</availabilityZone>
    <attachments/>
    <tagSet/>
  </vpnGateway>
</CreateVpnGatewayResponse>
```

## Related Actions

- [DescribeVpnGateways](#) (p. 354)
- [DeleteVpnGateway](#) (p. 176)
- [AttachVpnGateway](#) (p. 33)
- [DetachVpnGateway](#) (p. 365)

# DeleteCustomerGateway

## Description

Deletes the specified customer gateway. You must delete the VPN connection before you can delete the customer gateway.

For more information about customer gateways, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*CustomerGatewayId*

The ID of the customer gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteCustomerGatewayResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidCustomerGatewayId.Malformed \(p. 619\)](#)
- [InvalidCustomerGatewayID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified customer gateway.



```
https://ec2.amazonaws.com/?Action=DeleteCustomerGateway
&CustomerGatewayId=cgw-b4dc3961
&AUTHPARAMS
```

## Example Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteCustomerGatewayResponse>
```

## Related Actions

- [CreateCustomerGateway](#) (p. 64)
- [DescribeCustomerGateways](#) (p. 195)

# DeleteDhcpOptions

## Description

Deletes the specified set of DHCP options. You must disassociate the set of DHCP options before you can delete it. You can disassociate the set of DHCP options by associating either a new set of options or the default set of options with the VPC.

For more information about DHCP options sets, see [DHCP Options Sets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *DhcpOptionsId*

The ID of the DHCP options set.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteDhcpOptionsResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [DependencyViolation \(p. 619\)](#)
- [InvalidDhcpOptionsId.Malformed \(p. 619\)](#)
- [InvalidDhcpOptionsID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified set of DHCP options.

```
https://ec2.amazonaws.com/?Action=DeleteDhcpOptions  
&DhcpOptionsId=dopt-7a8b9c2d  
&AUTHPARAMS
```

## Example Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteDhcpOptionsResponse>
```

## Related Actions

- [AssociateDhcpOptions](#) (p. 22)
- [CreateDhcpOptions](#) (p. 66)
- [DescribeDhcpOptions](#) (p. 199)

# DeleteInternetGateway

## Description

Deletes the specified Internet gateway. You must detach the Internet gateway from the VPC before you can delete it. For more information about your VPC and Internet gateway, see the [Amazon VPC User Guide](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteInternetGatewayResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [DependencyViolation \(p. 619\)](#)
- [InvalidInternetGatewayID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified Internet gateway.

```
https://ec2.amazonaws.com/?Action=DeleteInternetGateway
&InternetGatewayId=igw-eaad4883
&AUTHPARAMS
```

## Example Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 76)
- [AttachInternetGateway](#) (p. 26)
- [DetachInternetGateway](#) (p. 358)
- [DescribeInternetGateways](#) (p. 239)

# DeleteKeyPair

## Description

Deletes the specified key pair, by removing the public key from Amazon EC2. You must own the key pair.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *KeyName*

The name of the key pair.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteKeyPairResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameterCombination \(p. 619\)](#)
- [MissingParameter \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the key pair named `my-key-pair`.

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

## Example Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

## Related Actions

- [CreateKeyPair](#) (p. 78)
- [DescribeKeyPairs](#) (p. 242)
- [ImportKeyPair](#) (p. 385)

# DeleteNetworkAcl

## Description

Deletes the specified network ACL. You can't delete the ACL if it's associated with any subnets. You can't delete the default network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

*NetworkAclId*

The ID of the network ACL.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteNetworkAclResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [DependencyViolation](#) (p. 619)
- [InvalidNetworkAclID.NotFound](#) (p. 619)
- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example request deletes the specified network ACL.

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAcl
&NetworkAclId=ac1-2cb85d45
&AUTHPARAMS
```



## Example Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteNetworkAclResponse>
```

## Related Actions

- [DeleteNetworkAcl](#) (p. 145)
- [DescribeNetworkAcls](#) (p. 245)
- [ReplaceNetworkAclAssociation](#) (p. 429)

# DeleteNetworkAclEntry

## Description

Deletes the specified ingress or egress entry (rule) from the specified network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkAclId*

The ID of the network ACL.

Type: String

Default: None

Required: Yes

### *RuleNumber*

The rule number of the entry to delete.

Type: Integer

Default: None

Required: Yes

### *Egress*

Indicates whether the rule is an egress rule (`true`) or ingress rule (`false`).

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `DeleteNetworkAclEntryResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkAclID.NotFound \(p. 619\)](#)
- [InvalidNetworkAclEntry.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes ingress rule number 100 from the specified network ACL.

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=100
&AUTHPARAMS
```

### Example Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

## Related Actions

- [CreateNetworkAclEntry](#) (p. 83)
- [ReplaceNetworkAclEntry](#) (p. 431)
- [DescribeNetworkAcls](#) (p. 245)

# DeleteNetworkInterface

## Description

Deletes the specified network interface. You must detach the network interface before you can delete it.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteNetworkInterfaceResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [InvalidNetworkInterface.InUse \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)
- [MissingParameter \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified network interface.

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterface
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

## Example Response

```
<DeleteNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 28)
- [DetachNetworkInterface](#) (p. 360)
- [CreateNetworkInterface](#) (p. 86)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ResetNetworkInterfaceAttribute](#) (p. 454)

# DeletePlacementGroup

## Description

Deletes the specified placement group. You must terminate all instances in the placement group before you can delete the placement group. For more information about placement groups and cluster instances, see [Cluster Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupName*

The name of the placement group.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeletePlacementGroupResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidPlacementGroup.InUse \(p. 619\)](#)
- [InvalidPlacementGroup.Unknown \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the placement group named `XYZ-cluster`.

```
https://ec2.amazonaws.com/?Action=DeletePlacementGroup
&GroupName=XYZ-cluster
&AUTHPARAMS
```

## Example Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>>true</return>
</DeletePlacementGroupResponse>
```

## Related Actions

- [CreatePlacementGroup](#) (p. 91)
- [DescribePlacementGroups](#) (p. 259)

# DeleteRoute

## Description

Deletes the specified route from the specified route table. For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *DestinationCidrBlock*

The CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ReplaceRouteResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidRoute.NotFound \(p. 619\)](#)
- [InvalidRouteTableId.Malformed \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the route with destination CIDR `172.16.1.0/24` from the specified route table.



```
https://ec2.amazonaws.com/?Action=DeleteRoute  
&RouteTableId=rtb-e4ad488d  
&DestinationCidrBlock=172.16.1.0/24  
&AUTHPARMS
```

## Example Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteRouteResponse>
```

## Related Actions

- [CreateRoute](#) (p. 102)
- [ReplaceRoute](#) (p. 434)
- [DescribeRouteTables](#) (p. 286)

# DeleteRouteTable

## Description

Deletes the specified route table. You must disassociate the route table from any subnets before you can delete it. You can't delete the main route table. For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteRouteTableResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [DependencyViolation \(p. 619\)](#)
- [InvalidRouteTableID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified route table.

```
https://ec2.amazonaws.com/?Action=DeleteRouteTable
&RouteTableId=rtb-e4ad488d
&AUTHPARAMS
```

## Example Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteRouteTableResponse>
```

## Related Actions

- [AssociateRouteTable](#) (p. 24)
- [DisassociateRouteTable](#) (p. 371)
- [DescribeRouteTables](#) (p. 286)
- [CreateRouteTable](#) (p. 105)
- [ReplaceRouteTableAssociation](#) (p. 437)

# DeleteSecurityGroup

## Description

Deletes a security group.

### Important

If you attempt to delete a security group that is associated with an instance, or is referenced by another security group, the operation fails with `InvalidGroup.InUse` in EC2-Classic or `DependencyViolation` in EC2-VPC.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupName*

[EC2-Classic, default VPC] The name of the security group.

Type: String

Default: None

Required: Conditional

Condition: [EC2-Classic, default VPC] You can specify either `GroupName` or `GroupId`

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Conditional

Condition: Required for a nondefault VPC; for EC2-Classic or a default VPC, you can specify either `GroupName` or `GroupId`.

## Response Elements

The following elements are returned in a `DeleteSecurityGroupResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [CannotDelete \(p. 619\)](#)
- [DependencyViolation \(p. 619\)](#)
- [InvalidGroup.InUse \(p. 619\)](#)
- [InvalidGroup.NotFound \(p. 619\)](#)

- [InvalidGroup.Reserved](#) (p. 619)
- [InvalidParameterCombination](#) (p. 619)
- [MissingParameter](#) (p. 619)

## Examples

### Example Request

This example request deletes the specified security group for EC2-Classic.

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupName=websrv
&AUTHPARAMS
```

### Example Request

This example request deletes the specified security group for EC2-VPC.

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 107)
- [DescribeSecurityGroups](#) (p. 291)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [RevokeSecurityGroupIngress](#) (p. 461)

# DeleteSnapshot

## Description

Deletes the specified snapshot. When you make periodic snapshots of a volume, the snapshots are incremental, and only the blocks on the device that have changed since your last snapshot are saved in the new snapshot. When you delete a snapshot, only the data not needed for any other snapshot is removed. So regardless of which prior snapshots have been deleted, all active snapshots will have access to all the information needed to restore the volume.

### Note

You cannot delete a snapshot of the root device of an EBS volume used by a registered AMI. You must first de-register the AMI before you can delete the snapshot. For more information, see [Deregistering Your AMI](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SnapshotId*

The ID of the Amazon EBS snapshot.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteSnapshotResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameterValue \(p. 619\)](#)
- [InvalidSnapshot.InUse \(p. 619\)](#)
- [InvalidSnapshot.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the snapshot with the ID `snap-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot
&SnapshotId.1=snap-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSnapshotResponse>
```

### Related Actions

- [CreateSnapshot](#) (p. 110)
- [DescribeSnapshots](#) (p. 299)

# DeleteSpotDatafeedSubscription

## Description

Deletes the datafeed for Spot Instances. For more information, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

No parameters.

## Response Elements

The following elements are returned in a `DeleteSpotDatafeedSubscriptionResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the data feed for the account.

```
https://ec2.amazonaws.com/?Action=DeleteSpotDatafeedSubscription
&AUTHPARAMS
```

### Example Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [CreateSpotDatafeedSubscription \(p. 113\)](#)
- [DescribeSpotDatafeedSubscription \(p. 304\)](#)



# DeleteSubnet

## Description

Deletes the specified subnet. You must terminate all running instances in the subnet before you can delete the subnet.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteSubnetResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [DependencyViolation \(p. 619\)](#)
- [InvalidSubnetID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified subnet.

```
https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS
```

## Example Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteSubnetResponse>
```

## Related Actions

- [CreateSubnet](#) (p. 115)
- [DescribeSubnets](#) (p. 318)

# DeleteTags

## Description

Deletes the specified set of tags from the specified set of resources. This call is designed to follow a `DeleteTags` call.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ResourceId.n*

The ID of the resource. For example, `ami-1a2b3c4d`. You can specify more than one resource ID.

Type: String

Default: None

Required: Yes

### *Tag.n.Key*

The tag's key. You can specify more than one tag to delete.

Type: String

Default: None

Required: Yes

### *Tag.n.Value*

The tag's value.

Type: String

Default: If you omit this parameter, we delete the tag regardless of its value. If you specify this parameter with an empty string as the value, we delete the key only if its value is an empty string.

Required: No

## Response Elements

The following elements are returned in a `DeleteTagsResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidID \(p. 619\)](#)

- [MissingParameter](#) (p. 619)

## Examples

### Example Request 1

This example deletes the tags for the AMI with the ID `ami-1a2b3c4d`.

First, get a list of the tags using the `DescribeTags` request.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&ResourceId.1=ami-1a2b3c4d
&AUTHPARAMS
```

Next, delete the tags.

```
https://ec2.amazonaws.com/?Action>DeleteTags
&ResourceId.1=ami-1a2b3c4d
&Tag.1.Key=webserver
&Tag.2.Key=stack
&AUTHPARAMS
```

### Example Response 1

The following is the example response for the `DescribeTags` request.

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

The following is the example response for the `DeleteTags` request.

```
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteTagsResponse>
```

## Example Request 2

This example deletes the stack tag from two particular instances.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=stack
&ResourceId.2=i-12345678
&Tag.2.Key=stack
&AUTHPARAMS
```

## Example Request 3

This example request deletes the `stack` and `webserver` tags for two particular instances.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&ResourceId.2=i-5f4e3d2a
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS
```

## Example Request 4

You can specify a tag key without a corresponding tag value to delete the tag regardless of its value. This example request deletes all tags whose that have a key of `Purpose`, regardless of the tag value.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=Purpose
&AUTHPARAMS
```

## Example Request 5

When you create a tag, you can set the tag value to the empty string. Correspondingly, you can delete only tags that have a specific key and whose value is the empty string. This example request deletes all tags for the specified instance where the key is `Purpose` and the tag value is the empty string.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=Purpose
&Tag.2.Value=
&AUTHPARAMS
```

## Related Actions

- [CreateTags](#) (p. 118)
- [DescribeTags](#) (p. 322)

# DeleteVolume

## Description

Deletes the specified Amazon EBS volume. The volume must be in the `available` state (not attached to an instance). For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Note

The volume may remain in the `deleting` state for several minutes.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteVolumeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectState \(p. 619\)](#)
- [InvalidState \(p. 619\)](#)
- [InvalidVolume.NotFound \(p. 619\)](#)
- [VolumeInUse \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the volume with the ID `vol-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS
```

## Example Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 121)
- [DescribeVolumes](#) (p. 330)
- [AttachVolume](#) (p. 30)
- [DetachVolume](#) (p. 362)

# DeleteVpc

## Description

Deletes the specified VPC. You must detach or delete all gateways and resources that are associated with the VPC before you can delete it. For example, you must terminate all instances running in the VPC, delete all security groups associated with the VPC (except the default one), delete all route tables associated with the VPC (except the default one), and so on.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteVpcResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [DependencyViolation \(p. 619\)](#)
- [InvalidVpcID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified VPC.

```
https://ec2.amazonaws.com/?Action=DeleteVpc
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```



## Example Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcResponse>
```

## Related Actions

- [CreateVpc](#) (p. 125)
- [DescribeVpcs](#) (p. 346)

# DeleteVpcPeeringConnection

## Description

Deletes a VPC peering connection. Either the owner of the requester VPC or the owner of the peer VPC can delete the VPC peering connection if it's in the `active` state. The owner of the requester VPC can delete a VPC peering connection in the `pending-acceptance` state.

### Note

To reject a VPC peering connection request that's pending your approval, use the [RejectVpcPeeringConnection](#) (p. 425) command.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *VpcPeeringConnectionId*

The ID of the VPC peering connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteVpcPeeringConnection` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidStateTransition \(p. 619\)](#)
- [InvalidVpcPeeringConnectionId.Malformed \(p. 619\)](#)
- [InvalidVpcPeeringConnectionId.NotFound \(p. 619\)](#)
- [OperationNotPermitted \(p. 619\)](#)

## Examples

### Example Request

This example deletes the specified VPC peering connection.

```
https://ec2.amazonaws.com/?Action=DeleteVpcPeeringConnection
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DeleteVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-
09-01/" >
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcPeeringConnectionResponse>
```

## Related Actions

- [DescribeVpcPeeringConnections \(p. 342\)](#)
- [CreateVpcPeeringConnection \(p. 127\)](#)
- [AcceptVpcPeeringConnection \(p. 12\)](#)
- [RejectVpcPeeringConnection \(p. 425\)](#)
- [CreateRoute \(p. 102\)](#)
- [ReplaceRoute \(p. 434\)](#)

# DeleteVpnConnection

## Description

Deletes the specified VPN connection.

If you're deleting the VPC and its associated components, we recommend that you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection.

Another reason to delete the VPN connection is if you believe that the tunnel credentials for your VPN connection have been compromised. In that situation, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway using the new configuration information returned with the new VPN connection ID.

For more information about VPN connections, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteVpnConnectionResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpnConnectionID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified VPN connection.

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&vpnConnectionId=vpn-44a8938f
&AUTHPARAMS
```

### Example Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

## Related Actions

- [CreateVpnConnection](#) (p. 130)
- [DescribeVpnConnections](#) (p. 350)
- [DetachVpnGateway](#) (p. 365)
- [DeleteVpc](#) (p. 169)

# DeleteVpnConnectionRoute

## Description

Deletes the specified static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *DestinationCidrBlock*

The CIDR block associated with the local subnet of the customer network.

Type: String

Default: None

Required: Yes

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteVpnConnectionRouteResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidRoute.Malformed \(p. 619\)](#)
- [InvalidVpnConnectionID \(p. 619\)](#)

## Examples

### Example Request

This example request deletes a static route to the destination CIDR block `11.12.0.0/16` associated with the VPN connection with the ID `vpn-83ad48ea`. Note that when using the Query API, the "/" is denoted as "%2F".

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

### Example Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DeleteVpnConnectionRouteResponse>
```

## Related Actions

- [CreateVpnConnectionRoute](#) (p. 133)
- [DeleteVpnConnection](#) (p. 172)
- [DescribeVpnConnections](#) (p. 350)
- [CreateVpc](#) (p. 125)
- [CreateSubnet](#) (p. 115)
- [AttachVpnGateway](#) (p. 33)

# DeleteVpnGateway

## Description

Deletes the specified virtual private gateway. We recommend that before you delete a virtual private gateway, you detach it from the VPC and delete the VPN connection. Note that you don't need to delete the virtual private gateway if you plan to delete and recreate the VPN connection between your VPC and your network.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteVpnGatewayResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectState \(p. 619\)](#)
- [InvalidVpnGatewayID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request deletes the specified virtual private gateway.

```
https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

## Example Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnGatewayResponse>
```

## Related Actions

- [CreateVpnGateway](#) (p. 135)
- [DescribeVpnGateways](#) (p. 354)
- [DeleteVpnConnection](#) (p. 172)



# DeregisterImage

## Description

Deregisters the specified AMI. After you deregister an AMI, it can't be used to launch new instances.

### Note

This command does not delete the AMI.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeregisterImageResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAMIID.Malformed \(p. 619\)](#)
- [InvalidAMIID.NotFound \(p. 619\)](#)
- [InvalidAMIID.Unavailable \(p. 619\)](#)

## Examples

### Example Request

This example request deregisters the specified AMI.

```
https://ec2.amazonaws.com/?Action=DeregisterImage  
&ImageId=ami-4fa54026  
&AUTHPARAMS
```

## Example Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeregisterImageResponse>
```

## Related Actions

- [RegisterImage](#) (p. 420)
- [DescribeImages](#) (p. 208)

# DescribeAccountAttributes

## Description

Describes the specified attribute of your AWS account.

The following are the supported account attributes.

`supported-platforms`

Indicates whether your account can launch instances into EC2-Classic and EC2-VPC, or only into EC2-VPC. For more information, see [Supported Platforms](#).

`default-vpc`

The ID of the default VPC for your account, or `none`. For more information, see [Your Default VPC and Subnets](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*AttributeName* . *n*

One or more account attribute names.

Type: String

Valid values: `supported-platforms` | `default-vpc`

## Response Elements

The following elements are returned in a `DescribeAccountAttributesResponse` structure.

`requestId`

The ID of the request.

Type: `xsd:string`

`accountAttributeSet`

A list of the names and values of the requested attributes, each one wrapped in an `item` element.

Type: [AccountAttributeSetItemType \(p. 487\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameter \(p. 619\)](#)

## Examples

### Example Request

This example describes the platforms that are supported by your AWS account.

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=supported-platforms
&AUTHPARAMS
```

## Example Response 1

The following is an example response for an account that must launch instances into a VPC, such as the default VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## Example Response 2

The following is an example response for an account that can launch instances into EC2-Classic or into a VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>EC2</attributeValue>
        </item>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## Example Request

This example describes the ID of your default VPC.

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=default-vpc
&AUTHPARAMS
```

## Example Response 1

The following is an example response for an account with a default VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>vpc-xxxxxxx</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## Example Response 2

The following is an example response for an account without a default VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>none</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

# DescribeAddresses

## Description

Describes one or more of your Elastic IP addresses.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *PublicIp.n*

[EC2-Classic] One or more Elastic IP addresses.

Type: String

Default: Describes all your Elastic IP addresses.

Required: No

### *AllocationId.n*

[EC2-VPC] One or more allocation IDs.

Type: String

Default: Describes all your Elastic IP addresses.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Elastic IP addresses. For example, you can use a filter to specify that you're interested in addresses that have a specific tag. You can specify multiple values for a filter. The response includes information for an address only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify addresses of a specific value that have a specific tag. The response includes information for an address only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

`domain`

Indicates whether the address is for use in a VPC.

Type: String

Valid values: `standard` | `vpc`

`instance-id`

The instance the address is associated with (if any).

Type: String

`public-ip`

The Elastic IP address.

Type: String

`allocation-id`

The allocation ID for the address (VPC only).

Type: String

`association-id`

The association ID for the address (VPC only).

Type: String

`network-interface-id`

The network interface (if any) that the address is associated with (VPC only).

Type: String

`network-interface-owner-id`

The owner IID.

Type: String

`private-ip-address`

The private IP address associated with the Elastic IP address (VPC only).

Type: String

## Response Elements

The following elements are returned in a `DescribeAddressesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`addressesSet`

A list of Elastic IP addresses, each one wrapped in an `item` element.

Type: [DescribeAddressesResponseItemType](#) (p. 497)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidAddress.NotFound](#) (p. 619)
- [InvalidAllocationID.NotFound](#) (p. 619)
- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example request describes two specific Elastic IP addresses allocated to your account. Both addresses were created for instances in EC2-Classic, so you must specify them using their IP addresses. The address 192.0.2.1 is assigned to instance i-f15ebb98, and 198.51.100.2 is not assigned to an instance.

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&PublicIp.1=192.0.2.1
&PublicIp.2=198.51.100.2
&AUTHPARAMS
```

### Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>192.0.2.1</publicIp>
      <domain>standard</domain>
      <instanceId>i-f15ebb98</instanceId>
    </item>
    <item>
      <publicIp>198.51.100.2</publicIp>
      <domain>standard</domain>
      <instanceId/>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

### Example Request

This example request describes a specific Elastic IP address allocated to your account. This address was created for instances in EC2-VPC, so you must use the allocation ID to specify the address.

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1=eipalloc-08229861
&AUTHPARAMS
```

### Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>203.0.113.41</publicIp>
      <allocationId>eipalloc-08229861</allocationId>
      <domain>vpc</domain>
      <instanceId>i-64600030</instanceId>
      <associationId>eipassoc-f0229899</associationId>
      <networkInterfaceId>eni-ef229886</networkInterfaceId>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```



```
<networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>  
<privateIpAddress>10.0.0.228</privateIpAddress>  
</item>  
</addressesSet>  
</DescribeAddressesResponse>
```

## Example Request

This example describes your Elastic IP addresses for EC2-VPC only.

```
https://ec2.amazonaws.com/?Action=DescribeAddresses  
&Filter.1.Name=domain  
&Filter.1.Value.1=vpc  
&AUTHPARAMS
```

## Related Actions

- [AllocateAddress](#) (p. 13)
- [ReleaseAddress](#) (p. 427)
- [AssociateAddress](#) (p. 19)
- [DisassociateAddress](#) (p. 369)

# DescribeAvailabilityZones

## Description

Describes one or more of the Availability Zones that are available to you. The results include zones only for the region you're currently using. If there is an event impacting an Availability Zone, you can use this request to view the state and any provided message for that Availability Zone.

### Note

Availability Zones are not the same across accounts. The Availability Zone us-east-1a for account A is not necessarily the same as us-east-1a for account B. Zone assignments are mapped independently for each account.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ZoneName . n*

One or more Availability Zone names.

Type: String

Default: None

Required: No

### *Filter . n . Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter . n . Value . m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Availability Zones. For example, you can use a filter to specify that you're interested in Availability Zones in the `available` state. You can specify multiple values for a filter. The response includes information for an Availability Zone only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Availability Zones that are in a particular region and are in the `available` state. The response includes information for an Availability Zone only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**message**  
Information about the Availability Zone.  
Type: String

**region-name**  
The region for the Availability Zone (for example, us-east-1).  
Type: String

**state**  
The state of the Availability Zone  
Type: String  
Valid values: `available` | `impaired` | `unavailable`

**zone-name**  
The name of the zone.  
Type: String

## Response Elements

The following elements are returned in a `DescribeAvailabilityZonesResponse` element.

**requestId**  
The ID of the request.  
Type: `xsd:string`

**availabilityZoneInfo**  
A list of Availability Zones, each one wrapped in an `item` element.  
Type: [AvailabilityZoneItemType](#) (p. 489)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example request describes the Availability Zones that are available to you. The response includes Availability Zones only for the current region.

```
https://ec2.amazonaws.com/?Action=DescribeAvailabilityZones
&AUTHPARAMS
```

### Example Response

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<availabilityZoneInfo>
<item>
  <zoneName>us-east-1a</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
<item>
  <zoneName>us-east-1b</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
<item>
  <zoneName>us-east-1c</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
<item>
  <zoneName>us-east-1d</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
</availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

## Related Actions

- [RunInstances](#) (p. 464)
- [DescribeRegions](#) (p. 262)

# DescribeBundleTasks

## Description

Describes one or more of your bundling tasks.

### Note

Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use the `RegisterImage` action with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *BundleId.n*

One or more bundle task IDs.

Type: String

Default: Describes all your bundle tasks.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain bundle tasks. For example, you can use a filter to specify that you're interested in the bundle tasks in the `complete` state. You can specify multiple values for a filter. The response includes information for a bundle task only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify bundles that are stored in a specific Amazon S3 bucket and are in the `complete` state. The response includes information for a bundle task only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### `bundle-id`

The ID of the bundle task.

Type: String
<code>error-code</code>
If the task failed, the error code returned.
Type: String
<code>error-message</code>
If the task failed, the error message returned.
Type: String
<code>instance-id</code>
The ID of the instance that was bundled.
Type: String
<code>progress</code>
The level of task completion, as a percentage (for example, 20%).
Type: String
<code>s3-bucket</code>
The Amazon S3 bucket to store the AMI.
Type: String
<code>s3-prefix</code>
The beginning of the AMI name.
Type: String
<code>start-time</code>
The time the task started (for example, 2008-09-15T17:15:20.000Z).
Type: DateTime
<code>state</code>
The state of the task.
Type: String
Valid values: <code>pending</code>   <code>waiting-for-shutdown</code>   <code>bundling</code>   <code>storing</code>   <code>cancelling</code>   <code>complete</code>   <code>failed</code>
<code>update-time</code>
The time of the most recent update for the task (for example, 2008-09-15T17:15:20.000Z).
Type: DateTime

## Response Elements

The following elements are returned in a `DescribeBundleTasksResponse` element.

<code>requestId</code>
The ID of the request.
Type: <code>xsd:string</code>
<code>bundleInstanceTasksSet</code>
A list of bundle tasks, each one wrapped in an <code>item</code> element.
Type: <a href="#">BundleInstanceTaskType</a> (p. 493)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidBundleID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the status of the specified bundle task.

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-cla540a8
&AUTHPARAMS
```

### Example Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTasksSet>
    <item>
      <instanceId>i-12345678</instanceId>
      <bundleId>bun-cla540a8</bundleId>
      <state>cancelling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
      <progress>20%</progress>
    </item>
  </bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

### Example Request

This example filters the response to include only bundle tasks whose state is either `complete` or `failed`, and in addition are targeted for the Amazon S3 bucket named `myawsbucket`.

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=myawsbucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```

## Related Actions

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)

# DescribeConversionTasks

## Description

Describes one or more of your conversion tasks.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*ConversionTaskId.n*

One or more conversion task IDs.

Type: String

Required: No

## Response Elements

The following elements are returned in a `DescribeConversionTasksResponse` element.

`conversionTasks`

A list of conversion tasks, each one wrapped in an `item` element.

Type: [ConversionTaskType \(p. 495\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidConversionTaskId \(p. 619\)](#)

## Examples

### Example Request

This example describes all your conversion tasks.

```
https://ec2.amazonaws.com/?Action=DescribeConversionTasks
&AUTHPARAMS
```

### Example Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <conversionTasks>
    <item>
      <conversionTask>
        <conversionTaskId>import-i-fh95npoc</conversionTaskId>
```



```
<expirationTime>2010-12-22T12:01Z</expirationTime>
<importVolume>
  <bytesConverted>1000</bytesConverted>
  <availabilityZone>us-east-1a</availabilityZone>
  <description/>
  <image>
    <format>VDMK</format>
    <size>128696320</size>
    <importManifestUrl>
      https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx
tEXAMPLE%3D
    </importManifestUrl>
  </image>
  <volume>
    <size>8</size>
    <id>vol-34d8a2ff</id>
  </volume>
</importVolume>
<state>active</state>
<statusMessage/>
</conversionTask>
</item>
</conversionTasks>
</DescribeConversionTasksResponse>
```

## Related Actions

- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)
- [CancelConversionTask](#) (p. 47)

# DescribeCustomerGateways

## Description

Describes one or more of your VPN customer gateways.

For more information about VPN customer gateways, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*CustomerGatewayId.n*

One or more customer gateway IDs.

Type: String

Default: Describes all your customer gateways.

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain customer gateways. For example, you can use a filter to specify that you're interested in customer gateways in the `pending` or `available` state. You can specify multiple values for a filter. The response includes information for a customer gateway only if it matches at least one of the of the filter values that you specified.

You can specify multiple filters; for example, specify customer gateways that have a specific IP address for the Internet-routable external interface and are in the `pending` or `available` state. The response includes information for a customer gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`bgp-asn`

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: String

`customer-gateway-id`  
The ID of the customer gateway.  
Type: String

`ip-address`  
The IP address of the customer gateway's Internet-routable external interface (for example, 12.1.2.3).  
Type: String

`state`  
The state of the customer gateway.  
Type: String  
Valid values: `pending` | `available` | `deleting` | `deleted`

`type`  
The type of customer gateway. Currently, the only supported type is `ipsec.1`.  
Type: String  
Valid values: `ipsec.1`

`tag-key`  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.  
Type: String

`tag-value`  
The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.  
Type: String

`tag:key=value`  
The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.  
Example: To list the resources with the tag `Purpose=X`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
`Filter.1.Value.2=Y`

## Response Elements

The following elements are returned in an `DescribeCustomerGatewaysResponse` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`customerGatewaySet`  
A list of customer gateways, each one wrapped in an `item` element.  
Type: [CustomerGatewayType](#) (p. 496)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidCustomerGatewayID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example request describes the specified customer gateway.

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

### Example Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGatewaySet>
    <item>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <ipAddress>12.1.2.3</ipAddress>
      <bgpAsn>65534</bgpasn>
      <tagSet/>
    </item>
  </customerGatewaySet>
</DescribeCustomerGatewaysResponse>
```

### Example Request

This example request uses filters to describe any customer gateway you own whose IP address is 12.1.2.3, and whose state is either pending or available.

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&Filter.1.Name=ip-address
&Filter.1.Value.1=12.1.2.3
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## Related Actions

- [CreateCustomerGateway \(p. 64\)](#)

- [DeleteCustomerGateway](#) (p. 137)

# DescribeDhcpOptions

## Description

Describes one or more of your DHCP options sets.

For more information about DHCP options sets, see [DHCP Options Sets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *DhcpOptionsId.n*

The IDs of one or more DHCP options sets.

Type: String

Default: Describes all your DHCP options sets.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain sets of DHCP options. For example, you can use a filter to specify that you're interested in sets of DHCP options with a particular value for the `domain-name` option. You can specify multiple values for a filter. The response includes information for a set of DHCP options only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify sets of DHCP options that have a specific value for the `domain-name` option and a specific tag. The response includes information for a set of DHCP options only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### `dhcp-options-id`

The ID of a set of DHCP options.

Type: String

key

The key for one of the options (for example, domain-name).

Type: String

value

The value for one of the options.

Type: String

tag-key

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

tag-value

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

tag:key=value

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag Purpose=X, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag Purpose=X or the tag Purpose=Y, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

The following elements are returned in a `DescribeDhcpOptionsResponse` element.

requestId

The ID of the request.

Type: xsd:string

dhcpOptionsSet

A list of DHCP options sets, each one wrapped in an `item` element.

Type: [DhcpOptionsType](#) (p. 509)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidDhcpOptionID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the specified DHCP options set.

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&DhcpOptionsId.1=dopt-7a8b9c2d
&AUTHPARAMS
```

### Example Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptionsSet>
    <item>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>example.com</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.2</value>
            </item>
          </valueSet>
        </item>
      </dhcpConfigurationSet>
      <tagSet/>
    </item>
  </dhcpOptionsSet>
</DescribeDhcpOptionsResponse>
```

### Example Request

This example uses filters to describe any DHCP options set that includes a domain-name option whose value includes the string `example`.



```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&Filter.1.Name=key
&Filter.1.Value.1=domain-name
&Filter.2.Name=value
&Filter.2.Value.1=*example*
&AUTHPARAMS
```

## Related Actions

- [CreateDhcpOptions](#) (p. 66)
- [AssociateDhcpOptions](#) (p. 22)
- [DeleteDhcpOptions](#) (p. 139)

# DescribeExportTasks

## Description

Describes one or more of your export tasks.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*ExportTaskId.n*

One or more export task IDs.

Type: String

Default: Describes all your export tasks.

Required: No

## Response Elements

The following elements are returned in a `DescribeExportTasks` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`exportTaskSet`

A list of export tasks, each one wrapped in an item element.

Type: [ExportTaskResponseType \(p. 513\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidExportTaskID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example describes a single export task.

```
https://ec2.amazonaws.com/?Action=DescribeExportTasks
&exportTaskId.1=export-i-1234wxyz
&AUTHPARAMS
```

## Example Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <exportTaskSet>
    <item>
      <exportTaskId>export-i-1234wxyz</exportTaskId>
      <description>Example for docs</description>
      <state>active</state>
      <statusMessage>Running</statusMessage>
      <instanceExport>
        <instanceId>i-12345678</instanceId>
        <targetEnvironment>VMWare</targetEnvironment>
      </instanceExport>
      <exportToS3>
        <diskImageFormat>VMDK</diskImageFormat>
        <containerFormat>OVA</containerFormat>
        <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
        <s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
      </exportToS3>
    </item>
  </exportTaskSet>
</ DescribeExportTasksResponse>
```

## Related Actions

- [CancelExportTask](#) (p. 49)
- [CreateInstanceExportTask](#) (p. 73)

# DescribeImageAttribute

## Description

Describes the specified attribute of the specified AMI. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *Attribute*

The AMI attribute.

Type: String

Valid values: `description` | `blockDeviceMapping` | `launchPermission` | `productCodes` | `kernel` | `ramdisk` | `sriovNetSupport`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeImageAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `imageId`

The ID of the AMI.

Type: `xsd:string`

### `description`

A description for the AMI, wrapped in a `value` element.

Type: `xsd:string`

### `blockDeviceMapping`

One or more block device mapping entries, each one wrapped in an `item` element.

Type: [BlockDeviceMappingItemType \(p. 491\)](#)

### `launchPermission`

A list of launch permissions, each one wrapped in an `item` element.

Type: [LaunchPermissionItemType \(p. 534\)](#)

### `productCodes`

A list of product codes, each one wrapped in an `item` element that contains a product code and a product code type.

Type: [ProductCodeItemType \(p. 549\)](#)

### `kernel`

The kernel ID, wrapped in a `value` element.

Type: `xsd:string`

ramdisk

The RAM disk ID, wrapped in a `value` element.

Type: `xsd:string`

sriovNetSupport

Enhanced networking for the AMI. A value of `simple` means that enhanced networking is enabled.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAMIID.NotFound \(p. 619\)](#)
- [InvalidAMIID.Unavailable \(p. 619\)](#)

## Examples

### Example Request

This example lists the launch permissions for the specified AMI.

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

### Example Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-61a54008</imageId>
  <launchPermission>
    <item>
      <group>all</group>
    </item>
    <item>
      <userId>495219933132</userId>
    </item>
  </launchPermission>
</DescribeImageAttributeResponse>
```

### Example Request

This example lists the product codes for the specified AMI.

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
```

```
&Attribute=productCodes  
&AUTHPARAMS
```

## Example Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <imageId>ami-2bb65342</imageId>  
  <productCodes>  
    <item>  
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>  
      <type>marketplace</type>  
    </item>  
  </productCodes>  
</DescribeImageAttributeResponse>
```

## Related Actions

- [DescribeImages](#) (p. 208)
- [ModifyImageAttribute](#) (p. 391)
- [ResetImageAttribute](#) (p. 450)

# DescribeImages

## Description

Describes one or more of the images (AMIs, AKIs, and ARIs) available to you. Images available to you include public images, private images that you own, and private images owned by other AWS accounts but for which you have explicit launch permissions.

Launch permissions fall into three categories:

**public**

The owner of the AMI granted launch permissions for the AMI to the `all` group. All AWS accounts have launch permissions for these AMIs.

**explicit**

The owner of the AMI granted launch permissions to a specific AWS account.

**implicit**

An AWS account has implicit launch permissions for all the AMIs it owns.

The list of images returned can be modified by specifying IDs, owners, or AWS accounts with launch permissions. If no options are specified, Amazon EC2 returns all images for which you have launch permissions.

If you specify one or more image IDs, only images that have the specified IDs are returned. If you specify an image to which you don't have access, it's not included in the returned results.

If you specify one or more owners, only images from the specified owners and for which you have access are returned. The results can include the account IDs of the specified owners—`amazon` for images owned by Amazon or `self`, for images that you own, or `marketplace` for images from the AWS Marketplace.

**Note**

For an overview of the AWS Marketplace, see [Introducing AWS Marketplace](#).

If you specify a list users with launch permissions, only images with launch permissions for those users are returned. You can specify account IDs (if you own the images), `self` for images that you own or have explicit permissions for, or `all` for public images.

**Note**

Deregistered images are included in the returned results for an unspecified interval after deregistration.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*ExecutableBy.n*

Filters the images by users with explicit launch permissions. Specify an AWS account ID, `self` (the sender of the request), or `all` (public AMIs).

Type: String

Valid values: `all` | `self` | *AWS account ID*

Default: None

Required: No

*ImageId.n*

One or more image IDs.

Type: String

Default: Describes all images available to you.

Required: No

*Owner.n*

Filters the images by the owner. Specify an AWS account ID, `amazon` (owner is Amazon), `aws-marketplace` (owner is AWS Marketplace), `self` (owner is the sender of the request), or `all` (all owners).

Type: String

Valid values: `amazon` | `aws-marketplace` | `self` | *AWS account ID* | `all`

Default: None

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain images. For example, you can use a filter to specify that you're interested in images that use a specific kernel. You can specify multiple values for a filter. The response includes information for an image only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify images that use a specific kernel and use an Amazon EBS volume as the root device. The response includes information for an image only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

`architecture`

The image architecture.

Type: String

Valid values: `i386` | `x86_64`

`block-device-mapping.delete-on-termination`

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

`block-device-mapping.device-name`

The device name (for example, `/dev/sdh`) for the Amazon EBS volume.

Type: String



`block-device-mapping.snapshot-id`  
The ID of the snapshot used for the Amazon EBS volume.  
Type: String

`block-device-mapping.volume-size`  
The volume size of the Amazon EBS volume, in GiB.  
Type: Integer

`block-device-mapping.volume-type`  
The volume type of the Amazon EBS volume.  
Type: String  
Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

`description`  
The description of the image (provided during image creation).  
Type: String

`image-id`  
The ID of the image.  
Type: String

`image-type`  
The image type.  
Type: String  
Valid values: `machine` | `kernel` | `ramdisk`

`is-public`  
Whether the image is public.  
Type: Boolean

`kernel-id`  
The kernel ID.  
Type: String

`manifest-location`  
The location of the image manifest.  
Type: String

`name`  
The name of the AMI (provided during image creation).  
Type: String

`owner-alias`  
The AWS account alias (for example, `amazon`).  
Type: String

`owner-id`  
The AWS account ID of the image owner.  
Type: String

`platform`  
The platform. To only list Windows-based AMIs, use `windows`.  
Type: String  
Valid value: `windows`

`product-code`  
The product code.  
Type: String

`product-code.type`  
The type of the product code.  
Type: String

Valid values: `devpay` | `marketplace`

`ramdisk-id`  
The RAM disk ID.  
Type: String

`root-device-name`  
The name of the root device volume (for example, `/dev/sda1`).  
Type: String

`root-device-type`  
The type of the root device volume.  
Type: String  
Valid values: `ebs` | `instance-store`

`state`  
The state of the image.  
Type: String  
Valid values: `available` | `pending` | `failed`

`state-reason-code`  
The reason code for the state change.  
Type: String

`state-reason-message`  
The message for the state change.  
Type: String

`tag-key`  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.  
Type: String

`tag-value`  
The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.  
Type: String

`tag:key=value`  
The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.  
Example: To list the resources with the tag `Purpose=X`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
`Filter.1.Value.2=Y`

`virtualization-type`  
The virtualization type.  
Type: String  
Valid values: `paravirtual` | `hvm`

`hypervisor`  
The hypervisor type.  
Type: String

Valid values: `ovm` | `xen`

## Response Elements

The following elements are returned in a `DescribeImagesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`imagesSet`

A list of images, each one wrapped in an `item` element.

Type: [DescribeImagesResponseItem](#) (p. 498)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidAMIID.Malformed](#) (p. 619)
- [InvalidAMIID.NotFound](#) (p. 619)
- [InvalidUserID.Malformed](#) (p. 619)
- [MissingParameter](#) (p. 619)

## Examples

### Example Request

This example describes the specified AMI.

```
https://ec2.amazonaws.com/?Action=DescribeImages
&ImageId.1=ami-be3adfd7
&AUTHPARAMS
```

### Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <ramdiskId>ari-1a2b3c4d</ramdiskId>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

```
<imageOwnerAlias>amazon</imageOwnerAlias>
<name>getting-started</name>
<description>Image Description</description>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeSize>15</volumeSize>
      <deleteOnTermination>>false</deleteOnTermination>
      <volumeType>standard</volumeType>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</imagesSet>
</DescribeImagesResponse>
```

## Example Request

This example filters the response to include only the public Windows images with an x86\_64 architecture.

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
&AUTHPARAMS
```

## Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>

      <isPublic>true</isPublic>
      <architecture>x86_64</architecture>
      <imageType>machine</imageType>
      <platform>windows</platform>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <rootDeviceType>instance-store</rootDeviceType>
      <blockDeviceMapping/>
```

```
        <virtualizationType>hvm</virtualizationType>
        <tagSet/>
        <hypervisor>xen</hypervisor>
    </item>
    ...
</imagesSet>
</DescribeImagesResponse>
```

## Example Request

This example returns the results to display images where the owner is `aws-marketplace`.

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.0=aws-marketplace
&AUTHPARAMS
```

## Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>true</isPublic>
      <productCodes>
        <item>
          <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
      </productCodes>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <imageOwnerAlias>aws-marketplace</imageOwnerAlias>
      <name>example-marketplace-amzn-ami.1</name>
      <description>Amazon Linux AMI i386 EBS</description>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1a2b3c4d</snapshotId>
            <volumeSize>8</volumeSize>
            <deleteOnTermination>true</deleteOnTermination>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <hypervisor>xen</hypervisor>
    </item>
```

```
    ...  
  </imagesSet>  
</DescribeImagesResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 220)
- [DescribeImageAttribute](#) (p. 205)

# DescribeInstanceAttribute

## Description

Describes the specified attribute of the specified instance. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Attribute*

The instance attribute.

Type: String

Valid values: `blockDeviceMapping` | `disableApiTermination` | `ebsOptimized` | `groupSet` | `instanceInitiatedShutdownBehavior` | `instanceType` | `kernel` | `productCodes` | `ramdisk` | `rootDeviceName` | `sourceDestCheck` | `sriovNetSupport` | `userData`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeInstanceAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceId`

The ID of the instance.

Type: `xsd:string`

### `blockDeviceMapping`

The block device mapping of the instance.

Type: [InstanceBlockDeviceMappingResponseItemType \(p. 520\)](#)

### `disableApiTermination`

If the value is `true`, you can't terminate the instance through the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: `xsd:boolean`

### `ebsOptimized`

Indicates whether the instance is optimized for EBS I/O.

Type: `xsd:boolean`

### `groupSet`

The security groups associated with the instance.

Type: [GroupItemType \(p. 515\)](#)

`instanceInitiatedShutdownBehavior`

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: `xsd:string`

Valid values: `stop` | `terminate`

`instanceType`

The instance type. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: `xsd:string`

`kernel`

The kernel ID.

Type: `xsd:string`

`productCodes`

A list of product codes.

Type: [ProductCodesSetItemType](#) (p. 550)

`ramdisk`

The RAM disk ID.

Type: `xsd:string`

`rootDeviceName`

The name of the root device (for example, `/dev/sda1`).

Type: `xsd:string`

`sourceDestCheck`

Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: `xsd:boolean`

`sriovNetSupport`

Enhanced networking for the instance. A value of `simple` means that enhanced networking is enabled.

Type: `xsd:string`

`userData`

The Base64-encoded MIME user data.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInstanceId.NotFound](#) (p. 619)

## Examples

### Example Request

This example lists the instance type of the specified instance.

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
```



```
&Attribute=instanceType  
&AUTHPARAMS
```

## Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <instanceId>i-10a64379</instanceId>  
  <instanceType>  
    <value>t1.micro</value>  
  </instanceType>  
</DescribeInstanceAttributeResponse>
```

## Example Request

This example lists the current value of the `InstanceInitiatedShutdownBehavior` attribute for the specified instance.

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute  
&InstanceId=i-10a64379  
&Attribute=instanceInitiatedShutdownBehavior  
&AUTHPARAMS
```

## Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <instanceId>i-10a64379</instanceId>  
  <instanceInitiatedShutdownBehavior>  
    <value>stop</value>  
  </instanceInitiatedShutdownBehavior>  
</DescribeInstanceAttributeResponse>
```

## Example Request

This example lists the current value of the `DisableApiTermination` attribute for the specified instance.

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute  
&InstanceId=i-10a64379  
&Attribute=disableApiTermination  
&AUTHPARAMS
```

## Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <instanceId>i-10a64379</instanceId>
```

```
<disableApiTermination>  
  <value>>false</value>  
</disableApiTermination>  
</DescribeInstanceAttributeResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 220)
- [ModifyInstanceAttribute](#) (p. 394)
- [ResetInstanceAttribute](#) (p. 452)

# DescribeInstances

## Description

Describes one or more of your instances.

If you specify one or more instance IDs, Amazon EC2 returns information for those instances. If you do not specify instance IDs, you receive information for all relevant instances. If you specify an invalid instance ID, you receive an error. If you specify an instance that you don't own, we don't include it in the results.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: Describes all your instances.

Required: No

### *MaxResults*

The maximum number of items to return for this call. The call also returns a token that you can specify in a subsequent call to get the next set of results.

Type: Integer

Default: The call returns all items.

Constraint: If the value is greater than 1000, we return only 1000 items.

Required: No

### *NextToken*

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain instances. For example, you can use a filter to specify that you're interested in instances launched with a specific key pair. You can specify multiple values for a filter. The response includes information for an instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify instances that are launched with a specific key pair and use an Amazon EBS volume as the root device. The response includes information for an instance only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`architecture`

The instance architecture.

Type: String

Valid values: `i386` | `x86_64`

`availability-zone`

The Availability Zone of the instance.

Type: String

`block-device-mapping.attach-time`

The attach time for an Amazon EBS volume mapped to the instance (for example, 2010-09-15T17:15:20.000Z)

Type: DateTime

`block-device-mapping.delete-on-termination`

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

`block-device-mapping.device-name`

The device name (for example, `/dev/sdh`) for the Amazon EBS volume.

Type: String

`block-device-mapping.status`

The status for the Amazon EBS volume.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

`block-device-mapping.volume-id`

The volume ID of the Amazon EBS volume.

Type: String

`client-token`

The idempotency token you provided when you launched the instance.

Type: String

`dns-name`

The public DNS name of the instance.

Type: String

`group-id`

The ID of the security group for the instance. If the instance is in EC2-Classic or a default VPC, you can use `group-name` instead.

Type: String

<code>group-name</code>	The name of the security group for the instance. If the instance is in a nondefault VPC, you must use <code>group-id</code> instead. Type: String
<code>iam-instance-profile.arn</code>	The instance profile associated with the instance. Type: ARN
<code>image-id</code>	The ID of the image used to launch the instance. Type: String
<code>instance-id</code>	The ID of the instance. Type: String
<code>instance-lifecycle</code>	Indicates whether this is a Spot Instance. Type: String Valid values: <code>spot</code>
<code>instance-state-code</code>	The state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. Type: Integer (16-bit unsigned integer) Valid values: 0 (pending)   16 (running)   32 (shutting-down)   48 (terminated)   64 (stopping)   80 (stopped)
<code>instance-state-name</code>	The state of the instance. Type: String Valid values: <code>pending</code>   <code>running</code>   <code>shutting-down</code>   <code>terminated</code>   <code>stopping</code>   <code>stopped</code>
<code>instance-type</code>	The type of instance (for example, <code>m1.small</code> ). Type: String
<code>instance.group-id</code>	The ID of the security group for the instance. If the instance is in EC2-Classic or a default VPC, you can use <code>instance.group-name</code> instead. Type: String
<code>instance.group-name</code>	The name of the security group for the instance. If the instance is in a nondefault VPC, you must use <code>instance.group-id</code> instead. Type: String
<code>ip-address</code>	The public IP address of the instance. Type: String
<code>kernel-id</code>	The kernel ID. Type: String
<code>key-name</code>	The name of the key pair used when the instance was launched. Type: String
<code>launch-index</code>	When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).

<code>launch-time</code>	Type: String The time when the instance was launched (for example, 2010-08-07T11:54:42.000Z). Type: DateTime
<code>monitoring-state</code>	Indicates whether monitoring is enabled for the instance. Type: String Valid values: <code>disabled</code>   <code>enabled</code>
<code>owner-id</code>	The AWS account ID of the instance owner. Type: String
<code>placement-group-name</code>	The name of the placement group for the instance. Type: String
<code>platform</code>	The platform. Use <code>windows</code> if you have Windows based instances; otherwise, leave blank. Type: String Valid value: <code>windows</code>
<code>private-dns-name</code>	The private DNS name of the instance. Type: String
<code>private-ip-address</code>	The private IP address of the instance. Type: String
<code>product-code</code>	The product code associated with the AMI used to launch the instance. Type: String
<code>product-code.type</code>	The type of product code. Type: String Valid values: <code>devpay</code>   <code>marketplace</code>
<code>ramdisk-id</code>	The RAM disk ID. Type: String
<code>reason</code>	The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the <code>state-reason-code</code> filter. Type: String
<code>requester-id</code>	The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on) Type: String
<code>reservation-id</code>	The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you'll get one reservation ID. If you launch ten instances using the same launch request, you'll also get one reservation ID. Type: String

- `root-device-name`  
The name of the root device for the instance (for example, `/dev/sda1`).  
Type: String
- `root-device-type`  
The type of root device that the instance uses.  
Type: String  
Valid values: `ebs` | `instance-store`
- `source-dest-check`  
Indicates whether the instance performs source/destination checking. A value of `true` means that checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform network address translation (NAT) in your VPC.  
Type: Boolean
- `spot-instance-request-id`  
The ID of the Spot Instance request.  
Type: String
- `state-reason-code`  
The reason code for the state change.  
Type: String
- `state-reason-message`  
A message that describes the state change.  
Type: String
- `subnet-id`  
The ID of the subnet for the instance.  
Type: String
- `tag-key`  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.  
Type: String
- `tag-value`  
The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.  
Type: String
- `tag:key=value`  
The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.  
Example: To list the resources with the tag `Purpose=X`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
`Filter.1.Value.2=Y`
- `tenancy`  
The tenancy of an instance.  
Type: String  
Valid values: `dedicated` | `default`

`virtualization-type`  
The virtualization type of the instance.  
Type: String  
Valid values: `paravirtual` | `hvm`

`vpc-id`  
The ID of the VPC that the instance is running in.  
Type: String

`hypervisor`  
The hypervisor type of the instance.  
Type: String  
Valid values: `ovm` | `xen`

`network-interface.description`  
The description of the network interface.  
Type: String

`network-interface.subnet-id`  
The ID of the subnet for the network interface.  
Type: String

`network-interface.vpc-id`  
The ID of the VPC for the network interface.  
Type: String

`network-interface.network-interface.id`  
The ID of the network interface.  
Type: String

`network-interface.owner-id`  
The ID of the owner of the network interface.  
Type: String

`network-interface.availability-zone`  
The Availability Zone for the network interface.  
Type: String

`network-interface.requester-id`  
The requester ID for the network interface.  
Type: String

`network-interface.requester-managed`  
Indicates whether the network interface is being managed by AWS.  
Type: Boolean

`network-interface.status`  
The status of the network interface.  
Type: String  
Valid values: `available` | `in-use`

`network-interface.mac-address`  
The MAC address of the network interface.  
Type: String

`network-interface-private-dns-name`  
The private DNS name of the network interface.  
Type: String

`network-interface.source-destination-check`  
Whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.



Type: Boolean

`network-interface.group-id`  
The ID of a security group associated with the network interface.  
Type: String

`network-interface.group-name`  
The name of a security group associated with the network interface.  
Type: String

`network-interface.attachment.attachment-id`  
The ID of the interface attachment.  
Type: String

`network-interface.attachment.instance-id`  
The ID of the instance to which the network interface is attached.  
Type: String

`network-interface.attachment.instance-owner-id`  
The owner ID of the instance to which the network interface is attached.  
Type: String

`network-interface.addresses.private-ip-address`  
The private IP address associated with the network interface.  
Type: String

`network-interface.attachment.device-index`  
The device index to which the network interface is attached.  
Type: Integer

`network-interface.attachment.status`  
The status of the attachment.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

`network-interface.attachment.attach-time`  
The time that the network interface was attached to an instance.  
Type: Date

`network-interface.attachment.delete-on-termination`  
Specifies whether the attachment is deleted when an instance is terminated.  
Type: Boolean

`network-interface.addresses.primary`  
Specifies whether the IP address of the network interface is the primary private IP address.  
Type: Boolean

`network-interface.addresses.association.public-ip`  
The ID of the association of an Elastic IP address with a network interface.  
Type: String

`network-interface.addresses.association.ip-owner-id`  
The owner ID of the private IP address associated with the network interface.  
Type: String

`association.public-ip`  
The address of the Elastic IP address bound to the network interface.  
Type: String

`association.ip-owner-id`  
The owner of the Elastic IP address associated with the network interface.  
Type: String

`association.allocation-id`  
The allocation ID returned when you allocated the Elastic IP address for your network interface.

Type: String

`association.association-id`

The association ID returned when the network interface was associated with an IP address.

Type: String

## Response Elements

The following elements are returned in a `DescribeInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`reservationSet`

A list of reservations, each one wrapped in an `item` element.

Type: [ReservationInfoType](#) (p. 552)

`nextToken`

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInstanceID.Malformed](#) (p. 619)
- [InvalidInstanceID.NotFound](#) (p. 619)
- [InvalidParameterValue](#) (p. 619)
- [MissingParameter](#) (p. 619)

## Examples

### Example Request

This example describes all instances owned by your AWS account.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&AUTHPARAMS
```

### Example Response

This example response shows information for one instance.

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
```

```
<reservationId>r-1a2b3c4d</reservationId>
<ownerId>111122223333</ownerId>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>my-security-group</groupName>
  </item>
</groupSet>
<instancesSet>
  <item>
    <instanceId>i-1a2b3c4d</instanceId>
    <imageId>ami-1a2b3c4d</imageId>
    <instanceState>
      <code>l6</code>
      <name>running</name>
    </instanceState>
    <privateDnsName/>
    <dnsName/>
    <reason/>
    <keyName>my-key-pair</keyName>
    <amiLaunchIndex>0</amiLaunchIndex>
    <productCodes/>
    <instanceType>c1.medium</instanceType>
    <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
    <placement>
      <availabilityZone>us-west-2a</availabilityZone>
      <groupName/>
      <tenancy>default</tenancy>
    </placement>
    <platform>windows</platform>
    <monitoring>
      <state>disabled</state>
    </monitoring>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <ipAddress>46.51.219.63</ipAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <architecture>x86_64</architecture>
    <rootDeviceType>ebs</rootDeviceType>
    <rootDeviceName>/dev/sda1</rootDeviceName>
    <blockDeviceMapping>
      <item>
        <deviceName>/dev/sda1</deviceName>
        <ebs>
          <volumeId>vol-1a2b3c4d</volumeId>
          <status>attached</status>
          <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
          <deleteOnTermination>true</deleteOnTermination>
        </ebs>
      </item>
    </blockDeviceMapping>
```

```
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>111122223333</ownerId>
    <status>in-use</status>
    <macAddress>1b:2b:3c:4d:5e:6f</macAddress>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-1a2b3c4d</attachmentId>
      <deviceIndex>0</deviceIndex>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </attachment>
    <association>
      <publicIp>198.51.100.63</publicIp>
      <ipOwnerId>111122223333</ipOwnerId>
    </association>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.0.12</privateIpAddress>
        <primary>true</primary>
        <association>
          <publicIp>198.51.100.63</publicIp>
          <ipOwnerId>111122223333</ipOwnerId>
        </association>
      </item>
      <item>
        <privateIpAddress>10.0.0.14</privateIpAddress>
        <primary>false</primary>
        <association>
          <publicIp>198.51.100.177</publicIp>
          <ipOwnerId>111122223333</ipOwnerId>
        </association>
      </item>
    </privateIpAddressesSet>
  </item>
</networkInterfaceSet>
</item>
```

```
    </instancesSet>
  </item>
</reservationSet>
</DescribeInstancesResponse>
```

## Example Request

This example describes only the instances that have the `m1.small` or `m1.large` instance type and an attached Amazon EBS volume that will be deleted on termination.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS
```

## Example Request

This example describes all instances that are running in a VPC.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=*
&AUTHPARAMS
```

## Example Request

This example describes any instances that have a tag with the key `Owner` and the value `DbAdmin`.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag:Name
&Filter.1.Value.1=DbAdmin
&AUTHPARAMS
```

## Example Request

This example describes any instances that have a tag with the key `Owner`, regardless of the value of the tag.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag-key
&Filter.1.Value.1=Owner
&AUTHPARAMS
```

## Related Actions

- [RunInstances](#) (p. 464)

- [StartInstances](#) (p. 474)
- [StopInstances](#) (p. 476)
- [TerminateInstances](#) (p. 478)

# DescribeInstanceStatus

## Description

Describes the status of one or more instances, including any scheduled events.

Instance status has two main components:

- System Status reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems. The `DescribeInstanceStatus` response elements report such problems as impaired reachability.
- Instance Status reports impaired functionality that arises from problems internal to the instance. The `DescribeInstanceStatus` response elements report such problems as impaired reachability.

Instance status provides information about four types of scheduled events for an instance that may require your attention:

- **Scheduled Reboot:** When Amazon EC2 determines that an instance must be rebooted, the instances status returns one of two event codes: `system-reboot` or `instance-reboot`. System reboot commonly occurs if certain maintenance or upgrade operations require a reboot of the underlying host that supports an instance. Instance reboot commonly occurs if the instance must be rebooted, rather than the underlying host. Rebooting events include a scheduled start and end time.
- **System Maintenance:** When Amazon EC2 determines that an instance requires maintenance that requires power or network impact, the instance's status will return an event code called `system-maintenance`. System maintenance is either power maintenance or network maintenance. For power maintenance, your instance will be unavailable for a brief period of time and then rebooted. For network maintenance, your instance will experience a brief loss of network connectivity. System maintenance events include a scheduled start and end time. You will also be notified by email if one of your instances is set for system maintenance. The email message indicates when your instance is scheduled for maintenance.
- **Scheduled Retirement:** When Amazon EC2 determines that an instance must be shut down, the instance's status returns an event code called `instance-retirement`. Retirement commonly occurs when the underlying host is degraded and must be replaced. Retirement events include a scheduled start and end time. You will also be notified by email if one of your instances is set to retiring. The email message indicates when your instance will be permanently retired.
- **Scheduled Stop:** When Amazon EC2 determines that an instance must be shut down, the instances status returns an event code called `instance-stop`. Stop events include a scheduled start and end time. You will also be notified by email if one of your instances is set to stop. The email message indicates when your instance will be stopped.

When your instance is retired, it will either be terminated (if its root device type is the instance-store) or stopped (if its root device type is an EBS volume). Instances stopped due to retirement will not be restarted, but you can do so manually. You can also avoid retirement of EBS-backed instances by manually restarting your instance when its event code is `instance-retirement`. This ensures that your instance is started on a different underlying host.

For more information about failed status checks, see [Troubleshooting Instances with Failed Status Checks](#) in the *Amazon EC2 User Guide for Linux Instances*. For more information about working with scheduled events, see [Working with an Instance That Has a Scheduled Event](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId*

One or more instance IDs.

Type: String

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Required: No

### *IncludeAllInstances*

When `true`, includes the health status for all instances. When `false`, includes the health status for running instances only.

Type: Boolean

Default: `false`

Required: No

### *MaxResults*

The maximum number of items to return for this call. The call also returns a token that you can specify in a subsequent call to get the next set of results.

Type: Integer

Default: The call returns all items.

Constraint: If the value is greater than 1000, we return only 1000 items.

Required: No

### *NextToken*

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain instances. For example, you can use a filter to specify that you're interested in instances in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for an instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify instances that are in a specific Availability Zone and have a status of `retiring`. The response includes information for an instance only if it matches all the



filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`availability-zone`

The Availability Zone of the instance.

Type: String

`event.code`

The code identifying the type of event.

Type: String

Valid values: `instance-reboot | system-reboot | system-maintenance | instance-retirement | instance-stop`

`event.description`

A description of the event.

Type: String

`event.not-after`

The latest end time for the scheduled event.

Type: DateTime

`event.not-before`

The earliest start time for the scheduled event.

Type: DateTime

`instance-state-name`

The state of the instance.

Type: String

Valid values: `pending | running | shutting-down | terminated | stopping | stopped`

`instance-state-code`

A code representing the state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented

Type: Integer (16-bit unsigned integer)

Valid values: `0 (pending) | 16 (running) | 32 (shutting-down) | 48 (terminated) | 64 (stopping) | 80 (stopped)`

`system-status.status`

The system status of the instance.

Type: String

Valid values: `ok | impaired | initializing | insufficient-data | not-applicable`

`system-status.reachability`

Filters on system status where the name is reachability.

Type: String

Valid values: `passed | failed | initializing | insufficient-data`

`instance-status.status`

The status of the instance.

Type: String

Valid values: `ok | impaired | initializing | insufficient-data | not-applicable`

`instance-status.reachability`

Filters on instance status where the name is reachability.

Type: String

Valid values: `passed` | `failed` | `initializing` | `insufficient-data`

## Response Elements

The following elements are returned in a `DescribeInstanceStatusResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceStatusSet`

A list of instances status descriptions, each one wrapped in an `item` element.

Type: [InstanceStatusItemType](#) (p. 530)

### `nextToken`

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInstanceID.Malformed](#) (p. 619)
- [InvalidInstanceID.NotFound](#) (p. 619)
- [InvalidRequest](#) (p. 619)

## Examples

### Example Request

This example returns instance status descriptions for all instances.

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&AUTHPARAMS
```

### Example Request

This example returns instance status descriptions for the specified instances.

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&InstanceId.0=i-1a2b3c4d  
&InstanceId.1=i-2a2b3c4d  
&AUTHPARAMS
```

## Example Request

This example returns instance status descriptions for all instances specified by supported DescribeInstanceStatus filters.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.0.Name=system-status.reachability
&Filter.0.Value.failed
&AUTHPARAMS
```

## Example Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
  <instanceStatusSet>
    <item>
      <instanceId>i-1a2b3c4d</instanceId>
      <availabilityZone>us-east-1d</availabilityZone>
      <instanceState>
        <code>16</code>
        <name>running</name>
      </instanceState>
      <systemStatus>
        <status>impaired</status>
        <details>
          <item>
            <name>reachability</name>
            <status>failed</status>
            <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
          </item>
        </details>
      </systemStatus>
      <instanceStatus>
        <status>impaired</status>
        <details>
          <item>
            <name>reachability</name>
            <status>failed</status>
            <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
          </item>
        </details>
      </instanceStatus>
      <eventsSet>
        <item>
          <code>instance-retirement</code>
          <description>The instance is running on degraded hardware</de
scription>
          <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
          <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
        </item>
      </eventsSet>
    </item>
  </instanceStatusSet>

```

```
<item>
  <instanceId>i-2a2b3c4d</instanceId>
  <availabilityZone>us-east-1d</availabilityZone>
  <instanceState>
    <code>l6</code>
    <name>running</name>
  </instanceState>
  <systemStatus>
    <status>ok</status>
    <details>
      <item>
        <name>reachability</name>
        <status>passed</status>
      </item>
    </details>
  </systemStatus>
  <instanceStatus>
    <status>ok</status>
    <details>
      <item>
        <name>reachability</name>
        <status>passed</status>
      </item>
    </details>
  </instanceStatus>
  <eventsSet>
    <item>
      <code>instance-reboot</code>
      <description>The instance is scheduled for a reboot</description>

      <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
      <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
    </item>
  </eventsSet>
</item>
<item>
  <instanceId>i-3a2b3c4d</instanceId>
  <availabilityZone>us-east-1c</availabilityZone>
  <instanceState>
    <code>l6</code>
    <name>running</name>
  </instanceState>
  <systemStatus>
    <status>ok</status>
    <details>
      <item>
        <name>reachability</name>
        <status>passed</status>
      </item>
    </details>
  </systemStatus>
  <instanceStatus>
    <status>ok</status>
    <details>
      <item>
        <name>reachability</name>
        <status>passed</status>
      </item>
    </details>
  </instanceStatus>
  <eventsSet>
    <item>
      <code>instance-reboot</code>
      <description>The instance is scheduled for a reboot</description>

      <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
      <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
    </item>
  </eventsSet>
</item>
```

```
        </details>
      </instanceStatus>
    </item>
    <item>
      <instanceId>i-4a2b3c4d</instanceId>
      <availabilityZone>us-east-1c</availabilityZone>
      <instanceState>
        <code>l6</code>
        <name>running</name>
      </instanceState>
      <systemStatus>
        <status>ok</status>
        <details>
          <item>
            <name>reachability</name>
            <status>passed</status>
          </item>
        </details>
      </systemStatus>
      <instanceStatus>
        <status>insufficient-data</status>
        <details>
          <item>
            <name>reachability</name>
            <status>insufficient-data</status>
          </item>
        </details>
      </instanceStatus>
    </item>
  </instanceStatusSet>
</DescribeInstanceStatusResponse>
```

# DescribeInternetGateways

## Description

Describes one or more of your Internet gateways.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InternetGatewayId.n*

One or more Internet gateway IDs.

Type: String

Default: Describes all your Internet gateways.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Internet gateways. For example, you can use a filter to specify that you're interested in the Internet gateways with particular tags. You can specify multiple values for a filter. The response includes information for an Internet gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Internet gateways that are attached to a specific VPC and have a specific tag. The response includes information for an Internet gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### *attachment.state*

The current state of the attachment between the gateway and the VPC. Returned only if a VPC is attached.

Type: String

Valid value: `available`

`attachment.vpc-id`

The ID of an attached VPC.

Type: String

`internet-gateway-id`

The ID of the Internet gateway.

Type: String

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag:key=value`

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag Purpose=X, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag Purpose=X or the tag Purpose=Y, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

The following elements are returned in a `DescribeInternetGatewaysResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`internetGatewaySet`

A list of Internet gateways, each one wrapped in an `item` element.

Type: [InternetGatewayType](#) (p. 532)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInternetGatewayID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes your Internet gateways.

```
https://ec2.amazonaws.com/?Action=DescribeInternetGateways
&AUTHPARAMS
```

### Example Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGatewaySet>
    <item>
      <internetGatewayId>igw-eaad4883EXAMPLE</internetGatewayId>
      <attachmentSet>
        <item>
          <vpcId>vpc-11ad4878</vpcId>
          <state>available</state>
        </item>
      </attachmentSet>
      <tagSet/>
    </item>
  </internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

### Related Actions

- [CreateInternetGateway](#) (p. 76)
- [DeleteInternetGateway](#) (p. 141)
- [DetachInternetGateway](#) (p. 26)
- [DetachInternetGateway](#) (p. 358)



# DescribeKeyPairs

## Description

Describes one or more of your key pairs.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *KeyName.n*

One or more key pair names.

Type: String

Default: Describes all your key pairs.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain key pairs. For example, you can use a filter to specify that you're interested in key pairs whose names include the string `Dave`. You can specify multiple values for a filter. The response includes information for a key pair only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify key pairs whose names include the string `Dave` and whose fingerprint is a specific value. The response includes information for a key pair only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### `fingerprint`

The fingerprint of the key pair.

Type: String

### `key-name`

The name of the key pair.

Type: String

## Response Elements

The following elements are returned in a `DescribeKeyPairsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`keySet`

A list of key pairs, each one wrapped in an `item` element.

Type: [DescribeKeyPairsResponseItem](#) (p. 500)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidKeyPair.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the keypair with name `my-key-pair`.

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS
```

### Example Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>my-key-pair</keyName>
      <keyFinger
print>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</keyFinger
print>
      </item>
    </keySet>
  </DescribeKeyPairsResponse>
```

### Example Request

This example filters the response to include only key pairs whose names include the string `Dave`.

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS
```

## Related Actions

- [CreateKeyPair](#) (p. 78)
- [ImportKeyPair](#) (p. 385)
- [DeleteKeyPair](#) (p. 143)

# DescribeNetworkAcls

## Description

Describes one or more of your network ACLs.

For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkAclId.n*

One or more network ACL IDs.

Type: String

Default: Describes all your network ACLs.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain ACLs. For example, you can use a filter to specify that you're interested in the ACLs associated with a particular subnet. You can specify multiple values for a filter. The response includes information for an ACL only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify ACLs that are associated with a specific subnet and have an egress entry that denies traffic to a specific port. The response includes information for an ACL only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### `association.association-id`

The ID of an association ID for the ACL.

Type: String

`association.network-acl-id`  
The ID of the network ACL involved in the association.  
Type: String

`association.subnet-id`  
The ID of the subnet involved in the association.  
Type: String

`default`  
Indicates whether the ACL is the default network ACL for the VPC.  
Type: Boolean

`entry.cidr`  
The CIDR range specified in the entry.  
Type: String

`entry.egress`  
Indicates whether the entry applies to egress traffic.  
Type: Boolean

`entry.icmp.code`  
The ICMP code specified in the entry, if any.  
Type: Integer

`entry.icmp.type`  
The ICMP type specified in the entry, if any.  
Type: Integer

`entry.port-range.from`  
The start of the port range specified in the entry.  
Type: Integer

`entry.port-range.to`  
The end of the port range specified in the entry.  
Type: Integer

`entry.protocol`  
The protocol specified in the entry.  
Type: String  
Valid values: `tcp` | `udp` | `icmp` or a protocol number

`entry.rule-action`  
Allows or denies the matching traffic.  
Type: String  
Valid values: `allow` | `deny`

`entry.rule-number`  
The number of an entry (in other words, rule) in the ACL's set of entries.  
Type: Integer

`network-acl-id`  
The ID of the network ACL.  
Type: String

`tag-key`  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.  
Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag: key=value`

The key/value combination of a tag assigned to the resource, where `tag: key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`vpc-id`

The ID of the VPC for the network ACL.

Type: String

## Response Elements

The following elements are returned in a `DescribeNetworkAclsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`networkAclSet`

A list of network ACLs, each one wrapped in an `item` element.

Type: [NetworkAclType](#) (p. 540)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidNetworkAclID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes all your network ACLs.

```
https://ec2.amazonaws.com/?Action=DescribeNetworkAcls
&AUTHPARAMS
```

### Example Response

The first ACL in the returned list is the VPC's default ACL.

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <networkAclSet>
    <item>
      <networkAclId>acl-5566953c</networkAclId>
      <vpcId>vpc-5266953b</vpcId>
      <default>true</default>
      <entrySet>
        <item>
          <ruleNumber>100</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>allow</ruleAction>
          <egress>true</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
        </item>
        <item>
          <ruleNumber>32767</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>deny</ruleAction>
          <egress>true</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
        </item>
        <item>
          <ruleNumber>100</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>allow</ruleAction>
          <egress>false</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
        </item>
        <item>
          <ruleNumber>32767</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>deny</ruleAction>
          <egress>false</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
        </item>
      </entrySet>
      <associationSet/>
      <tagSet/>
    </item>
    <item>
      <networkAclId>acl-5d659634</networkAclId>
      <vpcId>vpc-5266953b</vpcId>
      <default>false</default>
      <entrySet>
        <item>
          <ruleNumber>110</ruleNumber>
          <protocol>6</protocol>
          <ruleAction>allow</ruleAction>
          <egress>true</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
          <portRange>
            <from>49152</from>
            <to>65535</to>
          </portRange>
        </item>
      </entrySet>
    </item>
  </networkAclSet>

```

```
<ruleNumber>32767</ruleNumber>
<protocol>all</protocol>
<ruleAction>deny</ruleAction>
<egress>true</egress>
<cidrBlock>0.0.0.0/0</cidrBlock>
</item>
<item>
  <ruleNumber>110</ruleNumber>
  <protocol>6</protocol>
  <ruleAction>allow</ruleAction>
  <egress>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
  <portRange>
    <from>80</from>
    <to>80</to>
  </portRange>
</item>
<item>
  <ruleNumber>120</ruleNumber>
  <protocol>6</protocol>
  <ruleAction>allow</ruleAction>
  <egress>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
  <portRange>
    <from>443</from>
    <to>443</to>
  </portRange>
</item>
<item>
  <ruleNumber>32767</ruleNumber>
  <protocol>all</protocol>
  <ruleAction>deny</ruleAction>
  <egress>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
</item>
</entrySet>
<associationSet>
  <item>
    <networkAclAssociationId>aclassoc-5c659635</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-ff669596</subnetId>
  </item>
  <item>
    <networkAclAssociationId>aclassoc-c26596ab</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-f0669599</subnetId>
  </item>
</associationSet>
<tagSet/>
</item>
</networkAclSet>
</DescribeNetworkAclsResponse>
```

## Related Actions

- [CreateNetworkAcl](#) (p. 81)
- [DeleteNetworkAcl](#) (p. 145)



- [ReplaceNetworkAclAssociation](#) (p. 429)
- [CreateNetworkAclEntry](#) (p. 83)
- [DeleteNetworkAclEntry](#) (p. 147)
- [ReplaceNetworkAclEntry](#) (p. 431)

# DescribeNetworkInterfaceAttribute

## Description

Describes the specified attribute of the specified network interface. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute of the network interface.

Type: String

Valid values: `description` | `groupSet` | `sourceDestCheck` | `attachment`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeNetworkInterfaceAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `networkInterfaceId`

The ID of the network interface.

Type: `xsd:string`

### `description`

The description of the network interface.

Type: `xsd:string`

### `sourceDestCheck`

Indicates whether source/destination checking is enabled.

Type: `xsd:boolean`

### `groupSet`

The security groups associated with the network interface.

Type: [GroupItemType \(p. 515\)](#)

### `attachment`

The attachment (if any) of the network interface.

Type: [NetworkInterfaceAttachmentType \(p. 541\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example describes the `sourceDestCheck` attribute of the specified network interface.

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

### Example Response

```
<DescribeNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2014-09-01/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface \(p. 28\)](#)
- [DetachNetworkInterface \(p. 360\)](#)
- [CreateNetworkInterface \(p. 86\)](#)
- [DeleteNetworkInterface \(p. 149\)](#)
- [DescribeNetworkInterfaces \(p. 253\)](#)
- [ModifyNetworkInterfaceAttribute \(p. 398\)](#)
- [ResetNetworkInterfaceAttribute \(p. 454\)](#)

# DescribeNetworkInterfaces

## Description

Describes one or more of your network interfaces.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId.n*

One or more network interface IDs.

Type: String

Default: Describes all your network interfaces.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain network interfaces. For example, you can use a filter to specify that you're interested in network interfaces launched in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for a network interface only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify network interfaces in a specific Availability Zone, and that have a specific owner ID. The response includes information for a network interface only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### `addresses.private-ip-address`

The private IP addresses associated with the network interface.

Type: String

### `addresses.primary`

Whether the private IP address is the primary IP address associated with the network interface.

Type: Boolean

`addresses.association.public-ip`  
The association ID returned when the network interface was associated with the Elastic IP address.  
Type: String

`addresses.association.owner-id`  
The owner ID of the addresses associated with the network interface.  
Type: String

`association.association-id`  
The association ID returned when the network interface was associated with an IP address.  
Type: String

`association.allocation-id`  
The allocation ID returned when you allocated the Elastic IP address for your network interface.  
Type: String

`association.ip-owner-id`  
The owner of the Elastic IP address associated with the network interface.  
Type: String

`association.public-ip`  
The address of the Elastic IP address bound to the network interface.  
Type: String

`association.public-dns-name`  
The public DNS name for the network interface.  
Type: String

`attachment.attachment-id`  
The ID of the interface attachment.  
Type: String

`attachment.instance-id`  
The ID of the instance to which the network interface is attached.  
Type: String

`attachment.instance-owner-id`  
The owner ID of the instance to which the network interface is attached.  
Type: String

`attachment.device-index`  
The device index to which the network interface is attached.  
Type: Integer

`attachment.status`  
The status of the attachment.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

`attachment.attach.time`  
The time that the network interface was attached to an instance.  
Type: DateTime

`attachment.delete-on-termination`  
Indicates whether the attachment is deleted when an instance is terminated.  
Type: Boolean

`availability-zone`  
The Availability Zone of the network interface.  
Type: String

`description`  
The description of the network interface.

Type: String	
group-id	The ID of a security group associated with the network interface.
Type: String	
group-name	The name of a security group associated with the network interface.
Type: String	
mac-address	The MAC address of the network interface.
Type: String	
network-interface-id	The ID of the network interface.
Type: String	
owner-id	The AWS account ID of the network interface owner.
Type: String	
private-ip-address	The private IP address or addresses of the network interface.
Type: String	
private-dns-name	The private DNS name of the network interface.
Type: String	
requester-id	The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
Type: String	
requester-managed	Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).
Type: Boolean	
source-dest-check	Indicates whether the network interface performs source/destination checking. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the network interface to perform Network Address Translation (NAT) in your VPC.
Type: Boolean	
status	The status of the network interface. If the network interface is not attached to an instance, the status shows <code>available</code> ; if a network interface is attached to an instance the status shows <code>in-use</code> .
Type: String	
Valid values:	<code>available</code>   <code>in-use</code>
subnet-id	The ID of the subnet for the network interface.
Type: String	
tag-key	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>"tag-key=Purpose"</code> and the filter <code>"tag-value=X"</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose</code> is <code>X</code> , see the <code>tag: <i>key</i>=<i>value</i></code> filter.
	For more information about tags, see <a href="#">Tagging Your Resources</a> in the <i>Amazon EC2 User Guide for Linux Instances</i> .

Type: String

tag-value

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

tag: *key=value*

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

vpc-id

The ID of the VPC for the network interface.

Type: String

## Response Elements

The following elements are returned in a `DescribeNetworkInterfacesResponse` element.

requestId

The ID of the request.

Type: `xsd:string`

networkInterfaceSet

Information about the network interfaces, each one wrapped in an `item` element.

Type: [NetworkInterfaceType](#) (p. 543)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidNetworkInterfaceId.Malformed](#) (p. 619)
- [InvalidNetworkInterfaceID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes all your network interfaces.

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces
&AUTHPARAMS
```

## Example Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
  <networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>
      <subnetId>subnet-c53c87ac</subnetId>
      <vpcId>vpc-cc3c87a5</vpcId>
      <availabilityZone>ap-southeast-1b</availabilityZone>
      <description/>
      <ownerId>053230519467</ownerId>
      <requesterManaged>>false</requesterManaged>
      <status>in-use</status>
      <macAddress>02:81:60:cb:27:37</macAddress>
      <privateIpAddress>10.0.0.146</privateIpAddress>
      <sourceDestCheck>>true</sourceDestCheck>
      <groupSet>
        <item>
          <groupId>sg-3f4b5653</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <attachment>
        <attachmentId>eni-attach-6537fc0c</attachmentId>
        <instanceId>i-22197876</instanceId>
        <instanceOwnerId>053230519467</instanceOwnerId>
        <deviceIndex>0</deviceIndex>
        <status>attached</status>
        <attachTime>2012-07-01T21:45:27.000Z</attachTime>
        <deleteOnTermination>>true</deleteOnTermination>
      </attachment>
      <tagSet/>
      <privateIpAddressesSet>
        <item>
          <privateIpAddress>10.0.0.146</privateIpAddress>
          <primary>>true</primary>
        </item>
        <item>
          <privateIpAddress>10.0.0.148</privateIpAddress>
          <primary>>false</primary>
        </item>
        <item>
          <privateIpAddress>10.0.0.150</privateIpAddress>
          <primary>>false</primary>
        </item>
      </privateIpAddressesSet>
    </item>
    <item>
      <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
      <subnetId>subnet-cd8a35a4</subnetId>
      <vpcId>vpc-f28a359b</vpcId>
      <availabilityZone>ap-southeast-1b</availabilityZone>
      <description>Primary network interface</description>
      <ownerId>053230519467</ownerId>
      <requesterManaged>>false</requesterManaged>
    </item>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```



```
<status>in-use</status>
<macAddress>02:78:d7:00:8a:1e</macAddress>
<privateIpAddress>10.0.1.233</privateIpAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-a2a0b2ce</groupId>
    <groupName>quick-start-1</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-a99c57c0</attachmentId>
  <instanceId>i-886401dc</instanceId>
  <instanceOwnerId>053230519467</instanceOwnerId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2012-06-27T20:08:44.000Z</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<tagSet/>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.1.233</privateIpAddress>
    <primary>true</primary>
  </item>
  <item>
    <privateIpAddress>10.0.1.20</privateIpAddress>
    <primary>>false</primary>
  </item>
</privateIpAddressesSet>
</item>
</networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 28)
- [DetachNetworkInterface](#) (p. 360)
- [CreateNetworkInterface](#) (p. 86)
- [DeleteNetworkInterface](#) (p. 149)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ResetNetworkInterfaceAttribute](#) (p. 454)

# DescribePlacementGroups

## Description

Describes one or more of your placement groups. For more information about placement groups and cluster instances, see [Cluster Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupName.n*

One or more placement group names.

Type: String

Default: Describes all your placement groups, or only those otherwise specified.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify a filter so that the response includes information for only certain placement groups. For example, you can use a filter to specify that you're interested in groups in the `deleted` state. You can specify multiple values for a filter. The response includes information for a placement group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's that are in the `deleted` state and have a name that includes the string `Project`. The response includes information for a group only if it matches all your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### `group-name`

The name of the placement group.

Type: String

### `state`

The state of the placement group.

Type: String

Valid values: pending | available | deleting | deleted

strategy

The strategy of the placement group.

Type: String

Valid value: cluster

## Response Elements

The following elements are returned in a `DescribePlacementGroupsResponse` element.

requestId

The ID of the request.

Type: xsd:string

placementGroupSet

A list of placement groups, each one wrapped in an `item` element.

Type: [PlacementGroupInfoType](#) (p. 544)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidPlacementGroup.Unknown](#) (p. 619)

## Examples

### Example Request

This example describes the placement group named XYZ-cluster.

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=XYZ-cluster
&AUTHPARAMS
```

### Example Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>XYZ-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## Example Request

This example filters the response to include only placement groups that include the string `Project` in the name.

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## Related Actions

- [CreatePlacementGroup](#) (p. 91)
- [DeletePlacementGroup](#) (p. 151)

# DescribeRegions

## Description

Describes one or more regions that are currently available to you.

For a list of the regions supported by Amazon EC2, see [Regions and Endpoints](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RegionName.n*

One or more region names.

Type: String

Default: Describes all regions available to the account.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain regions.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### *endpoint*

The endpoint of the region (for example, `ec2.us-east-1.amazonaws.com`).

Type: String

### *region-name*

The name of the region.

Type: String

## Response Elements

The following elements are returned in a `DescribeRegionsResponse` element.

requestId

The ID of the request.

Type: xsd:string

regionInfo

A list of regions, each one wrapped in an `item` element.

Type: [RegionItemType](#) (p. 552)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example displays information about all regions.

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&AUTHPARAMS
```

### Example Request

This example displays information about just the specified regions.

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1
&AUTHPARAMS
```

### Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <regionInfo>
    <item>
      <regionName>us-east-1</regionName>
      <regionEndpoint>ec2.us-east-1.amazonaws.com</regionEndpoint>
    </item>
    <item>
      <regionName>eu-west-1</regionName>
      <regionEndpoint>ec2.eu-west-1.amazonaws.com</regionEndpoint>
    </item>
  </regionInfo>
</DescribeRegionsResponse>
```

## Example Request

This example displays information about all regions that have the string `ap` in the endpoint.

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&Filter.1.Name=endpoint
&Filter.1.Value.1=*ap*
&AUTHPARAMS
```

## Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <regionInfo>
    <item>
      <regionName>ap-southeast-1</regionName>
      <regionEndpoint>ec2.ap-southeast-1.amazonaws.com</regionEndpoint>
    </item>
  </regionInfo>
</DescribeRegionsResponse>
```

## Related Actions

- [DescribeAvailabilityZones](#) (p. 187)
- [RunInstances](#) (p. 464)

# DescribeReservedInstances

## Description

Describes one or more of the Reserved Instances that you purchased.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance use. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*. You determine the type of the Reserved Instances offerings by including the optional *offeringType* parameter. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

For more information about Reserved Instances, see [Reserved Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ReservedInstancesId.n*

One or more Reserved Instance IDs.

Type: String

Default: Describes all your Reserved Instances, or only those otherwise specified.

Required: No

### *offeringType*

The Reserved Instance offering type.

Type: String

Valid values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization`

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify a filter so that the response includes information for only certain Reserved Instances. For example, you can use a filter to specify that you're interested in Reserved Instances in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for a Reserved Instance only if it matches at least one of the filter values that you specified.



You can specify multiple filters; for example, specify Reserved Instances that are in a specific Availability Zone and have a specific tag. The response includes information for a Reserved Instance only if it matches all of the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`availability-zone`

The Availability Zone where the Reserved Instance can be used.

Type: String

`duration`

The duration of the Reserved Instance (one year or three years), in seconds.

Type: Long

Valid values: 31536000 | 94608000

`end`

The time when the Reserved Instance expires.

Type: DateTime

`fixed-price`

The purchase price of the Reserved Instance (for example, 9800.0).

Type: Double

`instance-type`

The instance type on which the Reserved Instance can be used.

Type: String

`product-description`

The product description of the Reserved Instance.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

`reserved-instances-id`

The ID of the Reserved Instance.

Type: String

`start`

The time at which the Reserved Instance purchase request was placed (for example, 2010-08-07T11:54:42.000Z).

Type: DateTime

`state`

The state of the Reserved Instance.

Type: String

Valid values: pending-payment | active | payment-failed | retired

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag: key=value`

The key/value combination of a tag assigned to the resource, where `tag: key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`usage-price`

The usage price of the Reserved Instance, per hour (for example, `0.84`).

Type: Double

## Response Elements

The following elements are returned in a `DescribeReservedInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`reservedInstancesSet`

A list of Reserved Instances, each one wrapped in an `item` element.

Type: [DescribeReservedInstancesResponseSetItemType](#) (p. 504)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example describes Reserved Instances owned by your account.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&AUTHPARAMS
```

## Example Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    ...
    <item>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>61.0</fixedPrice>
      <usagePrice>0.034</usagePrice>
      <instanceCount>3</instanceCount>
      <productDescription>Linux/UNIX</productDescription>
      <state>active</state>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

## Example Request

This example filters the response to include only one-year, `m1.small` Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to `Linux/UNIX (Amazon VPC)`.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

## Related Actions

- [PurchaseReservedInstancesOffering](#) (p. 412)
- [DescribeReservedInstancesOfferings](#) (p. 277)

# DescribeReservedInstancesListings

## Description

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace. This call returns information, such as the ID of the Reserved Instance with which a listing is associated.

The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price to receive for them. Your Reserved Instances are then listed in the Reserved Instance Marketplace and are available for purchase.

As a buyer, you specify the configuration of the Reserved Instance to purchase, and the Marketplace matches what you're searching for with what's available. The Marketplace first sells the lowest priced Reserved Instances to you, and continues to sell available Reserved Instance listings to you until your demand is met. You are charged based on the total price of all of the listings that you purchase.

For more information about Reserved Instance Marketplace, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ReservedInstancesListingId.n*

The information about the Reserved Instance listing wrapped in an `item` element.

Type: [DescribeReservedInstancesListingSetItemType \(p. 501\)](#)

Default: None

Required: No

### *ReservedInstancesId.n*

The set of Reserved Instances IDs which are used to see associated listings.

Type: [DescribeReservedInstancesSetItemType \(p. 506\)](#)

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances listings, even though you can use other options instead.

For example, you can use a filter or an option to get the listing of Reserved Instances that are in an active state. You can also specify multiple options or filters (for example, to limit the response to the Reserved Instances listings that are in the closed state with a specific status message). The response includes information for a listing only if it matches all options or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`status`  
Status of the Reserved Instance listing.  
Valid values: `pending` | `active` | `cancelled` | `closed`  
Type: String

`status-message`  
Reason for the status.  
Type: String

`reserved-instances-listing-id`  
The ID of the Reserved Instances listing.  
Type: String

`reserved-instances-id`  
The ID of the Reserved Instances.  
Type: String

## Response Elements

The following elements are returned in a `DescribeReservedInstancesListingsResponseType` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`reservedInstancesListingsSet`  
The Reserved Instance listing information wrapped in an `item` element.  
Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 500)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [OptInRequired](#) (p. 619)

## Examples

### Example Request

This example shows all the listings associated with your account.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings
&AUTHPARAMS
```

### Example Response

```
<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942cEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <createDate>2012-07-06T19:35:29.000Z</createDate>
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>20</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>8</term>
          <price>480.0</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
        <item>
          <term>7</term>
          <price>420.0</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

```
        <term>6</term>
        <price>360.0</price>
        <currencyCode>USD</currencyCode>
        <active>active</active>
    </item>
    <item>
        <term>5</term>
        <price>300.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>4</term>
        <price>240.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>3</term>
        <price>180.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>2</term>
        <price>120.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>1</term>
        <price>60.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
</priceSchedules>
<tagSet/>
<clientToken>myclienttoken1</clientToken>
</item>
</reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

## Related Actions

- [CancelReservedInstancesListing \(p. 51\)](#)
- [CreateReservedInstancesListing \(p. 93\)](#)

# DescribeReservedInstancesModifications

## Description

Describes the modifications made to your Reserved Instances. If no parameter is specified, information about all your Reserved Instances modification requests is returned. If a modification ID is specified, only information about the specific modification is returned.

For more information, see [Modifying Reserved Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*reservedInstancesModificationId.n*

IDs for the submitted modification request.

Type: String

Default: None

Required: No

*nextToken*

The token for the next page of data.

Type: String

Default: None

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances modifications, even though you can also use other options instead.

For example, you can use a filter or an option to get the listing of Reserved Instances that are in an active state. You can also specify multiple options or filters (for example, to limit the response to the Reserved Instances listings that are in the closed state with a specific status message). The response includes information for a listing only if it matches all options or filters. If there's no match, no special message is returned; the response is simply empty.



You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`client-token`

The idempotency token for the modification request.

Type: String

`create-date`

Time when the modification request was created.

Type: DateTime

`effective-date`

Time when the modification becomes effective.

Type: DateTime

`modification-result.reserved-instances-id`

ID for the Reserved Instances created as part of the modification request. This ID is only available when the status of the modification is fulfilled.

Type: String

`modification-result.target-configuration.availability-zone`

The Availability Zone for the new Reserved Instances.

Type: String

`modification-result.target-configuration.instance-count`

The number of new Reserved Instances.

Type: Integer

`modification-result.target-configuration.instance-type`

Instance type of the new Reserved Instances.

Type: String

`modification-result.target-configuration.platform`

The network platform of the new Reserved Instances.

Type: String

Valid values: EC2-Classic, EC2-VPC

`reserved-instances-id`

The ID of the Reserved Instances modified.

Type: String

`reserved-instances-modification-id`

ID of the modification request.

Type: String

`status`

The status of the Reserved Instances modification request.

Type: String

Valid values: `processing` | `fulfilled` | `failed`

`status-message`

The reason for the status.

Type: String

`update-date`

Time when the modification request was last updated.

Type: DateTime

## Response Elements

The following elements are returned in a `DescribeReservedInstancesModificationsResponseType` element.

`requestId`

The unique ID for the request.

Type: `xsd:string`

`reservedInstancesModifications`

The Reserved Instance modification information.

Type: [DescribeReservedInstancesModificationsResponseSetItem](#) (p. 502)

`nextToken`

The token for the next page of data.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInput](#) (p. 619)

## Examples

### Example Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications&AUTH  
PARAMS
```

### Example Response

```
<DescribeReservedInstancesModificationsResponse xmlns='http://ec2.amazon  
aws.com/doc/2013-08-15/'>  
  <requestId>eb4a6e3c-3689-445c-b536-19e38df35898</requestId>  
  <reservedInstancesModificationsSet>  
    ...  
    <item>  
      <reservedInstancesModificationId>rimod-49b9433e-fdc7-464a-a6e5-  
9dabceexample</reservedInstancesModificationId>  
      <reservedInstancesSet>  
        <item>  
          <reservedInstancesId>2567o137-8a55-48d6-82fb-  
7258506bb497</reservedInstancesId>  
        </item>  
      </reservedInstancesSet>  
      <modificationResultSet>  
        <item>  
          <reservedInstancesId>9d5cb137-5d65-4479-b4ac-8c337example</re  
servedInstancesId>
```

```
        <targetConfiguration>
          <availabilityZone>us-east-1b</availabilityZone>
          <platform>EC2-VPC</platform>
          <instanceCount>1</instanceCount>
          <instanceType>m1.small</instanceType>
        </targetConfiguration>
      </item>
    </modificationResultSet>
    <createDate>2013-09-02T21:20:19.637Z</createDate>
    <updateDate>2013-09-02T21:38:24.143Z</updateDate>
    <effectiveDate>2013-09-02T21:00:00.000Z</effectiveDate>
    <status>fulfilled</status>
    <clientToken>token-f5b56c05-09b0-4d17-8d8c-c75d8a67b806</clientToken>

  </item>
  ...
</reservedInstancesModificationsSet>
</DescribeReservedInstancesModificationsResponse>
```

## Example Request

This example filters the response to include only Reserved Instances modification requests with status processing.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&Filter.1.Name=status
&Filter.1.Value.1=processing
&AUTHPARAMS
```

## Related Actions

- [ModifyReservedInstances](#) (p. 400)
- [DescribeReservedInstances](#) (p. 265)

# DescribeReservedInstancesOfferings

## Description

Describes Reserved Instance offerings that are available for purchase. With Amazon EC2 Reserved Instances, you purchase the right to launch Amazon EC2 instances for a period of time. During that time period, you do not receive insufficient capacity errors, and you pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*. You determine the type of the Reserved Instances offerings by including the optional *offeringType* parameter when calling `DescribeReservedInstancesOfferings`. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` only lists information about the Medium Utilization Reserved Instance offering type.

For information about Reserved Instances pricing, see [Understanding Reserved Instance Pricing Tiers](#) in the *Amazon EC2 User Guide for Linux Instances*. For more information about Reserved Instances, see [Reserved Instances](#) also in the *Amazon EC2 User Guide for Linux Instances*.

Starting with the 2012-08-15 API version, AWS offers the Reserved Instance Marketplace, where you can buy and sell Reserved Instances. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS and Reserved Instance Marketplace offerings. If you are using tools that predate the 2012-08-15 API version, `DescribeReservedInstancesOfferings` only lists information about the Amazon EC2 Reserved Instance offerings.

For more information about the Reserved Instance Marketplace, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

*ReservedInstancesOfferingId.n*

One or more Reserved Instances offering IDs.

Type: String

Default: None

Required: No

*InstanceType*

The Amazon EC2 instance type on which the Reserved Instance can be used. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

*AvailabilityZone*

The Availability Zone in which the Reserved Instance can be used.

Type: String

Default: None

Required: No

*ProductDescription*

The Reserved Instance description. Instances that include (Amazon VPC) in the description are for use with Amazon VPC.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Default: None

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

*InstanceTenancy*

The tenancy of the Reserved Instance offering. A Reserved Instance with tenancy of `dedicated` runs on single-tenant hardware and can only be launched within a VPC.

Type: String

Valid values: `default` | `dedicated`

Default: `default`

Required: No

*OfferingType*

The Reserved Instance offering type.

Type: String

Valid values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization`

Default: None

Required: No

*IncludeMarketplace*

Include Marketplace offerings in the response.

Type: Boolean

Default: `true`

Required: No

*MinDuration*

The minimum duration (in seconds) to filter when searching for offerings.

Type: Long

Default: 2592000 (1 month)

Required: No

*MaxDuration*

The maximum duration (in seconds) to filter when searching for offerings.

Type: Long

Default: 94608000 (3 years)

Required: No

*MaxInstanceCount*

The maximum number of instances to filter when searching for offerings.

Type: Integer

Default: 20

Required: No

*NextToken*

The token to use when requesting the next paginated set of offerings.

Type: String

Default: First page of results if the string is empty.

Required: No

*MaxResults*

The maximum number of offerings to return.

Type: Integer

Default: 100

Maximum: 100

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances offerings, even though you can use other options instead.

For example, you could use an option or a filter to get the offerings for a specific instance type. You can specify multiple options or filters (for example, limit the response to the `m2.xlarge` instance type, and only for Windows instances). The response includes information for an offering only if it matches all options or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`availability-zone`

The Availability Zone where the Reserved Instance can be used.

Type: String

`duration`

The duration of the Reserved Instance (for example, one year or three years), in seconds.

Type: Long

Valid values: 31536000 | 94608000

`fixed-price`

The purchase price of the Reserved Instance (for example, 9800.0).

Type: Double

`instance-type`

The instance type on which the Reserved Instance can be used.

Type: String

`marketplace`

Set to `true` to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from AWS and Reserved Instance Marketplace are listed.

Type: Boolean

`product-description`  
The description of the Reserved Instance.  
Type: String  
Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

`reserved-instances-offering-id`  
The Reserved Instances offering ID.  
Type: String

`usage-price`  
The usage price of the Reserved Instance, per hour (for example, 0.84).  
Type: Double

## Response Elements

The following elements are returned in a `DescribeReservedInstancesOfferingsResponse` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`reservedInstancesOfferingsSet`  
A list of Reserved Instances offerings. Each offering's information is wrapped in an `item` element.  
Type: [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 503)

`nextToken`  
The next paginated set of results to return.  
Type: String

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/Unix, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2014-09-01
&AUTHPARAMS
```

**Note**

When using the Query API, all strings must be URL-encoded.

This is the response listing Reserved Instance Marketplace offerings only.

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>90720000</duration>
      <fixedPrice>96.03</fixedPrice>
      <usagePrice>0.027</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>96.03</price>
          <count>1</count>
        </item>
      </pricingDetailsSet>
    </item>
    <item>
      <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</reservedInstancesOfferingId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>28512000</duration>
      <fixedPrice>61.0</fixedPrice>
      <usagePrice>0.034</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.29</amount>
        </item>
      </recurringCharges>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>61.0</price>
          <count>2</count>
        </item>
      </pricingDetailsSet>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```



## Example Describing AWS Offerings Only

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS Reserved Instances and Reserved Instance Marketplace offerings. If you want a list of AWS offerings only, set `IncludeMarketplace` to `false`.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&Version=2014-09-01
&AUTHPARAMS
```

## Example Using MaxResults and nextToken to Manage Results

API version 2012-08-15 provides pagination support, which means that you can query the results sequentially and in parts. Use `MaxResults` to specify the maximum number of results that are returned in the response. Then, each paginated response contains a `nextToken`, which can be provided as input to a subsequent `DescribeReservedInstancesOfferings` call to fetch the next page.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&Version=2014-09-01
&AUTHPARAMS
```

The response should look similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</re
reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>1200.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Heavy Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.052</amount>
        </item>
      </recurringCharges>
      <marketplace>>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>e5a2ff3b-a4f3-477c-8928-dbd00EXAMPLE</re
reservedInstancesOfferingId>
```

```
<instanceType>m1.large</instanceType>
<availabilityZone>us-east-1a</availabilityZone>
<duration>94608000</duration>
<fixedPrice>1000.0</fixedPrice>
<usagePrice>0.076</usagePrice>
<productDescription>Linux/UNIX (Amazon VPC)</productDescription>
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>Medium Utilization</offeringType>
<recurringCharges/>
<marketplace>>false</marketplace>
<pricingDetailsSet/>
</item>
...
</reservedInstancesOfferingsSet>
<nextToken>h/C8YKPBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

Then, you can use the `NextToken` to fetch the next page. The request should look like the following example. Make sure that you use URL encoding for the `NextToken` value.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&NextToken=h%2FC8YKPBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&Version=2014-09-01
&AUTHPARAMS
```

The response should be similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>652900ca-902c-42fa-b8ae-da67bEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>438012d3-496e-4ab3-b1f6-38ffeEXAMPLE</re
reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>425.2</fixedPrice>
      <usagePrice>0.124</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>248e7b75-579e-4599-a34d-cb6aaEXAMPLE</re
reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>780.0</fixedPrice>
```

```
<usagePrice>0.0</usagePrice>
<productDescription>Linux/UNIX</productDescription>
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>Heavy Utilization</offeringType>
<recurringCharges>
  <item>
    <frequency>Hourly</frequency>
    <amount>0.064</amount>
  </item>
</recurringCharges>
<marketplace>>false</marketplace>
<pricingDetailsSet/>
</item>
...
</reservedInstancesOfferingsSet>
<nextToken>69AJRhM9bxVUF8YCKAs2HsQjyqa246eTkVv23eNFTKw=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

This example describes available Reserved Instance offerings.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&AUTHPARAMS
```

## Example Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2014-09-01/">
  <requestId>48692a1d-3036-48fd-8c0e-d34681b97efdEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>248e7b75-c83a-48c1-bcf7-
b7f03e9c43feEXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>700.0</fixedPrice>
      <usagePrice>0.06</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Medium Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

This example filters the response to include only one-year, `m1.small` or `m1.large` Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to `Linux/UNIX (Amazon VPC)`.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.2.Value.2=m1.large
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

## Related Actions

- [PurchaseReservedInstancesOffering](#) (p. 412)
- [DescribeReservedInstances](#) (p. 265)

# DescribeRouteTables

## Description

Describes one or more of your route tables.

For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId.n*

One or more route table IDs.

Type: String

Default: Describes all your route tables.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain tables. For example, you can use a filter to specify that you're interested in the tables associated with a particular subnet. You can specify multiple values for a filter. The response includes information for a table only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify tables that have a specific route and are associated with a specific subnet. The response includes information for a table only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

`association.route-table-association-id`

The ID of an association ID for the route table.

Type: String

`association.route-table-id`

The ID of the route table involved in the association.

Type: String

`association.subnet-id`  
The ID of the subnet involved in the association.  
Type: String

`association.main`  
Indicates whether the route table is the main route table for the VPC.  
Type: Boolean

`route-table-id`  
The ID of the route table.  
Type: String

`route.destination-cidr-block`  
The CIDR range specified in a route in the table.  
Type: String

`route.gateway-id`  
The ID of a gateway specified in a route in the table.  
Type: String

`route.instance-id`  
The ID of an instance specified in a route in the table.  
Type: String

`route.vpc-peering-connection-id`  
The ID of a VPC peering connection specified in a route in the table.  
Type: String

`route.origin`  
Describes how the route was created.  
Type: String  
Valid values: `CreateRouteTable` | `CreateRoute` | `EnableVgwRoutePropagation`  
`CreateRouteTable` indicates that the route was automatically created when the route table was created.  
`CreateRoute` indicates that the route was manually added to the route table.  
`EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.

`route.state`  
The state of a route in the route table. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, and so on).  
Type: String  
Valid values: `active` | `blackhole`

`tag-key`  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.  
Type: String

`tag-value`  
The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.  
Type: String

`tag: key=value`

The key/value combination of a tag assigned to the resource, where `tag: key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`vpc-id`

The ID of the VPC for the route table.

Type: String

## Response Elements

The following elements are returned in a `DescribeRouteTablesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`routeTableSet`

A list of route tables, each one wrapped in an `item` element.

Type: [RouteTableType](#) (p. 556)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidRouteTableID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes all your route tables.

```
https://ec2.amazonaws.com/?Action=DescribeRouteTables
&AUTHPARAMS
```

### Example Response

The first route table in the returned list is the VPC's main route table. Its association ID represents the association between the table and the VPC.

```
<DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>6f570b0b-9c18-4b07-bdec-73740dcf861a</requestId>
  <routeTableSet>
    <item>
      <routeTableId>rtb-13ad487a</routeTableId>
      <vpcId>vpc-11ad4878</vpcId>
      <routeSet>
        <item>
          <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
          <gatewayId>local</gatewayId>
          <state>active</state>
          <origin>CreateRouteTable</origin>
        </item>
      </routeSet>
      <associationSet>
        <item>
          <routeTableAssociationId>rtbassoc-12ad487b</routeTableAssoci
ationId>
          <routeTableId>rtb-13ad487a</routeTableId>
          <main>true</main>
        </item>
      </associationSet>
      <tagSet/>
    </item>
    <item>
      <routeTableId>rtb-f9ad4890</routeTableId>
      <vpcId>vpc-11ad4878</vpcId>
      <routeSet>
        <item>
          <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
          <gatewayId>local</gatewayId>
          <state>active</state>
          <origin>CreateRouteTable</origin>
        </item>
        <item>
          <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>
          <gatewayId>igw-eaad4883</gatewayId>
          <state>active</state>
        </item>
      </routeSet>
      <associationSet>
        <item>
          <routeTableAssociationId>rtbassoc-faad4893</routeTableAssoci
ationId>
          <routeTableId>rtb-f9ad4890</routeTableId>
          <subnetId>subnet-15ad487c</subnetId>
        </item>
      </associationSet>
      <tagSet/>
    </item>
  </routeTableSet>
</DescribeRouteTablesResponse>
```

## Related Actions

- [AssociateRouteTable \(p. 24\)](#)



- [DisassociateRouteTable](#) (p. 371)
- [DeleteRouteTable](#) (p. 155)
- [CreateRouteTable](#) (p. 105)
- [ReplaceRouteTableAssociation](#) (p. 437)

# DescribeSecurityGroups

## Description

Describes one or more of your security groups.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see [Amazon EC2 Security Groups](#) in the *Amazon EC2 User Guide for Linux Instances* and [Security Groups for Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupName.n*

One or more security group names.

Type: String

Default: Describes all your security groups.

Condition: [EC2-Classic, default VPC] You can specify either *GroupName* or *GroupId*

Required: No

### *GroupId.n*

One or more security group IDs.

Type: String

Default: Describes all your security groups.

Condition: Required for a nondefault VPC; for EC2-Classic or a default VPC, you can specify either *GroupName* or *GroupId*.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the [Supported Filters](#) section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the [Supported Filters](#) section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain security groups. For example, you can use a filter to specify that you're interested in groups whose name contains a specific string. You can specify multiple values for a filter. The response includes information for a security group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's whose name contains a specific string, and that give permission to another security group with a different string in its name. The response includes

information for a group only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

### Important

Filters are based on literal strings only. This is important to remember when you want to use filters to return only security groups with access allowed on a specific port number or numbers. For example, suppose that you want to get all groups that have access on port 22, and that GroupA gives access on a range of ports using `fromPort=20` and `toPort=30`. If you filter with `ip-permission.from-port=22` or `ip-permission.to-port=22` (or both), the response does not contain information for GroupA. You get information for GroupA only if you specify `ip-permission.from-port=20` or `ip-permission.to-port=30` (or both).

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`description`

The description of the security group.

Type: String

`group-id`

The ID of the security group.

Type: String

`group-name`

The name of the security group.

Type: String

`ip-permission.cidr`

A CIDR range that has been granted permission.

Type: String

`ip-permission.from-port`

The start of the port range for the TCP and UDP protocols, or an ICMP type number.

Type: String

`ip-permission.group-id`

The ID of a security group that has been granted permission.

Type: String

`ip-permission.group-name`

The name of a security group that has been granted permission.

Type: String

`ip-permission.protocol`

The IP protocol for the permission.

Type: String

Valid values: `tcp` | `udp` | `icmp` or a protocol number

`ip-permission.to-port`

The end of the port range for the TCP and UDP protocols, or an ICMP code.

Type: String

`ip-permission.user-id`

The ID of an AWS account that has been granted permission.

Type: String

`owner-id`

The AWS account ID of the owner of the security group.

Type: String

tag-key

The key of a tag assigned to the security group.

Type: String

tag-value

The value of a tag assigned to the security group.

Type: String

vpc-id

The ID of the VPC specified when the security group was created.

Type: String

## Response Elements

The following elements are returned in a `DescribeSecurityGroupsResponse` element.

requestId

The ID of the request.

Type: xsd:string

securityGroupInfo

A list of security groups, each one wrapped in an `item` element.

Type: [SecurityGroupItemType](#) (p. 561)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidGroupId.Malformed](#) (p. 619)
- [InvalidGroup.NotFound](#) (p. 619)
- [InvalidParameterValue](#) (p. 619)
- [VPCIdNotSpecified](#) (p. 619)

## Examples

### Example Request

This example returns information about two security groups that are configured for the account.

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupName.1=WebServers
&GroupName.2=RangedPortsBySource
&AUTHPARAMS
```

### Example Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<securityGroupInfo>
  <item>
    <ownerId>111122223333</ownerId>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>WebServers</groupName>
    <groupDescription>Web Servers</groupDescription>
    <vpcId/>
    <ipPermissions>
      <item>
        <ipProtocol>tcp</ipProtocol>
        <fromPort>80</fromPort>
        <toPort>80</toPort>
        <groups/>
        <ipRanges>
          <item>
            <cidrIp>0.0.0.0/0</cidrIp>
          </item>
        </ipRanges>
      </item>
    </ipPermissions>
    <ipPermissionsEgress/>
  </item>
  <item>
    <ownerId>111122223333</ownerId>
    <groupId>sg-2a2b3c4d</groupId>
    <groupName>RangedPortsBySource</groupName>
    <groupDescription>Group A</groupDescription>
    <ipPermissions>
      <item>
        <ipProtocol>tcp</ipProtocol>
        <fromPort>6000</fromPort>
        <toPort>7000</toPort>
        <groups>
          <item>
            <userId>111122223333</userId>
            <groupId>sg-3a2b3c4d</groupId>
            <groupName>Group B</groupName>
          </item>
        </groups>
        <ipRanges/>
      </item>
    </ipPermissions>
    <ipPermissionsEgress/>
  </item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## Example Request

This example describes all security groups that grant access over TCP specifically on port 22 from instances in either the `app_server_group` or `database_group`.

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&Filter.1.Name=ip-permission.protocol
&Filter.1.Value.1=tcp
&Filter.2.Name=ip-permission.from-port
```

```
&Filter.2.Value.1=22
&Filter.3.Name=ip-permission.to-port
&Filter.3.Value.1=22
&Filter.4.Name=ip-permission.group-name
&Filter.4.Value.1=app_server_group
&Filter.4.Value.2=database_group
&AUTHPARAMS
```

## Related Actions

- [CreateSecurityGroup](#) (p. 107)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [RevokeSecurityGroupIngress](#) (p. 461)
- [DeleteSecurityGroup](#) (p. 157)

# DescribeSnapshotAttribute

## Description

Describes the specified attribute of the specified snapshot. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SnapshotId*

The ID of the Amazon EBS snapshot.

Type: String

Default: None

Required: Yes

### *Attribute*

The snapshot attribute.

Type: String

Valid values: `createVolumePermission` | `productCodes`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeSnapshotAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `snapshotId`

The ID of the Amazon EBS snapshot.

Type: `xsd:string`

### `createVolumePermission`

A list of permissions for creating volumes from the snapshot. Each permission is wrapped in an `item` element.

Type: [CreateVolumePermissionItemType \(p. 496\)](#)

### `productCodes`

A list of product codes. Each product code is wrapped in an `item` element type that contains a product code and a type.

Type: [ProductCodesSetItemType \(p. 550\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidSnapshot.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example describes permissions for the snap-1a2b3c4d snapshot.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=createVolumePermission
&AUTHPARAMS
```

### Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <createVolumePermission>
    <item>
      <group>all</group>
    </item>
  </createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

### Example Request

This example describes product codes associated with the snap-1a2b3c4d snapshot.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=productCodes
&AUTHPARAMS
```

### Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeSnapshotAttributeResponse>
```

## Related Actions

- [ModifySnapshotAttribute](#) (p. 402)
- [DescribeSnapshots](#) (p. 299)



- [ResetSnapshotAttribute](#) (p. 456)
- [CreateSnapshot](#) (p. 110)

# DescribeSnapshots

## Description

Describes one or more of the Amazon EBS snapshots available to you. Snapshots available to you include public snapshots available for any AWS account to launch, private snapshots you own, and private snapshots owned by another AWS account but for which you've been given explicit create volume permissions.

The create volume permissions fall into the following categories:

### public

The owner of the snapshot granted create volume permissions for the snapshot to the `all` group. All AWS accounts have create volume permissions for these snapshots.

### explicit

The owner of the snapshot granted create volume permissions to a specific AWS account.

### implicit

An AWS account has implicit create volume permissions for all snapshots it owns.

The list of snapshots returned can be modified by specifying snapshot IDs, snapshot owners, or AWS accounts with create volume permissions. If no options are specified, Amazon EC2 returns all snapshots for which you have create volume permissions.

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it is not included in the returned results.

If you specify one or more snapshot owners, only snapshots from the specified owners and for which you have access are returned. The results can include the AWS account IDs of the specified owners, `amazon` for snapshots owned by Amazon, or `self` for snapshots that you own.

If you specify a list of restorable users, only snapshots with create snapshot permissions for those users are returned. You can specify AWS account IDs (if you own the snapshots), `self` for snapshots for which you own or have explicit permissions, or `all` for public snapshots.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SnapshotId.n*

One or more snapshot IDs.

Type: String

Default: Describes snapshots for which you have launch permissions.

Required: No

### *Owner.n*

Returns the snapshots owned by the specified owner. Multiple owners can be specified.

Type: String

Valid values: `self` | `amazon` | AWS Account ID

Default: None

Required: No

### *RestorableBy.n*

One or more AWS accounts IDs that can create volumes from the snapshot.

Type: String  
Default: None  
Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String  
Default: None  
Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String  
Default: None  
Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain snapshots. For example, you can use a filter to specify that you're interested in snapshots whose status is `pending`. You can specify multiple values for a filter. The response includes information for a snapshot only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify snapshot's that have a `pending` status, and have a specific tag. The response includes information for a snapshot only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`description`

A description of the snapshot.

Type: String

`encrypted`

The encryption status of the snapshot.

Type: Boolean

`owner-alias`

The AWS account alias (for example, `amazon`) that owns the snapshot.

Type: String

`owner-id`

The ID of the AWS account that owns the snapshot.

Type: String

`progress`

The progress of the snapshot, as a percentage (for example, `80%`).

Type: String

`snapshot-id`

The snapshot ID.

Type: String

`start-time`

The time stamp when the snapshot was initiated.

Type: `DateTime`

`status`

The status of the snapshot.

Type: `String`

Valid values: `pending` | `completed` | `error`

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: `String`

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: `String`

`tag:key=value`

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`volume-id`

The ID of the volume the snapshot is for.

Type: `String`

`volume-size`

The size of the volume, in GiB (for example, 20).

Type: `String`

## Response Elements

The following elements are returned in a `DescribeSnapshotsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`snapshotSet`

A list of snapshots. Each snapshot is wrapped in an `item` element.

Type: [DescribeSnapshotsSetItemResponseType](#) (p. 506)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameterValue \(p. 619\)](#)
- [InvalidSnapshot.NotFound \(p. 619\)](#)
- [InvalidUserID.Malformed \(p. 619\)](#)

## Examples

### Example Request

This example describes snapshot `snap-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>80%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet/>
      <encrypted>true</encrypted>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

### Example Request

This example filters the response to include only snapshots with the `pending` status, and that are also tagged with a value that includes the string `db_`.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag-value
&Filter.2.Value.1=*db_*
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>30%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet>
        <item>
          <key>Purpose</key>
          <value>demo_db_14_backup</value>
        </item>
      </tagSet>
      <encrypted>>false</encrypted>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 110)
- [DeleteSnapshot](#) (p. 159)

# DescribeSpotDatafeedSubscription

## Description

Describes the datafeed for Spot Instances. For more information, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

No parameters.

## Response Elements

The following elements are returned in a `DescribeSpotDatafeedSubscriptionResponse` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`spotDatafeedSubscription`  
The Spot Instance datafeed subscription.  
Type: [SpotDatafeedSubscriptionType](#) (p. 562)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidSpotDatafeed.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the datafeed for the account.

```
https://ec2.amazonaws.com/?Action=DescribeSpotDatafeedSubscription
&AUTHPARAMS
```

### Example Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazon
aws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
```

```
<bucket>myawsbucket</bucket>  
<prefix>spotdata_</prefix>  
<state>Active</state>  
</spotDatafeedSubscription>  
</DescribeSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [CreateSpotDatafeedSubscription](#) (p. 113)
- [DeleteSpotDatafeedSubscription](#) (p. 161)



# DescribeSpotInstanceRequests

## Description

Describes the Spot Instance requests that belong to your account. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*SpotInstanceRequestId.n*

One or more Spot Instance request IDs.

Type: String

Default: None

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Spot Instance requests. For example, you can use a filter to specify that you're interested in requests where the Spot Price is a specific value. (You can't use a greater than or less than comparison, however you can use \* and ? wildcards.) You can specify multiple values for a filter. The response includes information for a Spot Instance request only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify that the Spot Price is a specific value, and that the instance type is m1.small. The response includes information for a request only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

`availability-zone-group`  
The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone.  
Type: String

`create-time`  
The time stamp when the Spot Instance request was created.  
Type: String

`fault-code`  
The fault code related to the request.  
Type: String

`fault-message`  
The fault message related to the request.  
Type: String

`instance-id`  
The ID of the instance that fulfilled the request.  
Type: String

`launch-group`  
The Spot Instance launch group. Launch groups are Spot Instances that launch together and terminate together.  
Type: String

`launch.block-device-mapping.delete-on-termination`  
Whether the Amazon EBS volume is deleted on instance termination.  
Type: Boolean

`launch.block-device-mapping.device-name`  
The device name (for example, `/dev/sdh`) for the Amazon EBS volume.  
Type: String

`launch.block-device-mapping.snapshot-id`  
The ID of the snapshot used for the Amazon EBS volume.  
Type: String

`launch.block-device-mapping.volume-size`  
The volume size of the Amazon EBS volume, in GiB.  
Type: String

`launch.block-device-mapping.volume-type`  
The volume type of the Amazon EBS volume.  
Type: String  
Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

`launch.group-id`  
The security group for the instance.  
Type: String

`launch.image-id`  
The ID of the AMI.  
Type: String

`launch.instance-type`  
The type of instance (for example, `m1.small`).  
Type: String

`launch.kernel-id`  
The kernel ID.  
Type: String

- `launch.key-name`  
The name of the key pair the instance launched with.  
Type: String
- `launch.monitoring-enabled`  
Whether monitoring is enabled for the Spot Instance.  
Type: Boolean
- `launch.ramdisk-id`  
The RAM disk ID.  
Type: String
- `network-interface.network-interface-id`  
The ID of the network interface.  
Type: String
- `network-interface.device-index`  
The index of the device for the network interface attachment on the instance.  
Type: Integer
- `network-interface.subnet-id`  
The ID of the subnet for the instance.  
Type: String
- `network-interface.description`  
A description of the network interface.  
Type: String
- `network-interface.private-ip-address`  
The primary private IP address of the network interface.  
Type: String
- `network-interface.delete-on-termination`  
Indicates whether the network interface is deleted when the instance is terminated.  
Type: Boolean
- `network-interface.group-id`  
The ID of the security group associated with the network interface.  
Type: String
- `network-interface.group-name`  
The name of the security group associated with the network interface.  
Type: String
- `network-interface.addresses.primary`  
Indicates whether the IP address is the primary private IP address.  
Type: String
- `product-description`  
The product description associated with the instance.  
Type: String  
Valid values: Linux/UNIX | Windows
- `spot-instance-request-id`  
The Spot Instance request ID.  
Type: String
- `spot-price`  
The maximum hourly price for any Spot Instance launched to fulfill the request.  
Type: String
- `state`  
The state of the Spot Instance request. Spot bid status information can help you track your Amazon EC2 Spot Instance requests. For information, see [Tracking Spot Requests with Bid Status Codes](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Valid values: open | active | closed | cancelled | failed

status-code

The short code describing the most recent evaluation of your Spot Instance request. For more information, see [Spot Bid Status](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

status-message

The message explaining the status of the Spot Instance request.

Type: String

tag-key

The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: *key=value* filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

tag-value

The value of a tag assigned to the resource. This filter is independent of the tag-key filter.

Type: String

tag: *key=value*

The key/value combination of a tag assigned to the resource, where tag: *key* is the tag's key, and the tag's value is provided in the Filter.n.Value.m parameter.

Example: To list the resources with the tag Purpose=X, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag Purpose=X or the tag Purpose=Y, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

type

The type of Spot Instance request.

Type: String

Valid values: one-time | persistent

launched-availability-zone

The Availability Zone in which the bid is launched.

Type: String

valid-from

The start date of the request.

Type: DateTime

valid-until

The end date of the request.

Type: DateTime

## Response Elements

The following elements are returned in a `DescribeSpotInstanceRequestsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`spotInstanceRequestSet`

A list of Spot Instance requests. Each request is wrapped in an `item` element.

Type: [SpotInstanceRequestSetItemType](#) (p. 563)

`networkInterfaceSet`

Information about the network interface.

Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 524)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidSpotInstanceRequestId.NotFound](#) (p. 619)

### Note

If you get this error, it does not necessarily mean that the Spot Instance request does not exist. Its ID might have not yet propagated through the system. Issue the command again a few more times, but use increasing wait times between your tries. For more information, see [Eventual Consistency](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Examples

### Example Request

This example returns information about current Spot Instance requests.

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&AUTHPARAMS
```

### Example Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.09</spotPrice>
      <type>one-time</type>
      <state>active</state>
      <status>
        <code>fulfilled</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request is fulfilled.</message>
      </status>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
```

```
<keyName>gsg-keypair</keyName>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>webserv</groupName>
  </item>
</groupSet>
<instanceType>m1.small</instanceType>
<monitoring>
  <enabled>>false</enabled>
</monitoring>
<ebsOptimized>>false</ebsOptimized>
</launchSpecification>
<instanceId>i-1a2b3c4d</instanceId>
<createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
<productDescription>Linux/UNIX</productDescription>
<launchedAvailabilityZone>us-east-1a</launchedAvailabilityZone>
</item>
<spotInstanceRequestSet/>
<DescribeSpotInstanceRequestsResponse>
```

## Example Request

This example describes all persistent Spot Instance requests that have resulted in the launch of at least one `m1.small` instance, that has been fulfilled in the `us-east-1a` Availability Zone, and that also has monitoring enabled.

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-east-1a
&AUTHPARAMS
```

## Find Running Spot Instances

You can use `DescribeSpotInstanceRequests` to find a running Spot Instance by examining the response. If the status of the Spot Instance is fulfilled, the `instanceId` appears in the response and contains the identifier of the instance.

Alternatively, you can use [DescribeInstances](#) (p. 220) and use a filter to look for instances where `instanceLifecycle` contains `spot`.

## Example Request

```
https://ec2.amazonaws.com/
?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
```

## Example Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>b1719f2a-5334-4479-b2f1-26926EXAMPLE</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>l11122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>Linux</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-1a2b3c4d</instanceId>
          <imageId>ami-1a2b3c4d</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
          <privateDnsName>private_DNS_name</privateDnsName>
          <dnsName>DNS_name</dnsName>
          <reason/>
          <keyName>gsg-keypair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>t1.micro</instanceType>
          <launchTime>YYYY-MM-DDTHH:MM:SS.000Z</launchTime>
          <placement>
            <availabilityZone>us-east-1a</availabilityZone>
            <groupName/>
            <tenancy>default</tenancy>
          </placement>
          <kernelId>aki-1a2b3c4d</kernelId>
          <monitoring>
            <state>disabled</state>
          </monitoring>
          <privateIpAddress>private_IP_address</privateIpAddress>
          <ipAddress>IP_address</ipAddress>
          <groupSet>
            <item>
              <groupId>sg-1a2b3c4d</groupId>
              <groupName>Linux</groupName>
            </item>
          </groupSet>
          <architecture>x86_64</architecture>
          <rootDeviceType>ebs</rootDeviceType>
          <rootDeviceName>/dev/sda1</rootDeviceName>
          <blockDeviceMapping>
            <item>
              <deviceName>/dev/sda1</deviceName>
              <ebs>
                <volumeId>vol-1a2b3c4d</volumeId>
                <status>attached</status>
                <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
              </ebs>
            </item>
          </blockDeviceMapping>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
        <deleteOnTermination>true</deleteOnTermination>
      </ebs>
    </item>
  </blockDeviceMapping>
  <instanceLifecycle>spot</instanceLifecycle>
  <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
  <virtualizationType>paravirtual</virtualizationType>
  <clientToken>client_token</clientToken>
  <tagSet/>
  <hypervisor>xen</hypervisor>
  <networkInterfaceSet/>
  <ebsOptimized>>false</ebsOptimized>
</item>
</instancesSet>
<requesterId>requester_ID</requesterId>
</item>
</reservationSet>
</DescribeInstancesResponse>"
```

## Related Actions

- [RequestSpotInstances](#) (p. 442)
- [CancelSpotInstanceRequests](#) (p. 54)
- [DescribeSpotPriceHistory](#) (p. 314)



# DescribeSpotPriceHistory

## Description

Describes the Spot Price history. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

When you use the `availability-zone` option, this command describes the price history for the specified Availability Zone with the most recent set of prices listed first. If you don't specify an Availability Zone, the command returns the prices across all Availability Zones, starting with the most recent set. However, if you use this command with versions of the API earlier than the 2011-05-15 version, this command returns the lowest price across the region for the given time period. The prices returned are listed in chronological order — from the oldest to the most recent.

When you use the `start time` and `end time` options, the `describe Spot price history` command returns two pieces of data: the prices of the instance types within the time range that you specified and the time when the price changed. The price is valid within the time period that you specified; the response merely indicates the last time that the price changed.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *StartTime*

The start date and time of the Spot Price history data.

Type: DateTime

Default: None

Required: No

### *EndTime*

The end date and time of the Spot Price history data.

Type: DateTime

Default: None

Required: No

### *InstanceType.n*

The instance type to return.

Type: String

Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `c3.4xlarge` | `c3.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `cg1.4xlarge` | `cr1.8xlarge` | `g2.2xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge`. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Default: None

Required: No

### *ProductDescription.n*

Filters the results by basic product description.

Type: String

Valid values: `Linux/UNIX` | `SUSE Linux` | `Windows` | `Linux/UNIX (Amazon VPC)` | `SUSE Linux (Amazon VPC)` | `Windows (Amazon VPC)`

Default: Returns all information

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

*AvailabilityZone*

Filters the results by Availability Zone.

Type: String

Valid values: `us-east-1a`, etc.

Default: None

Required: No

*MaxResults*

The maximum number of rows to return.

Type: Integer

Default: None

Required: No

*NextToken*

The next set of rows to return.

Type: String

Valid values: A `NextToken` value returned by a previous call of the API.

Default: None

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so you can limit the response to your specified criteria. You can use filters to limit the response when describing Spot Price histories, even though you can use the options instead.

For example, you could use an option or a filter to get the history for a particular instance type. You can specify multiple request parameters or filters (for example, limit the response to the `m2.xlarge` instance type, and only for Windows instances). The response includes information for a price history only if it matches all your options or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

*instance-type*

The type of instance (for example, `m1.small`).

Type: String

`product-description`

The product description for the Spot Price.

Type: String

Valid values: Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)

`spot-price`

The Spot Price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).

Type: String

`timestamp`

The timestamp of the Spot Price history (for example, 2010-08-16T05:06:11.000Z). You can use wildcards (\* and ?). Greater than or less than comparison is not supported.

Type: DateTime

`availability-zone`

The Availability Zone for which prices should be returned.

Type: String

## Response Elements

The following elements are returned in a `DescribeSpotPriceHistoryResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`spotPriceHistorySet`

A list of historical Spot Prices. Each price is wrapped in an `item` element.

Type: [SpotPriceHistorySetItemType](#) (p. 566)

`nextToken`

The string marking the next set of results returned. This element is empty if there are no more results to be returned.

Type: `xsd:string`

## Examples

### Example Request

This example returns Spot Price history for a particular day in December 2009 for Availability Zone `us-east-1a`.

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2009-12-04T00:00:00.000Z
&EndTime=2009-12-04T23:59:59.000Z
&AvailabilityZone=us-east-1a
&AUTHPARAMS
```

This request uses filters instead of regular parameters to achieve the same results.

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
```

```
&Filter.1.Value.1=2009-12-04*  
&Filter.2.Name=availability-zone  
&Filter.2.Value.1=us-east-1a  
&AUTHPARAMS
```

## Example Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <spotPriceHistorySet>  
    <item>  
      <instanceType>m1.small</instanceType>  
      <productDescription>Linux/UNIX</productDescription>  
      <spotPrice>0.287</spotPrice>  
      <timestamp>2009-12-04T20:56:05.000Z</timestamp>  
      <availabilityZone>us-east-1a</availabilityZone>  
    </item>  
    <item>  
      <instanceType>m1.small</instanceType>  
      <productDescription>Windows</productDescription>  
      <spotPrice>0.033</spotPrice>  
      <timestamp>2009-12-04T22:33:47.000Z</timestamp>  
      <availabilityZone>us-east-1a</availabilityZone>  
    </item>  
  </spotPriceHistorySet>  
  <nextToken/>  
</DescribeSpotPriceHistoryResponse>
```

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)
- [CancelSpotInstanceRequests](#) (p. 54)

# DescribeSubnets

## Description

Describes one or more of your subnets.

For more information about subnets, see [Your VPC and Subnets](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SubnetId.n*

One or more subnet IDs.

Type: String

Default: Describes all your subnets.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain subnets. For example, you can use a filter to specify that you're interested in the subnets in the `available` state. You can specify multiple values for a filter. The response includes information for a subnet only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify subnets that are in a specific VPC and are in the `available` state. The response includes information for a subnet only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### `availabilityZone`

The Availability Zone for the subnet.

You can also use `availability-zone` as the filter name.

Type: String

`available-ip-address-count`

The number of IP addresses in the subnet that are available.

Type: String

`cidrBlock`

The CIDR block of the subnet. The CIDR block you specify must exactly match the subnet's CIDR block for information to be returned for the subnet.

You can also use `cidr` or `cidr-block` as the filter names.

Type: String

Constraints: Must contain the slash followed by one or two digits (for example, `/28`).

`defaultForAz`

Indicates whether this is the default subnet for the Availability Zone.

You can also use `default-for-az` as the filter name.

Type: Boolean

`state`

The state of the subnet.

Type: String

Valid values: `pending` | `available`

`subnet-id`

The ID of the subnet.

Type: String

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag:key=value`

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`vpc-id`

The ID of the VPC for the subnet.

Type: String

## Response Elements

The following elements are returned in a `DescribeSubnetsResponse` element.

requestId

The ID of the request.

Type: xsd:string

subnetSet

A list of subnets. Each subnet is wrapped in an `item` element.

Type: [SubnetType](#) (p. 567)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidSubnetID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the subnets with the IDs `subnet-9d4a7b6c` and `subnet-6e7f829e`.

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&SubnetId.1=subnet-9d4a7b6c
&SubnetId.2=subnet-6e7f829e
&AUTHPARAMS
```

### Example Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnetSet>
    <item>
      <subnetId>subnet-9d4a7b6c</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.1.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>>false</defaultForAz>
      <mapPublicIpOnLaunch>>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
    <item>
      <subnetId>subnet-6e7f829e</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>>false</defaultForAz>
      <mapPublicIpOnLaunch>>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
  </subnetSet>
</DescribeSubnetsResponse>
```

```
</item>  
<subnetSet/>  
</DescribeSubnetsResponse>
```

## Example Request

This example uses filters to describe any subnet you own that is in the VPC with the ID `vpc-1a2b3c4d` or `vpc-6e7f8a92`, and whose state is available.

```
https://ec2.amazonaws.com/?Action=DescribeSubnets  
&Filter.1.Name=vpc-id  
&Filter.1.Value.1=vpc-1a2b3c4d  
&Filter.1.Value.2=vpc-6e7f8a92  
&Filter.2.Name=state  
&Filter.2.Value.1=available  
&AUTHPARAMS
```

## Related Actions

- [CreateSubnet](#) (p. 115)
- [DeleteSubnet](#) (p. 162)



# DescribeTags

## Description

Describes one or more of the tags for your EC2 resources.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *MaxResults*

The maximum number of items to return for this call. The call also returns a token that you can specify in a subsequent call to get the next set of results.

Type: Integer

Default: The call returns all items.

Constraint: If the value is greater than 1000, we return only 1000 items.

Required: No

### *NextToken*

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters to limit the response when describing tags. For example, you can use a filter to get only the tags for a specific resource type. You can specify multiple values for a filter. The response includes information for a tag only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify a specific resource type and tag values that contain the string `database`). The response includes information for a tag only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon?\` searches for the literal string `*amazon?\`.

The following are the available filters.

key

The tag key.

Type: String

resource-id

The resource ID.

Type: String

resource-type

The resource type.

Type: String

Valid values: customer-gateway | dhcp-options | image | instance | internet-gateway | network-acl | network-interface | reserved-instances | route-table | security-group | snapshot | spot-instances-request | subnet | volume | vpc | vpn-connection | vpn-gateway

value

The tag value.

Type: String

## Response Elements

The following elements are returned in a `DescribeTagsResponse` element.

requestId

The ID of the request.

Type: `xsd:string`

tagSet

A list of tags. Each tag is wrapped in an `item` element.

Type: [TagSetItemType](#) (p. 568)

nextToken

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: `xsd:string`

## Examples

### Example Request

This example describes all the tags in your account.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&AUTHPARAMS
```

### Example Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
```

```
<resourceId>ami-1a2b3c4d</resourceId>
<resourceType>image</resourceType>
<key>webserver</key>
<value/>
</item>
<item>
  <resourceId>ami-1a2b3c4d</resourceId>
  <resourceType>image</resourceType>
  <key>stack</key>
  <value>Production</value>
</item>
<item>
  <resourceId>i-5f4e3d2a</resourceId>
  <resourceType>instance</resourceType>
  <key>webserver</key>
  <value/>
</item>
<item>
  <resourceId>i-5f4e3d2a</resourceId>
  <resourceType>instance</resourceType>
  <key>stack</key>
  <value>Production</value>
</item>
<item>
  <resourceId>i-12345678</resourceId>
  <resourceType>instance</resourceType>
  <key>database_server</key>
  <value/>
</item>
<item>
  <resourceId>i-12345678</resourceId>
  <resourceType>instance</resourceType>
  <key>stack</key>
  <value>Test</value>
</item>
</tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-id
&Filter.1.Value.1=ami-1a2b3c4d
&AUTHPARAMS
```

## Example Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
```

```
    <key>webserver</key>
    <value/>
  </item>
  <item>
    <resourceId>ami-1a2b3c4d</resourceId>
    <resourceType>image</resourceType>
    <key>stack</key>
    <value>Production</value>
  </item>
</tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS
```

## Example Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>database_server</key>
      <value/>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances tagged with the key *webserver*. Note that you can use wildcards with filters, so you could specify the value as *?ebserver* to find tags with the key *webserver* or *Webserver*.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

## Example Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances tagged with either *stack=Test* or *stack=Production*.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=stack
&Filter.3.Name=value
&Filter.3.Value.1=Test
&Filter.3.Value.2=Production
&AUTHPARAMS
```

## Example Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
```

```
    <key>stack</key>
    <value>Test</value>
  </item>
</tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances tagged with Purpose=[empty string].

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=Purpose
&Filter.3.Name=value
&Filter.3.Value.1=
&AUTHPARAMS
```

## Related Actions

- [CreateTags](#) (p. 118)
- [DeleteTags](#) (p. 164)

# DescribeVolumeAttribute

## Description

Describes the specified attribute of the specified volume. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *Attribute*

The instance attribute.

Type: String

Valid values: `autoEnableIO` | `productCodes`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeVolumeAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `volumeId`

The ID of the volume.

Type: `xsd:string`

### `autoEnableIO`

The state of `autoEnableIO` attribute.

Type: `NullableAttributeBooleanValueType`

### `productCodes`

A list of product codes. Each product code is wrapped in an `item` element that contains a product code and a type.

Type: [ProductCodesSetItemType \(p. 550\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVolume.NotFound \(p. 619\)](#)

## Example

### Example Request

This example describes the `autoEnableIO` attribute of the volume `vol-12345678`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-12345678
&AUTHPARAMS
```

### Example Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <autoEnableIO>
    <value>>false</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>
```

### Example Request

This example describes the `productCodes` attribute of the volume `vol-12345678`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-12345678
&AUTHPARAMS
```

### Example Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <productCodes>
    <item>
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
```

## Related Actions

- [DescribeVolumeStatus](#) (p. 335)
- [ModifyVolumeAttribute](#) (p. 406)



# DescribeVolumes

## Description

Describes the specified Amazon EBS volumes.

If you are describing a long list of volumes, you can paginate the output to make the list more manageable. The `MaxResults` parameter sets the maximum number of results returned in a single page. If the list of results exceeds your `MaxResults` value, then that number of results is returned along with a `NextToken` value that can be passed to a subsequent `DescribeVolumes` request to retrieve the remaining results.

For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId.n*

One or more volume IDs.

Type: String

Default: Describes all your volumes.

Required: No

### *MaxResults*

The maximum number of volume results returned by `DescribeVolumes` in paginated output. When this parameter is used, `DescribeVolumes` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `DescribeVolumes` request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then `DescribeVolumes` returns all results.

Type: Integer

Default: None

Required: No

### *NextToken*

The `NextToken` value returned from a previous paginated `DescribeVolumes` request where `MaxResults` was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the `NextToken` value. This value is `null` when there are no more results to return.

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes whose status is `available`. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify that the volume is `available`, and has a specific tag). The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

`attachment.attach-time`

The time stamp when the attachment initiated.

Type: DateTime

`attachment.delete-on-termination`

Whether the volume is deleted on instance termination.

Type: Boolean

`attachment.device`

The device name that is exposed to the instance (for example, `/dev/sda1`).

Type: String

`attachment.instance-id`

The ID of the instance the volume is attached to.

Type: String

`attachment.status`

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

`availability-zone`

The Availability Zone in which the volume was created.

Type: String

`create-time`

The time stamp when the volume was created.

Type: DateTime

`encrypted`

The encryption status of the volume.

Type: Boolean

`iops`

The number of I/O operations per second (IOPS) that the volume supports. For Provisioned IOPS (SSD) volumes, this represents the number of IOPS that have been provisioned for the volume. For General Purpose (SSD) volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information on General Purpose (SSD) baseline performance, I/O credits, and bursting, see [Amazon EBS Volume Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Valid values: Range is 100 to 4,000 for Provisioned IOPS (SSD) volumes and 3 to 3,072 for General Purpose (SSD) volumes.

size

The size of the volume, in GiB (for example, 20).

Type: String

snapshot-id

The snapshot from which the volume was created.

Type: String

status

The status of the volume.

Type: String

Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

tag-key

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

tag-value

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

tag:key=value

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

volume-id

The volume ID.

Type: String

volume-type

The Amazon EBS volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

## Response Elements

The following elements are returned in a `DescribeVolumesResponse` element.

nextToken

The `NextToken` value to include in a future `DescribeVolumes` request. When the results of a `DescribeVolumes` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: `xsd:string`

requestId

The ID of the request.

Type: `xsd:string`

volumeSet

A list of volumes. Each volume is wrapped in an `item` element.

Type: [DescribeVolumesSetItemResponseType \(p. 507\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidParameterValue \(p. 619\)](#)
- [InvalidVolume.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example describes all volumes associated with your account.

```
https://ec2.amazonaws.com/?Action=DescribeVolumes
&AUTHPARAMS
```

### Example Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeSet>
    <item>
      <volumeId>vol-1a2b3c4d</volumeId>
      <size>80</size>
      <snapshotId/>
      <availabilityZone>us-east-1a</availabilityZone>
      <status>in-use</status>
      <createTime>YYYY-MM-DDTHH:MM:SS.SSSZ</createTime>
      <attachmentSet>
        <item>
          <volumeId>vol-1a2b3c4d</volumeId>
          <instanceId>i-1a2b3c4d</instanceId>
          <device>/dev/sdh</device>
          <status>attached</status>
          <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
          <deleteOnTermination>>false</deleteOnTermination>
        </item>
      </attachmentSet>
    </item>
  </volumeSet>
</DescribeVolumesResponse>
```

```
</attachmentSet>
  <volumeType>standard</volumeType>
  <encrypted>true</encrypted>
</item>
</volumeSet>
</DescribeVolumesResponse>
```

## Example Request

This example describes all volumes that are both attached to instance `i-1a2b3c4d` and also set to delete when the instance terminates.

```
https://ec2.amazonaws.com/?Action=DescribeVolumes
&Filter.1.Name=attachment.instance-id
&Filter.1.Value.1=i-1a2b3c4d
&Filter.2.Name=attachment.delete-on-termination
&Filter.2.Value.1=true
&AUTHPARAMS
```

## Example Request

This example describes all volumes that belong to either TeamA or TeamB, and that contain log data. You use a wildcard to find the volumes that have a tag with the `Purpose` key that have a value that contains `Log`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumes
&Filter.1.Name=tag:Owner
&Filter.1.Value.1=TeamA
&Filter.1.Value.2=TeamB
&Filter.2.Name=tag:Purpose
&Filter.2.Value.1=*Log*
&AUTHPARAMS
```

## Example Request

This example lists only your volumes that are in the `us-east-1b` Availability Zone and have a status of `available`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumes
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1b
&Filter.2.Name=status
&Filter.2.Value.1=available
&AUTHPARAMS
```

## Related Actions

- [CreateVolume](#) (p. 121)
- [DeleteVolume](#) (p. 167)
- [AttachVolume](#) (p. 30)
- [DetachVolume](#) (p. 362)

# DescribeVolumeStatus

## Description

Describes the status of the specified volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, once the system is restored there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The `DescribeVolumeStatus` operation provides the following information about the specified volumes:

**Status:** Reflects the current status of the volume. The possible values are `ok`, `impaired`, `warning`, or `insufficient-data`. If all checks pass, the overall status of the volume is `ok`. If the check fails, the overall status is `impaired`. If the status is `insufficient-data`, then the checks may still be taking place on your volume at the time. We recommend you retry the request. For more information on volume status, see [Monitoring the Status of Your Volumes](#).

**Events:** Reflect the cause of a volume status and may require you to take an action. For example, if your volume returns an `impaired` status, then the volume event might be `potential-data-inconsistency`. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and may have inconsistent data.

**Actions:** Reflect the actions you may have to take in response to an event. For example, if the status of the volume is `impaired` and the volume event shows `potential-data-inconsistency`, then the action shows `enable-volume-io`. This means that you may want to enable the I/O operations for the volume by calling the [EnableVolumeIO \(p. 375\)](#) action and then check the volume for data consistency.

### Note

Volume status is based on the volume status checks, and does not reflect the volume state. Therefore, volume status does not indicate volumes in the `error` state (for example, when a volume is incapable of accepting I/O.)

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId.n*

One or more volume IDs.  
Type: String  
Default: Describes all your volumes.  
Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.  
Type: String  
Default: None  
Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.  
Type: String  
Default: None

Required: No

*MaxResults*

The maximum number of items to return for this call. The call also returns a token that you can specify in a subsequent call to get the next set of results.

Type: Integer

Default: The call returns all items.

Constraint: If the value is greater than 1000, we return only 1000 items.

Required: No

*NextToken*

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes that have `impaired` status. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify volumes that are in a specific Availability Zone and have the status `impaired`. The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`availability-zone`

The Availability Zone of the instance.

Type: String

`volume-status.status`

The status of the volume.

Type: String

Valid values: `ok` | `impaired` | `warning` | `insufficient-data`

`volume-status.details-name`

The cause for the `volume-status.status`.

Type: String

Valid values: `io-enabled` | `io-performance`

`volume-status.details-status`

The status of the `volume-status.details-name`.

Type: String

Valid values for `io-enabled`: `passed` | `failed`

Valid values for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`

`event.description`

A description of the event.

Type: String

`event.not-after`

The latest end time for the event.

Type: DateTime  
event.not-before  
The earliest start time for the event.  
Type: DateTime  
event.event-id  
The event ID.  
Type: String  
event.event-type  
The event type.  
Type: String  
Valid values for io-enabled: potential-data-inconsistency  
Valid values for io-performance: io-performance:degraded | io-performance:severely-degraded | io-performance:stalled  
action.code  
The action code for the event, for example, enable-volume-io  
Type: String  
action.event-id  
The event ID associated with the action.  
Type: String  
action.description  
A description of the action.  
Type: String

## Response Elements

The following elements are returned in a `DescribeVolumeStatusResponse` element.

requestId  
The ID of the request.  
Type: xsd:string  
volumeStatusSet  
A list of volumes. Each volume is wrapped in an `item` element.  
Type: [VolumeStatusItemType](#) (p. 570)  
nextToken  
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.  
Type: xsd:string

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidVolume.NotFound](#) (p. 619)



## Examples

### Example Request

This example describes the status of all the volumes associated with your account.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&AUTHPARAMS
```

### Example Response

```
<DescribeVolumeStatusResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
      <VolumeId>vol-11111111</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>ok</status>
        <details>
          <item>
            <name>io-enabled</name>
            <status>passed</status>
          </item>
        </details>
      </volumeStatus>
    </item>
    <item>
      <volumeId>vol-22222222</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>impaired</status>
        <details>
          <item>
            <name>io-enabled</name>
            <status>failed</status>
          </item>
        </details>
      </volumeStatus>
      <eventsSet>
        <item>
          <eventId>evol-61a54008</eventId>
          <eventType>potential-data-inconsistency</eventType>
          <description>THIS IS AN EXAMPLE</description>
          <notBefore>2011-12-01T14:00:00.000Z</notBefore>
          <notAfter>2011-12-01T15:00:00.000Z</notAfter>
        </item>
      </eventsSet>
      <actionsSet>
        <item>
          <code>enable-volume-io</code>
          <eventId>evol-61a54008</eventId>
          <eventType>potential-data-inconsistency</eventType>
          <description>THIS IS AN EXAMPLE</description>
        </item>
      </actionsSet>
    </item>
  </volumeStatusSet>
</DescribeVolumeStatusResponse>
```

```
    </item>
  </actionsSet>
</item>
</volumeStatusSet>
</DescribeVolumeStatusResponse>
```

## Example Request

This example describes all the volumes in the `us-east-1d` Availability Zone with failed `io-enabled` status.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
&Filter.3.Value.1=failed
&AUTHPARAMS
```

## Related Actions

- [ModifyVolumeAttribute](#) (p. 406)
- [DescribeVolumeAttribute](#) (p. 328)
- [EnableVolumeIO](#) (p. 375)

# DescribeVpcAttribute

## Description

Describes the specified attribute of the specified VPC. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VpcId*

The ID of the VPC.

Type: String

Required: Yes

### *Attribute*

The VPC attribute.

Type: String

Valid values: `enableDnsSupport` | `enableDnsHostnames`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeVpcAttributeResponse` structure.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `enableDnsSupport`

Indicates whether DNS resolution is enabled for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: `xsd:boolean`

### `enableDnsHostnames`

Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is `true`, instances in the VPC get DNS hostnames; otherwise, they do not.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpcID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example describes the `enableDnsSupport` attribute of the specified VPC.

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

### Example Response

This example response indicates that DNS resolution is supported.

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

### Example Request

This request describes the `enableDnsHostnames` attribute of the specified VPC.

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

### Example Response

This example response indicates that DNS hostnames are supported.

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsHostnames>
    <value>true</value>
  </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

## Related Actions

- [CreateVpc](#) (p. 125)
- [DeleteVpc](#) (p. 169)
- [ModifyVpcAttribute](#) (p. 408)

# DescribeVpcPeeringConnections

## Description

Describes one or more of your VPC peering connections.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VpcPeeringConnectionId*

One or more VPC peering connection IDs.

Type: String

Default: Describes all your VPC peering connections

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain VPC peering connections. For example, you can use a filter to specify that you're interested in VPC peering connections in the `active` state. You can specify multiple values for a filter. The response includes information for a peering connection only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify the VPC peering connections that you have with a specific AWS account owner that are in the `active` state. The results include information for a peering connection only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### `accepter-vpc-info.cidr-block`

The CIDR block of the peer VPC.

Type: String

Constraints: Must contain the slash followed by one or two digits (for example, /28)

- `accepter-vpc-info.owner-id`  
The AWS account ID of the owner of the peer VPC.  
Type: String
- `accepter-vpc-info.vpc-id`  
The ID of the peer VPC.  
Type: String
- `expiration-time`  
The expiration date and time for the VPC peering connection.  
Type: DateTime
- `requester-vpc-info.cidr-block`  
The CIDR block of the requester's VPC.  
Type: String
- `requester-vpc-info.owner-id`  
The AWS account ID of the owner of the requester VPC.  
Type: String
- `requester-vpc-info.vpc-id`  
The ID of the requester VPC.  
Type: String
- `status-code`  
The status of the VPC peering connection.  
Type: String  
Valid values: `pending-acceptance` | `failed` | `expired` | `provisioning` | `active` | `deleted` | `rejected`
- `status-message`  
A message that provides more information about the status of the VPC peering connection, if applicable.  
Type: String
- `tag-key`  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.  
Type: String
- `tag-value`  
The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.  
Type: String
- `tag:key=value`  
The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.  
Example: To list the resources with the tag `Purpose=X`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:  
`Filter.1.Name=tag:Purpose`  
`Filter.1.Value.1=X`  
`Filter.1.Value.2=Y`

`vpc-peering-connection-id`  
The ID of the VPC peering connection.  
Type: String

## Response Elements

The following elements are returned in an `DescribeVpcPeeringConnections` element.

`requestId`  
The ID of the request.  
Type: `xsd:string`

`vpcPeeringConnectionSet`  
Information about the peering connections.  
Type: [VpcPeeringConnectionType](#) (p. 574)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidVpcPeeringConnectionId.Malformed](#) (p. 619)
- [InvalidVpcPeeringConnectionId.NotFound](#) (p. 619)

## Examples

### Example Request 1

This example describes all of your VPC peering connections.

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&AUTHPARAMS
```

### Example Response 1

```
<DescribeVpcPeeringConnectionsResponse xmlns=http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcPeeringConnectionSet>
    <item>
      <vpcPeeringConnectionId>pcx-111aaa22</vpcPeeringConnectionId>
      <requesterVpcInfo>
        <ownerId>777788889999</ownerId>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <cidrBlock>172.31.0.0/16</cidrBlock>
      </requesterVpcInfo>
      <accepterVpcInfo>
        <ownerId>111122223333</ownerId>
        <vpcId>vpc-aa22cc33</vpcId>
      </accepterVpcInfo>
    </item>
  </vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```

```
<status>
  <code>pending-acceptance</code>
  <message>Pending Acceptance by 111122223333</message>
</status>
<expirationTime>2014-02-17T16:00:50.000Z</expirationTime>
<tagSet/>
</item>
</vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```

## Example Request 2

This example describes all of your VPC peering connections that are in the `pending-acceptance` state.

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=status-code
&Filter.1.Value=pending-acceptance
&AUTHPARAMS
```

## Example Request 3

This example describes all of your VPC peering connections that have the tag `Name=Finance` or `Name=Accounts`.

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=tag:Name
&Filter.1.Value.1=Finance
&Filter.1.Value.2=Accounts
&AUTHPARAMS
```

## Example Request 4

This example describes all of the VPC peering connections for your specified VPC, `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=requester-vpc-info.vpc-id
&Filter.1.Value=vpc-1a2b3c4d
&AUTHPARAMS
```

## Related Actions

- [CreateVpcPeeringConnection](#) (p. 127)
- [AcceptVpcPeeringConnection](#) (p. 12)
- [RejectVpcPeeringConnection](#) (p. 425)
- [DeleteVpcPeeringConnection](#) (p. 170)
- [CreateRoute](#) (p. 102)
- [ReplaceRoute](#) (p. 434)



# DescribeVpcs

## Description

Describes one or more of your VPCs.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*vpcId.n*

One or more VPC IDs.

Type: String

Default: Describes all your VPCs.

Required: No

*Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

*Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain VPCs. For example, you can use a filter to specify that you're interested in VPCs in the `available` state. You can specify multiple values for a filter. The response includes information for a VPC only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify VPCs that use one of several sets of DHCP options and are in the `available` state. The results include information for a VPC only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

`cidr`

The CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC.

Type: String

Constraints: Must contain the slash followed by one or two digits (for example, `/28`)

`dhcp-options-id`

The ID of a set of DHCP options.

Type: String

`isDefault`

Indicates whether the VPC is the default VPC.

Type: Boolean

`state`

The state of the VPC.

Type: String

Valid values: `pending` | `available`

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag:key=value`

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`vpc-id`

The ID of the VPC.

Type: String

## Response Elements

The following elements are returned in a `DescribeVpcsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`vpcSet`

A list of VPCs. Each VPC is wrapped in an `item` element.

Type: [VpcType](#) (p. 573)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpcID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example describes the specified VPC.

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&VpcId.1=vpc-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>available</state>
      <cidrBlock>10.0.0.0/23</cidrBlock>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>>false</isDefault>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcsResponse>
```

### Example Request

This example uses filters to describe any VPC you own that uses the set of DHCP options with the ID dopt-7a8b9c2d or dopt-2b2a3d3c and whose state is available.

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&Filter.1.Name=dhcp-options-id
&Filter.1.Value.1=dopt-7a8b9c2d
&Filter.1.Value.2=dopt-2b2a3d3c
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

## Related Actions

- [CreateVpc \(p. 125\)](#)

- [DeleteVpc](#) (p. 169)
- [CreateDhcpOptions](#) (p. 66)
- [AssociateDhcpOptions](#) (p. 22)

# DescribeVpnConnections

## Description

Describes one or more of your VPN connections.

For more information about VPN connections, see [Adding a Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon VPC User Guide*.

### Note

You can get the customer gateway configuration information in a friendly format by using the **ec2-describe-vpn-connections** command instead. For more information, see [ec2-describe-vpn-connections](#).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VpnConnectionId.n*

One or more VPN connection IDs.

Type: String

Default: Describes your VPN connections.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain VPN connections. For example, you can use a filter to specify that you're interested in the VPN connections in the `pending` or `available` state. You can specify multiple values for a filter. The response includes information for a VPN connection only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify VPN connections that are associated with a specific virtual private gateway, and the gateway is in the `pending` or `available` state. The response includes information for a VPN connection only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?.`

The following are the available filters.

`customer-gateway-configuration`

The configuration information for the customer gateway.

Type: String

`customer-gateway-id`

The ID of a customer gateway associated with the VPN connection.

Type: String

`state`

The state of the VPN connection.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

`option.static-routes-only`

Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).

Type: Boolean

`route.destination-cidr-block`

The destination CIDR block. This corresponds to the subnet used in a customer data center.

Type: String

`bgp-asn`

The BGP Autonomous System Number (ASN) associated with a BGP device.

Type: Integer

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag:key=value`

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`type`

The type of VPN connection. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: `ipsec.1`

`vpn-connection-id`

The ID of the VPN connection.

Type: String

`vpn-gateway-id`

The ID of a virtual private gateway associated with the VPN connection.

Type: String

## Response Elements

The following elements are returned in an `DescribeVpnConnectionsResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`vpnConnectionSet`

A list of VPN connections. Each VPN connection is wrapped in an `item` element.

Type: [VpnConnectionType](#) (p. 576)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidVpnConnectionID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the specified VPN connection. The response includes configuration information for the customer gateway. Because it's a long set of information, we haven't displayed it here. To see an example of the configuration information, see the [Amazon VPC Network Administrator Guide](#).

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-44a8938f
&AUTHPARAMS
```

### Example Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
      <state>available</state>
      <customerGatewayConfiguration>
        ...Customer gateway configuration data in escaped XML format...
      </customerGatewayConfiguration>
      <type>ipsec.1</type>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
```

```
<tagSet/>
</item>
</vpnConnectionSet>
</DescribeVpnConnectionsResponse>
```

## Example Request

This example describes any VPN connection you own that is associated with the customer gateway with ID `cgw-b4dc3961`, and whose state is either `pending` or `available`.

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## Related Actions

- [CreateVpnConnection](#) (p. 130)
- [DeleteVpnConnection](#) (p. 172)



# DescribeVpnGateways

## Description

Describes one or more of your virtual private gateways.

For more information about virtual private gateways, see [Adding an IPsec Hardware VPN to Your VPC](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VpnGatewayId.n*

One or more virtual private gateway IDs.

Type: String

Default: Describes all your virtual private gateways.

Required: No

### *Filter.n.Name*

The name of a filter. Filter names are case-sensitive. For more information about supported filter names, see the Supported Filters section.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. Filter values are case-sensitive. For more information about supported values for each filter, see the Supported Filters section.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain virtual private gateways. For example, you can use a filter to specify that you're interested in the virtual private gateways in the `pending` or `available` state. You can specify multiple values for a filter. The response includes information for a virtual private gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify virtual private gateways that are in a specific Availability Zone and are in the `pending` or `available` state. The response includes information for a virtual private gateway only if it matches all the filters that you specified. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### `attachment.state`

The current state of the attachment between the gateway and the VPC.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

`attachment.vpc-id`

The ID of an attached VPC.

Type: String

`availability-zone`

The Availability Zone for the virtual private gateway.

Type: String

`state`

The state of the virtual private gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

`tag-key`

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key=value` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

`tag-value`

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

`tag:key=value`

The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key, and the tag's value is provided in the `Filter.n.Value.m` parameter.

Example: To list the resources with the tag `Purpose=X`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list resources with the tag `Purpose=X` or the tag `Purpose=Y`, use:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

`type`

The type of virtual private gateway. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: `ipsec.1`

`vpn-gateway-id`

The ID of the virtual private gateway.

Type: String

## Response Elements

The following elements are returned in a `DescribeVpnGatewaysResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`vpnGatewaySet`

A list of virtual private gateways. Each virtual private gateway is wrapped in an `item` element.

Type: [VpnGatewayType](#) (p. 577)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidVpnGatewayID.NotFound](#) (p. 619)

## Examples

### Example Request

This example describes the specified virtual private gateway.

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

### Example Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGatewaySet>
    <item>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <availabilityZone>us-east-1a</availabilityZone>
      <attachments>
        <item>
          <vpcId>vpc-1a2b3c4d</vpcId>
          <state>attached</state>
        </item>
      </attachments>
      <tagSet/>
    </item>
  </vpnGatewaySet>
</DescribeVpnGatewaysResponse>
```

### Example Request

This example uses filters to describe any virtual private gateway you own that is in the us-east-1a Availability Zone, and whose state is either pending or available.

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1a
&Filter.2.Name=state
```

```
&Filter.2.Value.1=pending  
&Filter.2.Value.2=available  
&AUTHPARAMS
```

## Related Actions

- [CreateVpnGateway](#) (p. 135)
- [DeleteVpnGateway](#) (p. 176)

# DetachInternetGateway

## Description

Detaches an Internet gateway from a VPC, disabling connectivity between the Internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DetachInternetGatewayResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [DependencyViolation \(p. 619\)](#)
- [Gateway.NotAttached \(p. 619\)](#)
- [InvalidInternetGatewayID.NotFound \(p. 619\)](#)

## Examples

### Example Request

The example detaches the specified Internet gateway from the specified VPC.

```
https://ec2.amazonaws.com/?Action=DetachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

## Example Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 76)
- [DeleteInternetGateway](#) (p. 141)
- [DetachInternetGateway](#) (p. 26)
- [DescribeInternetGateways](#) (p. 239)

# DetachNetworkInterface

## Description

Detaches a network interface from an instance.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *AttachmentId*

The ID of the attachment.

Type: String

Default: None

Required: Yes

### *Force*

Specifies whether to force a detachment.

Type: Boolean

Default: None

Required: No

## Response Elements

The following elements are returned in a `DetachNetworkInterfaceResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAttachmentID.NotFound \(p. 619\)](#)
- [InvalidNetworkInterfaceAttachmentID.Malformed \(p. 619\)](#)
- [OperationNotPermitted \(p. 619\)](#)

## Examples

### Example Request

This example detaches the specified elastic network interface (ENI).

```
https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
```

## Example Response

```
<DetachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 28)
- [CreateNetworkInterface](#) (p. 86)
- [DeleteNetworkInterface](#) (p. 149)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ResetNetworkInterfaceAttribute](#) (p. 454)



# DetachVolume

## Description

Detaches an Amazon EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so results in the volume being stuck in a busy state while detaching. For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Note

If an Amazon EBS volume is the root device of an instance, it can't be detached while the instance is in the "running" state. To detach the root volume, stop the instance first.

When a root volume with an AWS Marketplace product code is detached from an instance, the product code is no longer associated with the instance.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: No

### *Device*

The device name.

Type: String

Default: None

Required: No

### *Force*

Forces detachment if the previous detachment attempt did not occur cleanly (logging into an instance, unmounting the volume, and detaching normally). This option can lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won't have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.

Type: Boolean

Default: None

Required: No

## Response Elements

The following elements are returned in a `DetachVolumeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

`volumeId`  
The ID of the volume.  
Type: `xsd:string`

`instanceId`  
The ID of the instance.  
Type: `xsd:string`

`device`  
The device name exposed to the instance.  
Type: `xsd:string`

`status`  
The attachment state.  
Type: `xsd:string`  
Valid values: `attaching` | `attached` | `detaching` | `detached`

`attachTime`  
The time stamp when the attachment initiated.  
Type: `xsd:dateTime`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectState \(p. 619\)](#)
- [InvalidAttachment.NotFound \(p. 619\)](#)
- [InvalidVolume.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example detaches volume `vol-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 121)
- [DeleteVolume](#) (p. 167)
- [DescribeVolumes](#) (p. 330)
- [AttachVolume](#) (p. 30)

# DetachVpnGateway

## Description

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to `detached` before you can delete the VPC or attach a different VPC to the virtual private gateway.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

*VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DetachVpnGatewayResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpnGatewayAttachment.NotFound \(p. 619\)](#)
- [InvalidVpnGatewayID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example detaches the specified virtual private gateway from the specified VPC.

```
https://ec2.amazonaws.com/?Action=DetachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

### Example Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</DetachVpnGatewayResponse>
```

### Related Actions

- [AttachVpnGateway](#) (p. 33)
- [DescribeVpnGateways](#) (p. 354)

# DisableVgwRoutePropagation

## Description

Disables a virtual private gateway (VGW) from propagating routes to the routing tables of a VPC.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId*

The ID of the routing table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DisableVgwRoutePropagationResponseType` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidRouteTableID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example disables the virtual private gateway `vgw-d8e09e8a` from automatically propagating routes to the routing table with ID `rtb-c98a35a0`.

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

## Example Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2014-
09-01/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DisableVgwRoutePropagationResponse>
```

## Related Actions

- [DisableVgwRoutePropagation](#) (p. 367)

# DisassociateAddress

## Description

Disassociates an Elastic IP address from the instance or network interface it's associated with.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon EC2 User Guide for Linux Instances*.

This is an idempotent action. If you perform the operation more than once, Amazon EC2 doesn't return an error.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *PublicIp*

[EC2-Classic] The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic

### *AssociationId*

[EC2-VPC] The association ID.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC

## Response Elements

The following elements are returned in a `DisassociateAddressResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAssociationID.NotFound \(p. 619\)](#)



## Examples

### Example Request

This example disassociates the specified Elastic IP address from the instance in EC2-Classic to which it is associated.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

### Example Request

This example disassociates the specified Elastic IP address from the instance in a VPC to which it is associated.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationId=eipassoc-aa7486c3
&AUTHPARAMS
```

### Example Response

```
<DisassociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 13)
- [DescribeAddresses](#) (p. 183)
- [ReleaseAddress](#) (p. 427)
- [AssociateAddress](#) (p. 19)

# DisassociateRouteTable

## Description

Disassociates a subnet from a route table.

After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses the routes in the VPC's main route table. For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *AssociationId*

The association ID representing the current association between the route table and subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DisassociateRouteTableResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAssociationID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example disassociates the specified route table from the subnet it's associated to.

```
https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-fdad4894
&AUTHPARAMS
```

## Example Response

```
<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateRouteTableResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 105)
- [AssociateRouteTable](#) (p. 24)
- [DeleteRouteTable](#) (p. 155)
- [DescribeRouteTables](#) (p. 286)
- [ReplaceRouteTableAssociation](#) (p. 437)

# EnableVgwRoutePropagation

## Description

Enables a virtual private gateway (VGW) to propagate routes to the routing tables of a VPC.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *RouteTableId*

The ID of the routing table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `EnableVgwRoutePropagationResponseType` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidRouteTableID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example enables the specified virtual private gateway to propagate routes automatically to the routing table with the ID `rtb-c98a35a0`.

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

## Example Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</EnableVgwRoutePropagation>
```

## Related Actions

- [DisableVgwRoutePropagation](#) (p. 367)

# EnableVolumeIO

## Description

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `EnableVolumeIOResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVolume.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example enables the I/O operations of the volume `vol-8888888`.

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-8888888
&AUTHPARAMS
```

## Example Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</EnableVolumeIOResponse>
```

## Related Actions

- [DescribeVolumeStatus](#) (p. 335)
- [ModifyVolumeAttribute](#) (p. 406)
- [DescribeVolumeAttribute](#) (p. 328)

# GetConsoleOutput

## Description

Gets the console output for the specified instance.

Instances do not have a physical monitor through which you can view their console output. They also lack physical controls that allow you to power up, reboot, or shut them down. To allow these actions, we provide them through the Amazon EC2 API and command line interface.

Instance console output is buffered and posted shortly after instance boot, reboot, and termination. Amazon EC2 preserves the most recent 64 KB output which is available for at least one hour after the most recent post.

For Linux/Unix instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a machine. This output is buffered because the instance produces it and then posts it to a store where the instance's owner can retrieve it.

For Windows instances, the instance console output displays the last three system event log errors.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `GetConsoleOutputResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceId`

The ID of the instance.

Type: `xsd:string`

### `timestamp`

The time the output was last updated.

Type: `xsd:dateTime`

### `output`

The console output, Base64 encoded.

Type: `xsd:string`



## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceID.Malformed \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example retrieves the console output for the specified instance.

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-10a64379
&AUTHPARAMS
```

### Example Response

```
<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lubiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChSZWZgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDlwMDYKQk1PUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFWOgpY
ZW46IDAuMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhdAwMDAwIChlc2FibGUpcj44ME1CIEhJ
R0hNRU0gYXZhaWxhYm91Lgo3MjdNQiBMT1dNRU0gYXZhaWxhYm91LgppOWCAoRXhlY3V0ZSBEaXNh
Ym91KSBwcm90ZWNoaW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRLY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbGlzdHMKS2VybVVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCBYb3N0b3JlLi4uIGRvbmUuCG==</output>
</GetConsoleOutputResponse>
```

## Related Actions

- [RunInstances \(p. 464\)](#)

# GetPasswordData

## Description

Retrieves the encrypted administrator password for an instance running Windows.

The Windows password is generated at boot if the `EC2Config` service plugin, `Ec2SetPassword`, is enabled. This usually only happens the first time an AMI is launched, and then `Ec2SetPassword` is automatically disabled. The password is not generated for rebundled AMIs unless `Ec2SetPassword` is enabled before bundling.

The password is encrypted using the key pair that you specified when you launched the instance. You must provide the corresponding key pair file.

Password generation and encryption takes a few moments. We recommend that you wait up to 15 minutes after launching an instance before trying to retrieve the generated password.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId*

The ID of a Windows instance.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `GetPasswordDataResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceId`

The ID of the instance.

Type: `xsd:string`

### `timestamp`

The time the data was last updated.

Type: `xsd:dateTime`

### `passwordData`

The password of the instance.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceId.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example returns the encrypted version of the administrator password for the specified instance.

```
https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-10a64379
&AUTHPARAMS
```

### Example Response

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-2574e22a</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
```

## Related Actions

- [RunInstances](#) (p. 464)

# ImportInstance

## Description

Creates an import instance task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-import-volume` command. For more information, see [Step 4: Importing Your VM into Amazon EC2](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *Description*

A description for the instance being imported.

Type: String

Default: None

Required: No

### *LaunchSpecification.Architecture*

The architecture of the instance.

Type: String

Valid values: i386 | x86\_64

Default: None

Required: Yes

### *LaunchSpecification.GroupName.n*

One or more security group names. This is not supported for VMs imported into a VPC, which are assigned the default security group. After a VM is imported into a VPC, you can specify another security group using the AWS Management Console.

Type: String

Default: Your default security group.

Required: No

### *LaunchSpecification.UserData*

User data to be made available to the instance.

Type: String

Default: None

Required: No

### *LaunchSpecification.InstanceType*

The instance type. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*. For more information about the Linux instance types you can import, see [Before You Get Started](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: Yes

### *LaunchSpecification.Placement.AvailabilityZone*

The Availability Zone to launch the instance into.

Type: String

Default: Amazon EC2 chooses a zone for you.

Required: No

### *LaunchSpecification.Monitoring.Enabled*

Indicates whether to enable detailed monitoring for the instance.

Type: Boolean  
Default: `false`  
Required: No

*LaunchSpecification.SubnetId*

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String  
Default: None  
Required: No

*LaunchSpecification.InstanceInitiatedShutdownBehavior*

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String  
Valid values: `stop` | `terminate`  
Default: `stop`  
Required: No

*LaunchSpecification.PrivateIpAddress*

[EC2-VPC] Optionally, you can use this parameter to assign the instance a specific available IP address from the IP address range of the subnet.

Type: String  
Default: Amazon EC2 selects an IP address from the IP address range of subnet for the instance.  
Required: No

*DiskImage.n.Image.Format*

The file format of the disk image.

Type: String  
Valid values: `VMDK` | `RAW` | `VHD`  
Default: None  
Required: Yes

*DiskImage.n.Image.Bytes*

The number of bytes in the disk image.

Type: Long  
Default: None  
Required: Yes

*DiskImage.n.Image.ImportManifestUrl*

The manifest for the disk image, stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Signing and Authenticating REST Requests" section of the [Signing and Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String  
Default: None  
Required: Yes

*DiskImage.n.Image.Description*

An optional description for the disk image.

Type: String  
Default: None  
Required: No

*DiskImage.n.Volume.Size*

The size, in GiB, of the Amazon EBS volume that will hold the converted image.

Required: Yes

*Platform*

The instance operating system.

Type: String

Default: None

Valid values: Windows | Linux

Required: No

## Response Elements

The following elements are returned in an `ImportInstanceResponse` element.

`conversionTask`

Information about the import instance task.

Type: [ConversionTaskType](#) (p. 495)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InstanceLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

```
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

### Example Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <conversionTask>
    <conversionTaskId>import-i-ffvko9js</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
  </importInstance>
</ImportInstanceResponse>
```

```
<volumes>
  <item>
    <bytesConverted>0</bytesConverted>
    <availabilityZone>us-east-1a</availabilityZone>
    <image>
      <format>VMDK</format>
      <size>1179593728</size>
      <importManifestUrl>
        https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01T1TtL0uR7KE
tEXAMPLE%3D
      </importManifestUrl>
    </image>
    <description/>
    <volume>
      <size>12</size>
      <id>vol-1a2b3c4d</id>
    </volume>
    <status>active</status>
    <statusMessage/>
  </item>
</volumes>
<instanceId>i-12655a7f</instanceId>
<description/>
</importInstance>
</conversionTask>
</ImportInstanceResponse>
```

## Related Actions

- [ImportVolume](#) (p. 388)
- [DescribeConversionTasks](#) (p. 193)
- [CancelConversionTask](#) (p. 47)

# ImportKeyPair

## Description

Imports the public key from an RSA key pair that you created with a third-party tool. Compare this with `CreateKeyPair`, in which AWS creates the key pair and gives the keys to you (AWS keeps a copy of the public key). With `ImportKeyPair`, you create the key pair and give AWS just the public key. The private key is never transferred between you and AWS.

You can easily create an RSA key pair using the `ssh-keygen` command line tool (provided with the standard OpenSSH installation). Standard library support for RSA key pair creation is also available in Java, Ruby, Python, and many other programming languages.

Supported formats:

- OpenSSH public key format (the format in `~/.ssh/authorized_keys`)
- Base64 encoded DER format
- SSH public key file format as specified in [RFC4716](#)

DSA keys are not supported. Make sure your key generator is set up to create RSA keys.

Supported lengths: 1024, 2048, and 4096.

Note that you can have up to five thousand key pairs per region.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *KeyName*

A unique name for the key pair.

Type: String

Default: None

Required: Yes

### *PublicKeyMaterial*

The public key. You must base64 encode the public key material before sending it to AWS.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `ImportKeyPairResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `keyName`

The key pair name you provided.

Type: `xsd:string`



keyFingerprint

The MD5 public key fingerprint as specified in section 4 of [RFC 4716](#).

Type: xsd:string

## Error

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidKey.Format \(p. 619\)](#)
- [InvalidKeyPair.Duplicate \(p. 619\)](#)

## Examples

### Example Request

This example imports the public key named my-key-pair.

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAfICCQD6m7oRw0uXOjANBgqhkiG9w0BAQUFADCBiDELMAkGA1UEBh
MC
VVMxCzAJBgNVBAGTAldBMRAdDgYDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAStC01BTSBDb25zb2x1MRIwEAYDVQQDEw1UZXR0Q21sYWMxH3Ad
BgkqhkiG9w0BCQEWEG5vb25lQGftYXpvi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRAdDgYD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAStC01BTSBDb25z
b2x1MRIwEAYDVQQDEw1UZXR0Q21sYWMxH3AdBgkqhkiG9w0BCQEWEG5vb25lQGft
YXpvi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLygVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZnzcVQAaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntned9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJlJ00zbbNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjStb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
&AUTHPARAMS
```

### Example Response

The response includes the MD5 public key fingerprint as specified in section 4 of [RFC4716](#).

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <keyName>my-key-pair</keyName>
  <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</key
  Fingerprint>
</ImportKeyPairResponse>
```

## Related Actions

- [CreateKeyPair](#) (p. 78)
- [DescribeKeyPairs](#) (p. 242)
- [DeleteKeyPair](#) (p. 143)

# ImportVolume

## Description

Creates an import volume task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-import-volume` command in the Amazon EC2 command-line interface (CLI) tools. For more information, see [Importing Your Volumes into Amazon EBS](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *AvailabilityZone*

The Availability Zone for the resulting Amazon EBS volume.

Type: String

Default: None

Required: Yes

### *Image.Format*

The file format of the disk image.

Type: String

Valid values: VMDK | RAW | VHD

Default: None

Required: Yes

### *Image.Bytes*

The number of bytes in the disk image.

Type: Long

Default: None

Required: Yes

### *Image.ImportManifestUrl*

The manifest for the disk image, stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Signing and Authenticating REST Requests" section of the [Signing and Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Default: None

Required: Yes

### *Description*

An optional description for the volume being imported.

Type: String

Default: None

Required: No

### *Volume.Size*

The size, in GiB, of an Amazon EBS volume to hold the converted image.

Type: Integer

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `ImportVolumeResponse` element.

`conversionTask`  
Information about the import volume task.  
Type: [ConversionTaskType](#) (p. 495)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [ResourceLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the AWS us-east-1 region.

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-
43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmani
fest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS>
```

### Example Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>0</bytesConverted>
      <availabilityZone>us-east-1c</availabilityZone>
      <description/>
      <image>
        <format>VMDK</format>
        <size>128696320</size>
        <importManifestUrl>
          https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
          15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
          KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx
          tEXAMPLE%3D
        </importManifestUrl>
      </image>
    </importVolume>
  </conversionTask>
</ImportVolumeResponse>
```

```
        </importManifestUrl>
        <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
    </image>
    <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
    </volume>
</importVolume>
<state>active</state>
<statusMessage/>
</conversionTask>
</ImportVolumeResponse>
```

## Related Actions

- [ImportInstance](#) (p. 381)
- [DescribeConversionTasks](#) (p. 193)
- [CancelConversionTask](#) (p. 47)

# ModifyImageAttribute

## Description

Modifies the specified attribute of the specified AMI. You can specify only one attribute at a time.

### Note

You can't modify AWS Marketplace product codes. Images with AWS Marketplace product codes can't be made public.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *LaunchPermission.Add.n.UserId*

Adds the specified AWS account ID to the list of launch permissions for the AMI.

Type: String

Default: None

Required: No

### *LaunchPermission.Remove.n.UserId*

Removes the specified AWS account ID from the list of launch permissions for the AMI.

Type: String

Default: None

Required: No

### *LaunchPermission.Add.n.Group*

Adds the specified group to the list of launch permissions for the image. The only valid value is `all`.

Type: String

Valid value: `all` (for all Amazon EC2 users)

Default: None

Required: No

### *LaunchPermission.Remove.n.Group*

Removes the specified group from the list of launch permissions for the image. The only valid value is `all`.

Type: String

Valid value: `all` (for all Amazon EC2 users)

Default: None

Required: No

### *ProductCode.n*

Adds the specified product code to the specified instance store-backed AMI. After you add a product code to an AMI, it can't be removed.

Type: String

Default: None

Required: No

### *Description.Value*

Changes the AMI description to the specified value.

Type: String  
Default: None  
Required: No

## Response Elements

The following elements are returned in a `ModifyImageAttributeResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAMIAttributeItemValue \(p. 619\)](#)
- [InvalidAMIID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example makes the AMI public (for example, so any AWS account can use it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Request

This example makes the AMI private (for example, so that only you as the owner can use it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

### Example Request

This example grants launch permission to the AWS account with ID 111122223333.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=111122223333
&AUTHPARAMS
```

## Example Request

This example removes launch permission from the AWS account with ID 111122223333.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.UserId=111122223333
&AUTHPARAMS
```

## Example Request

This example adds the 774F4FF8 product code to the ami-61a54008 AMI.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&ProductCode.1=774F4FF8
&AUTHPARAMS
```

## Example Request

This example changes the description of the AMI to New Description.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&Description.Value=New Description
&AUTHPARAMS
```

## Example Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</ModifyImageAttributeResponse>
```

## Related Actions

- [ResetImageAttribute](#) (p. 450)
- [DescribeImageAttribute](#) (p. 205)



# ModifyInstanceAttribute

## Description

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

### Note

To modify some attributes, the instance must be stopped. For more information, see [Modifying a Stopped Instance](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *BlockDeviceMapping.Value*

Modifies the `DeleteOnTermination` attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for `DeleteOnTermination`, the default is `true` and the volume is deleted when the instance is terminated.

### Note

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see [Updating the Block Device Mapping when Launching an Instance](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: [InstanceBlockDeviceMappingItemType \(p. 519\)](#)

Default: None

Example: `&BlockDeviceMapping.1.Ebs.DeleteOnTermination=true`

Required: No

### *DisableApiTermination.Value*

If the value is `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: Boolean

Default: None

Required: No

### *EbsOptimized*

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

### *GroupId.n*

[EC2-VPC] Changes the instance's security group. You must specify at least one security group, even if it's just the default security group for the VPC. You must specify the security group ID, not the security group name.

For example, if you want the instance to be in sg-1a1a1a1a and sg-9b9b9b9b, specify `GroupId.1=sg-1a1a1a1a` and `GroupId.2=sg-9b9b9b9b`.

Type: String

Default: None

Required: No

*InstanceInitiatedShutdownBehavior.Value*

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid values: `stop` | `terminate`

Default: None

Required: No

*InstanceType.Value*

Changes the instance type to the specified value. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*. An `InvalidInstanceAttributeValue` error is returned if the instance type is not valid.

Type: String

Default: None

Required: No

*Kernel.Value*

Changes the instance's kernel to the specified value.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

*Ramdisk.Value*

Changes the instance's RAM disk to the specified value.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

*SourceDestCheck.Value*

Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: Boolean

Default: None

Required: No

*SriovNetSupport.Value*

Set to `simple` to enable enhanced networking for the instance and any AMIs that you create from the instance. There is no way to disable enhanced networking at this time. For more information, see [Enabling Enhanced Networking on Linux Instances](#) in the *Amazon EC2 User Guide for Linux Instances* or [Enabling Enhanced Networking on Windows Instances](#) in the *Amazon EC2 User Guide for Microsoft Windows Instances*.

### Warning

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: String

Valid values: `simple`

Default: None

Required: No

*UserData.Value*

Changes the instance's user data to the specified value.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `ModifyInstanceAttributeResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectInstanceState \(p. 619\)](#)
- [InvalidInstanceAttributeValue \(p. 619\)](#)
- [InvalidInstanceId \(p. 619\)](#)
- [InvalidInstanceId.NotFound \(p. 619\)](#)
- [SecurityGroupsPerInstanceLimitExceeded \(p. 619\)](#)
- [UnsupportedOperation \(p. 619\)](#)

## Examples

### Example Request

This example changes the instance type of the specified instance. The instance must be in the `stopped` state.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceType.Value=m1.small
&AUTHPARAMS
```

## Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

## Example Request

This example changes the `InstanceInitiatedShutdownBehavior` attribute of the specified instance.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceInitiatedShutdownBehavior.Value=terminate
&AUTHPARAMS
```

## Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

## Example Request

This example changes the `DisableApiTermination` attribute of the specified instance.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&DisableApiTermination.Value=true
&AUTHPARAMS
```

## Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

## Related Actions

- [ResetInstanceAttribute](#) (p. 452)
- [DescribeInstanceAttribute](#) (p. 216)

# ModifyNetworkInterfaceAttribute

## Description

Modifies the specified network interface attribute. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *Description.Value*

A description for the network interface.

Type: String

Default: None

Required: No

### *SecurityGroupId.n*

Changes the security groups for the network interface. The new set of groups you specify replaces the current set. You must specify at least one group, even if it's just the default security group in the VPC. You must specify the ID of the security group, not the name.

For example, if you want the instance to be in sg-1a1a1a1a and sg-9b9b9b9b, specify GroupId.1=sg-1a1a1a1a and GroupId.2=sg-9b9b9b9b.

Type: String

Default: None

Required: No

### *SourceDestCheck.Value*

Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon VPC User Guide*.

Type: Boolean

Default: None

Required: No

### *Attachment.AttachmentId*

The ID of the interface attachment.

Type: String

Default: None

Required: Conditional

Condition: This parameter is required if you are modifying the `DeleteOnTermination` attribute of an interface attachment.

### *Attachment.DeleteOnTermination*

Indicates whether to delete the attachment when terminating the instance.

Type: Boolean

Default: None

Required: Conditional

Condition: You must specify a specific attachment ID to change this attribute.

## Response Elements

The following elements are returned in a `ModifyNetworkInterfaceAttributeResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [SecurityGroupsPerInterfaceLimitExceeded \(p. 619\)](#)

## Examples

### Example Request

This example sets source/destination checking to `false` for the specified network interface.

```
https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS
```

### Example Response

```
<ModifyNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2014-09-01/">
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface \(p. 28\)](#)
- [DetachNetworkInterface \(p. 360\)](#)
- [CreateNetworkInterface \(p. 86\)](#)
- [DeleteNetworkInterface \(p. 149\)](#)
- [DescribeNetworkInterfaceAttribute \(p. 251\)](#)
- [DescribeNetworkInterfaces \(p. 253\)](#)
- [ResetNetworkInterfaceAttribute \(p. 454\)](#)

# ModifyReservedInstances

## Description

Modifies the Availability Zone, instance count, instance type, or network platform (EC2-Classic or EC2-VPC) of your Reserved Instances. The Reserved Instances to be modified must be identical, except for Availability Zone, network platform, and instance type.

For more information, see [Modifying Reserved Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*reservedInstancesID*

The ID of the Reserved Instances to modify.

Type: String

Default: None

Required: Yes

*clientToken*

A unique, case-sensitive token you provide to ensure idempotency of your modification request.

Type: String

Default: None

Required: No

*targetConfiguration*

The configuration settings for the Reserved Instances to modify.

Type: [ReservedInstancesConfigurationSetItemType \(p. 553\)](#)

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ModifyReservedInstancesResponse` element.

*requestId*

The ID for the request.

Type: `xsd:string`

*reservedInstancesModificationId*

The ID for the modification.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInput \(p. 619\)](#)

## Examples

### Example Request

```
https://ec2.amazonaws.com/?Action=ModifyReservedInstances
&ClientToken=myClientToken
&ReservedInstancesConfigurationSetItemType.0.AvailabilityZone=us-east-1a
&ReservedInstancesConfigurationSetItemType.0.InstanceCount=1
&ReservedInstancesConfigurationSetItemType.0.Platform=EC2-VPC
&ReservedInstancesConfigurationSetItemType.0.InstanceType=m1.small
&ReservedInstancesId.0=d16f7a91-4d0f-4f19-9d7f-a74d26b1ccfa
&AUTHPARAMS
```

### Example Response

```
<ModifyReservedInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2013-08-15/'>
  <requestId>bef729b6-0731-4489-8881-2258746ae163</requestId>
  <reservedInstancesModificationId>rimod-3aae219d-3d63-47a9-a7e9-e764example</re
  servedInstancesModificationId>
</ModifyReservedInstancesResponse>
```

## Related Actions

- [DescribeReservedInstancesModifications](#) (p. 273)



# ModifySnapshotAttribute

## Description

Adds or removes permission settings for the specified snapshot. You may add or remove specified AWS account IDs from a snapshot's list of create volume permissions, but you cannot do both in a single API call. If you need to both add and remove account IDs for a snapshot, you must use multiple API calls.

### Note

Snapshots with AWS Marketplace product codes can't be made public.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Add.n.UserId*

Adds the specified AWS account ID to the snapshot's list of create volume permissions.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Add.n.Group*

Adds the specified group to the snapshot's list of create volume permissions. The only valid value is all.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Remove.n.UserId*

Removes the specified AWS account ID from the snapshot's list of create volume permissions.

Type: String

Default: None

Required: No

### *CreateVolumePermission.Remove.n.Group*

Removes the specified group from the snapshot's list of create volume permissions.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `ModifySnapshotAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

return

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidSnapshot.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example makes the `snap-1a2b3c4d` snapshot public, and gives the account with ID `111122223333` permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

This example makes the `snap-1a2b3c4d` snapshot public, and removes the account with ID `111122223333` from the list of users with permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

## Related Actions

- [DescribeSnapshotAttribute \(p. 296\)](#)
- [DescribeSnapshots \(p. 299\)](#)
- [ResetSnapshotAttribute \(p. 456\)](#)
- [CreateSnapshot \(p. 110\)](#)

# ModifySubnetAttribute

## Description

Modifies a subnet attribute.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

### *MapPublicIpOnLaunch.Value*

Modifies the public IP addressing behavior for the subnet. Specify `true` to indicate that instances launched into the specified subnet should be assigned a public IP address. If set to `true`, the instance receives a public IP address only if the instance is launched with a single, new network interface with the device index of 0.

Type: Boolean

Default: If modifying a nondefault subnet, the default is `false`; if modifying a default subnet, the default is `true`.

Required: Yes

## Response Elements

The following elements are returned in a `ModifySubnetAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidSubnetID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example modifies `subnet-1a2b3c4d` to specify that all instances launched into this subnet are assigned a public IP address.

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
&MapPublicIpOnLaunch.Value=true
&AUTHPARAMS
```

### Example Response

```
<ModifySubnetAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySubnetAttributeResponse>
```

## Related Actions

- [DescribeSubnets](#) (p. 318)
- [CreateSubnet](#) (p. 115)

# ModifyVolumeAttribute

## Description

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first calling [EnableVolumeIO \(p. 375\)](#) action to enable I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations without calling [EnableVolumeIO \(p. 375\)](#) action by setting the `AutoEnableIO` attribute of the volume to `true`. We recommend that you change this attribute only for volumes that are stateless, or disposable, or for boot volumes.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VolumeId*

The ID of the volume.

Type: String

Required: Yes

### *AutoEnableIO.Value*

Indicates whether the volume should be auto-enabled for I/O operations.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned in a `ModifyVolumeAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVolume.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example modifies the attribute of the volume vol-12345678.

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-12345678
&AutoEnableIO.Value=true
&AUTHPARAMS
```

### Example Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <return>true</return>
</ModifyVolumeAttributeResponse>
```

### Related Actions

- [DescribeVolumeAttribute](#) (p. 328)
- [DescribeVolumeStatus](#) (p. 335)

# ModifyVpcAttribute

## Description

Modifies the specified attribute of the specified VPC.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *VpcId*

The ID of the VPC.

Type: String

Required: Yes

### *EnableDnsSupport.Value*

Indicates whether DNS resolution is supported for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: Boolean

Required: No

### *EnableDnsHostnames.Value*

Indicates whether the DNS resolution is supported for the VPC. If this attribute is `false`, the Amazon provided DNS service in the VPC that resolves public DNS hostnames to IP addresses is not enabled. If this attribute is `true`, queries to the Amazon provided DNS server at the 169.254.169.253 IP address, or the reserved IP address at the base of the VPC network range "plus two" will succeed.

You can only set `enableDnsHostnames` to `true` if you also set the `EnableDnsSupport` attribute to `true`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned in a `ModifyVpcAttributeResponse` structure.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidVpcID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example disables support for DNS hostnames in the specified VPC.

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute  
&VpcId=vpc-1a2b3c4d  
&EnableDnsHostnames.Value=false  
&AUTHPARAMS
```



# MonitorInstances

## Description

Enables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

*InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `MonitorInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`instancesSet`

A list of instances. Each instance is wrapped in an `item` element.

Type: [MonitorInstancesResponseSetItemType](#) (p. 538)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidInstanceId.NotFound](#) (p. 619)
- [InvalidState](#) (p. 619)

## Examples

### Example Request

This example enables monitoring for two instances.

```
https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

## Example Response

```
<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
        <state>pending</state>
      </monitoring>
    </item>
    <item>
      <instanceId>i-23a3397d</instanceId>
      <monitoring>
        <state>pending</state>
      </monitoring>
    </item>
  </instancesSet>
</MonitorInstancesResponse>
```

## Related Actions

- [UnmonitorInstances](#) (p. 482)
- [RunInstances](#) (p. 464)

# PurchaseReservedInstancesOffering

## Description

Purchases a Reserved Instance for use with your account. With Amazon EC2 Reserved Instances, you obtain a capacity reservation for a certain instance configuration over a specified period of time. You pay a lower usage rate than with On-Demand instances for the time that you actually use the capacity reservation.

Starting with the 2011-11-01 API version, AWS expanded its offering of Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*.

The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` only lists information about the Medium Utilization Reserved Instance offering type.

For information about Reserved Instance pricing tiers, see [Understanding Reserved Instance pricing tiers](#) in the *Amazon EC2 User Guide for Linux Instances*. For more information about Reserved Instances, see [Reserved Instances](#) also in the *Amazon EC2 User Guide for Linux Instances*.

You determine the type of the Reserved Instances offerings by including the optional `offeringType` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `ReservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

Starting with the 2012-08-15 API version, you can also purchase Reserved Instances from the Reserved Instance Marketplace. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about Amazon EC2 Reserved Instances available directly from AWS, plus instance offerings available on the Reserved Instance Marketplace. If you are using tools that predate the 2012-08-15 API version, the `DescribeReservedInstancesOfferings` action only lists information about Amazon EC2 Reserved Instances available directly from AWS.

For more information about the Reserved Instance Marketplace, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide for Linux Instances*.

You determine the Reserved Instance Marketplace offerings by specifying `true` for the optional `includeMarketplace` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `reservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

`reservedInstancesOfferingId`

The ID of the Reserved Instance offering to purchase.

Type: String

Default: None

Required: Yes

*instanceCount*

The number of Reserved Instances to purchase.

Type: Integer

Default: None

Required: Yes

*limitPrice*

Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: [ReservedInstanceLimitPriceType](#) (p. 553)

Required: No

## Response Elements

The following elements are returned in a `PurchaseReservedInstancesOfferingResponse` element.

*requestId*

The ID of the request.

Type: `xsd:string`

*reservedInstancesId*

The IDs of the purchased Reserved Instances.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidParameterValue](#) (p. 619)
- [ReservedInstancesLimitExceeded](#) (p. 619)

## Examples

### Example Request

This example uses `LimitPrice` to limit the total purchase order of Reserved Instances from Reserved Instance Marketplace.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

### Example Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2014-09-01/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>

</PurchaseReservedInstancesOfferingResponse>
```

## Example Request

This example illustrates a purchase of a Reserved Instances offering.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS
```

## Example Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>

</PurchaseReservedInstancesOfferingResponse>
```

## Find and Purchase a Reserved Instance

### To find and purchase a Reserved Instance

1. Use [DescribeReservedInstancesOfferings \(p. 277\)](#) to get a list of Reserved Instance offerings that match your specifications. In this example, we'll request a list of Linux/Unix, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

#### Note

When using the Query API, all strings must be URL-encoded.

2. From the list of available Reserved Instances in the previous example, select the marketplace offering and specify a limit price.
3. To verify the purchase, check for your new Reserved Instance with [DescribeReservedInstances \(p. 265\)](#).

You can run your Reserved Instance any time after your purchase is complete. To run your Reserved Instance, you launch it in the same way you launch an On-Demand Instance. Make sure to specify the same criteria that you specified for your Reserved Instance. AWS automatically charges you the lower hourly rate.

## Example Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%20UNIX
```

```
&Version=2014-09-01  
&AUTHPARAMS
```

## Example Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon  
aws.com/doc/2014-09-01/">  
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>  
  <reservedInstancesOfferingsSet>  
    <item>  
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</re  
servedInstancesOfferingId>  
      <instanceType>m1.large</instanceType>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <duration>90720000</duration>  
      <fixedPrice>96.03</fixedPrice>  
      <usagePrice>0.027</usagePrice>  
      <productDescription>Linux/UNIX</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Light Utilization</offeringType>  
      <recurringCharges/>  
      <marketplace>true</marketplace>  
      <pricingDetailsSet>  
        <item>  
          <price>96.03</price>  
          <count>1</count>  
        </item>  
      </pricingDetailsSet>  
    </item>  
    <item>  
      <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</re  
servedInstancesOfferingId>  
      <instanceType>m1.xlarge</instanceType>  
      <availabilityZone>us-east-1b</availabilityZone>  
      <duration>28512000</duration>  
      <fixedPrice>61.0</fixedPrice>  
      <usagePrice>0.034</usagePrice>  
      <productDescription>Linux/UNIX</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Light Utilization</offeringType>  
      <recurringCharges>  
        <item>  
          <frequency>Hourly</frequency>  
          <amount>0.29</amount>  
        </item>  
      </recurringCharges>  
      <marketplace>true</marketplace>  
      <pricingDetailsSet>  
        <item>  
          <price>61.0</price>  
          <count>2</count>  
        </item>  
      </pricingDetailsSet>  
    </item>
```

```
</reservedInstancesOfferingsSet>  
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering  
&ReservedInstancesOfferingId=2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE  
&InstanceCount=1  
&LimitPrice.Amount=200  
&AUTHPARAMS
```

## Example Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon  
aws.com/doc/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>  
</PurchaseReservedInstancesOfferingResponse>
```

## Example Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances  
&AUTHPARAMS
```

## Example Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-  
01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <reservedInstancesSet>  
    ...  
    <item>  
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedIn  
stancesId>  
      <instanceType>m1.xlarge</instanceType>  
      <availabilityZone>us-east-1b</availabilityZone>  
      <duration>31536000</duration>  
      <fixedPrice>61.0</fixedPrice>  
      <usagePrice>0.034</usagePrice>  
      <instanceCount>3</instanceCount>  
      <productDescription>Linux/UNIX</productDescription>  
      <state>active</state>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Light Utilization</offeringType>  
      <recurringCharges/>  
    </item>  
    ...  
  </reservedInstancesSet>  
</DescribeReservedInstancesResponse>
```

## Related Actions

- [DescribeReservedInstancesOfferings](#) (p. 277)
- [DescribeReservedInstances](#) (p. 265)



# RebootInstances

## Description

Requests a reboot of one or more instances. This operation is asynchronous; it only queues a request to reboot the specified instances. The operation succeeds if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.

For more information, see [Reboot Your Instance](#) and [Getting Console Output and Rebooting Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `RebootInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectState \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example reboots two instances.

```
https://ec2.amazonaws.com/?Action=RebootInstances  
&InstanceId.1=i-1a2b3c4d  
&InstanceId.2=i-4d3acf62  
&AUTHPARAMS
```

## Example Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</RebootInstancesResponse>
```

## Related Actions

- [RunInstances](#) (p. 464)

# RegisterImage

## Description

Registers an AMI. When you're creating an AMI, this is the final step you must complete before you can launch an instance from the AMI. For more information about creating AMIs, see [Creating Your Own AMIs](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Note

For Amazon EBS-backed instances, the [CreateImage](#) (p. 69) operation creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use the `RegisterImage` action to create an EBS-backed AMI from a snapshot of a root device volume. For more information, see [Launching an Instance from a Snapshot](#) in the *Amazon EC2 User Guide for Linux Instances*.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by an instance store volume invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

### Note

You can't register an image if a secondary (non-root) snapshot has AWS Marketplace product codes.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *ImageLocation*

The full path to your AMI manifest in Amazon S3 storage.

Type: String

Default: None

Required: Conditional

Condition: Required if registering an instance store-backed AMI

### *Name*

A name for your AMI.

Type: String

Default: None

Constraints: 3-128 alphanumeric characters, parentheses (`()`), square brackets (`[]`), spaces (), periods (`.`), slashes (`/`), dashes (`-`), single quotes (`'`), at-signs (`@`), or underscores (`_`)

Required: Yes

### *Description*

A description for your AMI.

Type: String

Default: None

Constraints: Up to 255 characters.

Required: No

### *Architecture*

The architecture of the AMI.

Type: String

Valid values: `i386` | `x86_64`

Default: For Amazon EBS-backed AMIs, `i386`. For instance store-backed AMIs, the architecture specified in the manifest file.

Required: No

*RootDeviceName*

The name of the root device (for example, `/dev/sda1`, or `xvda`).

Type: String

Default: None

Required: Conditional

Condition: Required if registering an Amazon EBS-backed AMI

*BlockDeviceMapping.n.DeviceName*

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify *DeviceName* with the root device name and *BlockDeviceMapping.n.Ebs.SnapshotId* with the snapshot ID.

*BlockDeviceMapping.n.NoDevice*

Suppresses a device mapping.

Type: Boolean

Default: `true`

Required: No

*BlockDeviceMapping.n.VirtualName*

The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Constraint: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Required: No

*BlockDeviceMapping.n.Ebs.SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify *SnapshotId* with the snapshot ID, and *BlockDeviceMapping.n.DeviceName* with the root device name.

*BlockDeviceMapping.n.Ebs.VolumeSize*

The size of the volume, in GiBs.

Type: Integer

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Constraints: If the volume type is `io1`, the minimum size of the volume is 10 GiB. If you specify *SnapshotId* and *VolumeSize*, *VolumeSize* must be equal to or larger than the size of the snapshot.

Required: Conditional

Condition: Required unless you're creating the volume from a snapshot.

*BlockDeviceMapping.n.Ebs.DeleteOnTermination*

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Default: true

Required: No

*BlockDeviceMapping.n.Ebs.VolumeType*

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Required: No

*BlockDeviceMapping.n.Ebs.Iops*

Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume.

Type: Integer

Valid values: Range is 100 to 4,000.

Default: None

Required: Conditional

Condition: Required when the volume type is `io1`; not used with `standard` or `gp2` volumes.

*BlockDeviceMapping.n.Ebs.Encrypted*

Specifies whether the volume is encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are automatically encrypted. There is no way to create an encrypted volume from an unencrypted snapshot or vice versa. If your AMI uses encrypted volumes, you can only launch it on supported instance types. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: Boolean

Default: `false`

Required: No

*VirtualizationType*

The type of virtualization.

Type: String

Valid values: `paravirtual` | `hvm`

Default: `paravirtual`

Required: No

*KernelId*

The ID of the kernel.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

*RamdiskId*

The ID of the RAM disk.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

#### *SriovNetSupport*

Set to `simple` to enable enhanced networking for the AMI and any instances that you launch from the AMI. There is no way to disable enhanced networking at this time. For more information, see [Enabling Enhanced Networking on Linux Instances](#) in the *Amazon EC2 User Guide for Linux Instances* or [Enabling Enhanced Networking on Windows Instances](#) in the *Amazon EC2 User Guide for Microsoft Windows Instances*.

#### **Warning**

This option is supported only for HVM AMIs. Specifying this option with a PV AMI can make instances launched from the AMI unreachable.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `RegisterImageResponse` element.

#### `requestId`

The ID of the request.

Type: `xsd:string`

#### `imageId`

The ID of the newly registered AMI.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [IncorrectInstanceState](#) (p. 619)
- [InvalidAMIName.Duplicate](#) (p. 619)
- [InvalidAMIName.Malformed](#) (p. 619)
- [InvalidBlockDeviceMapping](#) (p. 619)
- [InvalidManifest](#) (p. 619)

## Examples

### Example Request

This example registers an AMI using the specified `my-new-image.manifest.xml` manifest file, located in the bucket named `myawsbucket`.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

## Example Request

This example specifies a snapshot for the root device of an Amazon EBS-backed AMI.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&Name=MyImage
&AUTHPARAMS
```

## Example Request

This example registers an AMI with a block device mapping for three Amazon EBS volumes. The first volume is the root device volume based on an Amazon EBS snapshot. The second volume is based on another snapshot. The third volume is an empty 100 GiB Amazon EBS volume.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-2a2b3c4d
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

## Example Request

This example registers an AMI with two volumes. The first volume is the root device volume based on an Amazon EBS snapshot. The `DeleteOnTermination` flag of the root volume is set to `false`. The second volume is an instance store volume, `ephemeral0`.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&BlockDeviceMapping.1.Ebs.VolumeSize=80
&BlockDeviceMapping.1.Ebs.DeleteOnTermination=false
&BlockDeviceMapping.2.DeviceName=/dev/sdc
&BlockDeviceMapping.2.VirtualName=ephemeral0
&Name=MyImage
&AUTHPARAMS
```

## Related Actions

- [DescribeImages](#) (p. 208)
- [DeregisterImage](#) (p. 178)

# RejectVpcPeeringConnection

## Description

Rejects a VPC peering connection request. The VPC peering connection must be in the `pending-acceptance` state. Use the [DescribeVpcPeeringConnections](#) (p. 342) request to view your outstanding VPC peering connection requests.

### Note

To delete an active VPC peering connection, or to delete a VPC peering connection request that you initiated, use the [DeleteVpcPeeringConnection](#) (p. 170) command.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *VpcPeeringConnectionId*

The ID of the VPC peering connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `RejectVpcPeeringConnection` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidStateTransition](#) (p. 619)
- [InvalidVpcPeeringConnectionId.Malformed](#) (p. 619)
- [InvalidVpcPeeringConnectionId.NotFound](#) (p. 619)
- [MissingParameter](#) (p. 619)

## Examples

### Example Request

This example rejects the specified VPC peering connection request.



```
https://ec2.amazonaws.com/?Action=RejectVpcPeeringConnection
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

## Example Response

```
<RejectVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-
09-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</RejectVpcPeeringConnectionResponse>
```

## Related Actions

- [DescribeVpcPeeringConnections](#) (p. 342)
- [CreateVpcPeeringConnection](#) (p. 127)
- [AcceptVpcPeeringConnection](#) (p. 12)
- [DeleteVpcPeeringConnection](#) (p. 170)
- [CreateRoute](#) (p. 102)
- [ReplaceRoute](#) (p. 434)

# ReleaseAddress

## Description

Releases the specified Elastic IP address.

### Important

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to you. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an `AuthFailure` error if the address is already allocated to another AWS account.

An Elastic IP address is for use either in the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon EC2 User Guide for Linux Instances*.

[EC2-Classic, default VPC] Releasing an Elastic IP address automatically disassociates it from any instance that it's associated with. To disassociate an Elastic IP address without releasing it, use `DisassociateAddress`.

[Nondefault VPC] You must use `DisassociateAddress` to disassociate the Elastic IP address before you try to release it. Otherwise, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *PublicIp*

[EC2-Classic] The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic

### *AllocationId*

[EC2-VPC] The allocation ID.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC

## Response Elements

The following elements are returned in a `ReleaseAddressResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAddressID.NotFound \(p. 619\)](#)
- [InvalidIPAddress.InUse \(p. 619\)](#)

## Examples

### Example Request

This example releases an Elastic IP address (192.0.2.1).

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

### Example Request

This example releases an Elastic IP address with the allocation ID `eipalloc-5723d13e`.

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

### Example Response

```
<ReleaseAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReleaseAddressResponse>
```

## Related Actions

- [AllocateAddress \(p. 13\)](#)
- [DescribeAddresses \(p. 183\)](#)
- [AssociateAddress \(p. 19\)](#)
- [DisassociateAddress \(p. 369\)](#)

# ReplaceNetworkAclAssociation

## Description

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *AssociationId*

The ID of the current association between the original network ACL and the subnet.

Type: String

Default: None

Required: Yes

### *NetworkAclId*

The ID of the new ACL to associate with the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ReplaceNetworkAclAssociationResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `newAssociationId`

The ID of the new association.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAssociationID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example starts with a network ACL associated with a subnet, and a corresponding association ID `aclassoc-e5b95c8c`. You want to associate a different network ACL (`acl-5fb85d36`) with the subnet. The result is a new association ID representing the new association.

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aclassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```

### Example Response

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2014-
09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aclassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

## Related Actions

- [CreateNetworkAcl](#) (p. 81)
- [DeleteNetworkAcl](#) (p. 145)
- [DescribeNetworkAcls](#) (p. 245)

# ReplaceNetworkAclEntry

## Description

Replaces an entry (rule) in a network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkAclId*

The ID of the ACL.

Type: String

Default: None

Required: Yes

### *RuleNumber*

The rule number of the entry to replace.

Type: Integer

Default: None

Required: Yes

### *Protocol*

The IP protocol to which the rule applies. You can use -1 to mean all protocols.

Type: Integer

Valid values: -1 or a protocol number (see [Protocol Numbers](#)).

Required: Yes

### *RuleAction*

Allows or denies traffic that matches the rule.

Type: String

Default: None

Valid values: `allow` | `deny`

Required: Yes

### *Egress*

Indicates whether this rule applies to egress traffic from the subnet (`true`) or ingress traffic to the subnet (`false`).

Type: Boolean

Default: `false`

Required: No

### *CidrBlock*

The CIDR range to allow or deny, in CIDR notation (for example, `172.16.0.0/24`).

Type: String

Default: None

Required: Yes

### *Icmp.Code*

For the ICMP protocol, the ICMP code. You can use -1 to specify all ICMP codes for the given ICMP type.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

*Icmp.Type*

For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

*PortRange.From*

The first port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

*PortRange.To*

The last port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

## Response Elements

The following elements are returned in a `ReplaceNetworkAclEntryResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkAclID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example replaces the egress entry numbered 110 in the network ACL with ID `acl-2cb85d45`. The new rule denies egress traffic destined for anywhere (`0.0.0.0/0`) on TCP port 139.

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclEntry
&NetworkAclId=acl-2cb85d45
```

```
&RuleNumber=110
&Protocol=tcp
&RuleAction=deny
&Egress=true
&CidrBlock=0.0.0.0/0
&PortRange.From=139
&PortRange.To=139
&AUTHPARAMS
```

## Example Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

## Related Actions

- [CreateNetworkAclEntry](#) (p. 83)
- [DeleteNetworkAclEntry](#) (p. 147)
- [DescribeNetworkAcls](#) (p. 245)



# ReplaceRoute

## Description

Replaces an existing route within a route table in a VPC. For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *DestinationCidrBlock*

The CIDR address block used for the destination match. The value you provide must match the CIDR of an existing route in the table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of an Internet gateway attached to your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: *GatewayId*, *InstanceId*, *VpcPeeringConnectionId*, or *NetworkInterfaceId*.

### *InstanceId*

The ID of a NAT instance in your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: *GatewayId*, *InstanceId*, *VpcPeeringConnectionId*, or *NetworkInterfaceId*.

### *NetworkInterfaceId*

The ID of a network interface.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: *GatewayId*, *InstanceId*, *VpcPeeringConnectionId*, or *NetworkInterfaceId*.

### *VpcPeeringConnectionId*

The ID of a VPC peering connection.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: `GatewayId`, `InstanceId`, `VpcPeeringConnectionId`, or `NetworkInterfaceId`.

## Response Elements

The following elements are returned in a `ReplaceRouteResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGatewayID.NotFound \(p. 619\)](#)
- [InvalidInstanceID.Malformed \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)
- [InvalidNetworkInterfaceID.Malformed \(p. 619\)](#)
- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [InvalidRouteTableID.Malformed \(p. 619\)](#)
- [InvalidRouteTableID.NotFound \(p. 619\)](#)
- [InvalidVpcPeeringConnectionId.Malformed \(p. 619\)](#)
- [InvalidVpcPeeringConnectionId.NotFound \(p. 619\)](#)
- [RouteAlreadyExists \(p. 619\)](#)

## Examples

### Example Request

This example replaces a route in the specified route table. The new route matches the CIDR `10.0.0.0/8` and sends the traffic to the virtual private gateway with the ID `vgw-1d00376e`.

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

### Example Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</ReplaceRouteResponse>
```

## Related Actions

- [DeleteRoute](#) (p. 153)
- [CreateRoute](#) (p. 102)
- [DescribeRouteTables](#) (p. 286)

# ReplaceRouteTableAssociation

## Description

Changes the route table associated with a given subnet in a VPC. After the operation completes, the subnet uses the routes in the new route table it's associated with. For more information about route tables, see [Route Tables](#) in the *Amazon VPC User Guide*.

You can also use this action to change which table is the main route table in the VPC. You just specify the main route table's association ID and the route table to be the new main route table.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *AssociationId*

The association ID.

Type: String

Default: None

Required: Yes

### *RouteTableId*

The ID of the new route table to associate with the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ReplaceRouteTableAssociationResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `newAssociationId`

The ID of the new association.

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAssociationID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example starts with a route table associated with a subnet, and a corresponding association ID `rt-bassoc-f8ad4891`. You want to associate a different route table (table `rtb-f9ad4890`) to the subnet. The result is a new association ID representing the new association.

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-f8ad4891
&RouteTableId=rtb-f9ad4890
&AUTHPARAMS
```

### Example Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 105)
- [DisassociateRouteTable](#) (p. 371)
- [DeleteRouteTable](#) (p. 155)
- [DescribeRouteTables](#) (p. 286)
- [AssociateRouteTable](#) (p. 24)

# ReportInstanceStatus

## Description

Submits feedback about an instance's status. The instance must be in the `running` state. If your experience with the instance differs from the instance status returned by `DescribeInstanceStatus`, use `ReportInstanceStatus` to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

### Note

Use of this action does not change the value returned by `DescribeInstanceStatus`.

To report an instance's status, specify an instance ID with the `InstanceId.n` parameter and a reason code with the `ReasonCode.n` parameter that applies to that instance. The following table contains descriptions of all available reason codes.

`instance-stuck-in-state`

My instance is stuck in a state.

`unresponsive`

My instance is unresponsive.

`not-accepting-credentials`

My instance is not accepting my credentials.

`password-not-available`

A password is not available for my instance.

`performance-network`

My instance is experiencing performance problems which I believe are network related.

`performance-instance-store`

My instance is experiencing performance problems which I believe are related to the instance stores.

`performance-ebs-volume`

My instance is experiencing performance problems which I believe are related to an EBS volume.

`performance-other`

My instance is experiencing performance problems.

`other`

Other, explained in the submitted description parameter.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InstanceId.n*

One or more instance IDs.

Type: String

Required: Yes

*Status*

The status of all instances listed in the *InstanceId.n* parameter.

Type: String

Valid values: `ok` | `impaired`

Required: Yes

*StartTime*

The time at which the reported instance health state began.

Type: DateTime

Required: No

*EndTime*

The time at which the reported instance health state ended.

Type: DateTime

Required: No

*ReasonCode.n*

A reason code that describes a specific instance's health state. Each code you supply corresponds to an instance ID that you supply with the *InstanceId.n* parameter. For more information about each reason code, see the [Description \(p. 439\)](#) section.

Type: String

Valid values: `instance-stuck-in-state` | `unresponsive` | `not-accepting-credentials` | `password-not-available` | `performance-network` | `performance-instance-store` | `performance-ebs-volume` | `performance-other` | `other`

Required: Yes

*Description*

Descriptive text about the instance health state.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `ReportInstanceStatusResponse` element.

*requestId*

The ID of the request.

Type: `xsd:string`

*return*

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceId.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example reports instance health state for two instances.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.0=i-9440effb
```

```
&InstanceId.1=i-0cf27c63  
&AUTHPARAMS
```

## Example Request

This example reports instance health state for two instances with reason codes.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus  
&Description=Description+of+my+issue.  
&Status=impaired  
&InstanceId.0=i-9440effb  
&InstanceId.1=i-0cf27c63  
&ReasonCode.0=instance-performance-network  
&ReasonCode.1=instance-performance-disk  
&AUTHPARAMS
```

## Example Response

```
<ReportInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>b8131cff-dfbd-4277-bafe-be006fd0c4da</requestId>  
  <return>>true</return>  
</ReportInstanceStatusResponse>
```



# RequestSpotInstances

## Description

Creates a Spot Instance request. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Note

Users must be subscribed to the required product to run an instance with AWS Marketplace product codes.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SpotPrice*

The maximum hourly price for any Spot Instance launched to fulfill the request.

Type: String

Default: None

Required: Yes

### *InstanceCount*

The maximum number of Spot Instances to launch.

Type: Integer

Default: 1

Required: No

### *Type*

The Spot Instance request type.

Type: String

Valid values: `one-time` | `persistent`

Default: `one-time`

Required: No

### *ValidFrom*

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: DateTime

Default: Request is effective indefinitely.

Required: No

### *ValidUntil*

The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached.

Type: DateTime

Default: Request is effective indefinitely.

Required: No

### *LaunchGroup*

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

Default: Instances are launched and terminated individually

Required: No

*AvailabilityZoneGroup*

The user-specified name for a logical grouping of bids.

When you specify *AvailabilityZoneGroup* in a Spot Instance request, all Spot Instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but choice of Availability Zone is not. *AvailabilityZoneGroup* applies only to bids for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same *AvailabilityZoneGroup* name are launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot Instance request (i.e., all instances are terminated, the bid is expired, or the bid falls below current market), then Amazon EC2 launches the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot Instances could be placed in a different zone from the original request, even if the same *AvailabilityZoneGroup* name was specified.

To ensure that all Spot Instances across all bids are launched into a particular Availability Zone, specify *LaunchSpecification.Placement.AvailabilityZone* in the API or *-availability-zone* in the CLI.

Type: String

Default: Instances are launched in any available Availability Zone.

Required: No

*LaunchSpecification.ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

*LaunchSpecification.KeyName*

The name of the key pair.

Type: String

Default: None

Required: No

*LaunchSpecification.SecurityGroupId.n*

The ID of the security group.

Type: String

Default: The instance uses the default security group.

Required: Conditional

Condition: To specify one or more security groups, you can use either *LaunchSpecification.SecurityGroupId.n* or *LaunchSpecification.SecurityGroup.n*.

*LaunchSpecification.SecurityGroup.n*

[EC2-Classic, default VPC] The name of the security group.

Type: String

Default: The instance uses the default security group.

Required: Conditional

Condition: To specify one or more security groups, you can use either *LaunchSpecification.SecurityGroupId.n* or *LaunchSpecification.SecurityGroup.n*.

*LaunchSpecification UserData*

The MIME, Base64-encoded user data to make available to the instances.

Type: String

Default: None

Required: No

*LaunchSpecification.InstanceType*

The instance type.

Type: String

Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `c3.4xlarge` | `c3.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `cg1.4xlarge` | `cr1.8xlarge` | `g2.2xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge`. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Default: `m1.small`

Required: Yes

*LaunchSpecification.Placement.AvailabilityZone*

The placement constraint (for example, specific Availability Zone) for launching the instances.

Specify if you want all of the Spot Instances in all of your bids to be launched in a particular Availability Zone. Specifying this option requires Amazon EC2 to find capacity in the specified Availability Zone instead of letting Amazon EC2 pick the best Availability Zone available; this can potentially delay the fulfillment of your bid, or require a higher bid price.

Type: String

Default: Amazon EC2 selects an Availability Zone.

Required: No

*LaunchSpecification.Placement.GroupName*

The name of an existing placement group to launch the instance into (for cluster instances).

Type: String

Default: None.

Required: No

*LaunchSpecification.KernelId*

The ID of the kernel.

Type: String

Default: None

Required: No

*LaunchSpecification.RamdiskId*

The ID of the RAM disk.

Type: String

Default: None

Required: No

*LaunchSpecification.BlockDeviceMapping.n.DeviceName*

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: No

*LaunchSpecification.BlockDeviceMapping.n.NoDevice*

Suppresses the device mapping.

Type: Boolean

Default: `true`

Required: No

*LaunchSpecification.BlockDeviceMapping.n.VirtualName*

The name of the virtual device, `ephemeral[0..3]`. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Constraint: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Required: No

*LaunchSpecification.BlockDeviceMapping.n.Ebs.SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: No

*LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeSize*

The size of the volume, in GiBs.

Type: Integer

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Constraints: If the volume type is `io1`, the minimum size of the volume is 10 GiB. If you specify *SnapshotId* and *VolumeSize*, *VolumeSize* must be equal to or larger than the size of the snapshot.

Required: No

*LaunchSpecification.BlockDeviceMapping.n.Ebs.DeleteOnTermination*

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Default: `true`

Required: No

*LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeType*

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Required: No

*LaunchSpecification.BlockDeviceMapping.n.Ebs.Iops*

Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume.

Type: Integer

Valid values: Range is 100 to 4,000.

Default: None

Required: Required when the volume type is `io1`; not used with `standard` or `gp2` volumes.

*LaunchSpecification.Monitoring.Enabled*

Enables monitoring for the instance.

Type: String

Default: Disabled

Required: No

*LaunchSpecification.SubnetId*

The ID of the subnet in which to launch the Spot Instance.

Type: String

Default: None

Required: No

*LaunchSpecification.NetworkInterface.n.NetworkInterfaceId*

[EC2-VPC] Attaches an existing interface to a single instance. Requires `n=1` instances.

Type: String  
Default:  
Required: No

*LaunchSpecification.NetworkInterface.n.DeviceIndex*

[EC2-VPC] Applies to both attaching existing network interfaces and when creating a network interface.

Type: Integer  
Default:  
Required: No

*LaunchSpecification.NetworkInterface.n.SubnetId*

[EC2-VPC] Applies only when creating a network interface.

Type: String  
Default:  
Required: No

*LaunchSpecification.NetworkInterface.n.Description*

[EC2-VPC] Applies only when creating a network interface.

Type: String  
Default: None  
Required: No

*LaunchSpecification.NetworkInterface.n.PrivateIpAddress*

[EC2-VPC] The primary private IP address of the network interface. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if you are also specifying `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary` with a value of `true` with the `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option.

Type: String  
Default: None  
Required: No

*LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress*

[EC2-VPC] The primary private IP address of the network interface. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter with `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary` with a value of `true` if you are also specifying the `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option.

Type: String  
Default: None  
Required: No

*LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary*

[EC2-VPC] Indicates whether the private IP address is the primary private IP address. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter with a value of `true` with the `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option if you specify the `LaunchSpecification.NetworkInterface.n.PrivateIpAddress` option.

Type: String  
Default: None  
Required: No

*LaunchSpecification.NetworkInterface.n.SecondaryPrivateIpAddressCount*

[EC2-VPC] The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, AWS automatically assigns these IP addresses within the subnet's range.

The number of IP addresses you can assign to a network interface varies by instance type. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

For a single network interface, you can't specify this option and specify more than one private IP address using `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress`.

Type: Integer

Default: None

Required: No

*LaunchSpecification.NetworkInterface.n.AssociatePublicIpAddress*

Indicates whether to assign an AWS public IP address to the instance that will be launched. Instances launched into a default subnet are assigned a public IP address by default. For information about instance IP addressing, see [Amazon EC2 Instance IP Addressing](#).

Type: Boolean

Default: If launching into a default subnet, the default value is `true`. If launching into a nondefault subnet, the default value is `false`.

Required: No

*LaunchSpecification.NetworkInterface.n.SecurityGroupId.n*

The security group IDs to associate with the created instance. Applies only when creating a network interface.

Type: String

Default: None

Required: No

*LaunchSpecification.NetworkInterface.n.DeleteOnTermination*

Indicates whether to delete the network interface on instance termination. Applies to all network interfaces.

Type: Boolean

Default:

Required: No

*LaunchSpecification.IamInstanceProfile.Arn*

The Amazon resource name (ARN) of the IAM instance profile to associate with the instances.

Type: String

Default: None

Required: No

*LaunchSpecification.IamInstanceProfile.Name*

The name of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

*LaunchSpecification.EbsOptimized*

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `RequestSpotInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`spotInstanceRequestSet`

Information about the Spot Instance request, wrapped in an `item` element.

Type: [SpotInstanceRequestSetItemType](#) (p. 563)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [InvalidAMIID.NotFound](#) (p. 619)
- [InvalidGroup.NotFound](#) (p. 619)
- [InvalidSubnetID.NotFound](#) (p. 619)
- [MaxSpotInstanceCountExceeded](#) (p. 619)

## Examples

### Example Request

This example creates a Spot Instance request for two `m1.small` instances and associates an IAM instance profile called `s3access` with them.

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=gsg-keypair
&LaunchSpecification.SecurityGroup.1=websrv
&LaunchSpecification.InstanceType=m1.small
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

### Example Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.5</spotPrice>
    </item>
  </spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

```
<type>one-time</type>
<state>open</state>
<status>
  <code>pending-evaluation</code>
  <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
  <message>Your Spot request has been submitted for review, and is pending
evaluation.</message>
</status>
<availabilityZoneGroup>MyAzGroup</availabilityZoneGroup>
<launchSpecification>
  <imageId>ami-1a2b3c4d</imageId>
  <keyName>gsg-keypair</keyName>
  <groupSet>
    <item>
      <groupId>sg-1a2b3c4d</groupId>
      <groupName>websrv</groupName>
    </item>
  </groupSet>
  <instanceType>m1.small</instanceType>
  <blockDeviceMapping/>
  <monitoring>
    <enabled>>false</enabled>
  </monitoring>
  <ebsOptimized>>false</ebsOptimized>
</launchSpecification>
<createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
<productDescription>Linux/UNIX</productDescription>
</item>
</spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 306)
- [CancelSpotInstanceRequests](#) (p. 54)
- [DescribeSpotPriceHistory](#) (p. 314)



# ResetImageAttribute

## Description

Resets an attribute of an AMI to its default value.

### Note

The `productCodes` attribute can't be reset.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Default: None

Valid value: `launchPermission`

Required: Yes

## Response Elements

The following elements are returned in a `ResetImageAttributeResponse` element.

### *requestId*

The ID of the request.

Type: `xsd:string`

### *return*

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidAMIID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example resets the `launchPermission` attribute for the specified AMI.

```
https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

## Example Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

## Related Actions

- [ModifyImageAttribute](#) (p. 391)
- [DescribeImageAttribute](#) (p. 205)

# ResetInstanceAttribute

## Description

Resets an attribute of an instance to its default value. To reset the kernel or RAM disk, the instance must be in a stopped state. To reset the `SourceDestCheck`, the instance can be either running or stopped.

The `SourceDestCheck` attribute controls whether source/destination checking is enabled. The default value is `true`, which means checking is enabled. This value must be `false` for a NAT instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset.

Type: String

Valid values: `kernel` | `ramdisk` | `sourceDestCheck`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ResetInstanceAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceId.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example resets the `sourceDestCheck` attribute.

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1a2b3c4d
&Attribute=sourceDestCheck
&AUTHPARAMS
```

### Example Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

### Related Actions

- [ModifyInstanceAttribute](#) (p. 394)
- [DescribeInstanceAttribute](#) (p. 216)

# ResetNetworkInterfaceAttribute

## Description

Resets a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *Attribute*

The name of the attribute to reset.

Type: String

Valid values: `SourceDestCheck` (reset to `true`)

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ResetNetworkInterfaceAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example resets the `sourceDestCheck` attribute for the specified network interface.

```
https://ec2.amazonaws.com/?Action=ResetNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&Attribute=sourceDestCheck
&AUTHPARAMS
```

## Example Response

```
<ResetNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-
09-01/">
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
  <return>true</return>
</ResetNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 28)
- [DetachNetworkInterface](#) (p. 360)
- [CreateNetworkInterface](#) (p. 86)
- [DeleteNetworkInterface](#) (p. 149)
- [DescribeNetworkInterfaceAttribute](#) (p. 251)
- [DescribeNetworkInterfaces](#) (p. 253)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)

# ResetSnapshotAttribute

## Description

Resets permission settings for the specified snapshot.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset (currently only the attribute for permission to create volumes can be reset)

Type: String

Default: None

Valid value: `createVolumePermission`

Required: Yes

## Response Elements

The following elements are returned in a `ResetSnapshotAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidSnapshot.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example resets the permissions for `snap-1a2b3c4d`, making it a private snapshot that can only be used by the account that created it.

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=createVolumePermission
&AUTHPARAMS
```

## Example Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

## Related Actions

- [ModifySnapshotAttribute](#) (p. 402)
- [DescribeSnapshotAttribute](#) (p. 296)
- [DescribeSnapshots](#) (p. 299)
- [CreateSnapshot](#) (p. 110)



# RevokeSecurityGroupEgress

## Description

Removes one or more egress rules from a security group for EC2-VPC. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be revoked.

Each rule consists of the protocol and the CIDR range or destination security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

For more information, see [Security Groups](#) in the *Amazon VPC User Guide*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Yes

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)).

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use `-1` to specify all.

Required: Yes

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use `-1` to specify all ICMP types.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

### *IpPermissions.n.ToPort*

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use `-1` to specify all ICMP codes for the ICMP type.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

### *IpPermissions.n.Groups.m.GroupId*

The name of the destination security group. You can't specify a destination security group and a CIDR IP address range.

Type: String

Default: None

Required: Yes

*IpPermissions.n.IpRanges.m.CidrIp*

The CIDR IP address range. You can't specify this parameter when specifying a destination security group.

Type: String

Default: 0.0.0.0/0

Constraints: A valid CIDR IP address range.

Required: No

## Response Elements

The following elements are returned in a `RevokeSecurityGroupEgressResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGroup.NotFound \(p. 619\)](#)
- [InvalidPermission.NotFound \(p. 619\)](#)

## Examples

### Example Request

This example revokes the access that the specified security group has to the `205.192.0.0/16` and `205.159.0.0/16` address ranges on TCP port 80.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.2.CidrIp=205.159.0.0/16
&AUTHPARAMS
```

### Example Request

This example revokes the access that the specified security group has to the security group with the ID `sg-9a8d7f5c` on TCP port 1433.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

## Example Response

```
<RevokeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupEgressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 107)
- [DescribeSecurityGroups](#) (p. 291)
- [AuthorizeSecurityGroupEgress](#) (p. 35)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [AuthorizeSecurityGroupIngress](#) (p. 461)
- [DeleteSecurityGroup](#) (p. 157)

# RevokeSecurityGroupIngress

## Description

Removes one or more ingress rules from a security group. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be removed.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see [Amazon EC2 Security Groups](#) in the *Amazon EC2 User Guide for Linux Instances* and [Security Groups for Your VPC](#) in the *Amazon VPC User Guide*.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

Rule changes are propagated to instances within the security group as quickly as possible. However, depending on the number of instances, a small delay might occur.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Required for a nondefault VPC; can be used instead of *GroupName* otherwise.

### *GroupName*

[EC2-Classic, default VPC] The name of the security group.

Type: String

Default: None

Required: No

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)). For EC2-Classic, security groups can have rules only for TCP, UDP, and ICMP. For EC2-VPC, security groups can have rules assigned to any protocol number.

When you use *DescribeSecurityGroups*, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values for EC2-Classic: `tcp` | `udp` | `icmp` or the corresponding protocol number (6 | 17 | 1).

Valid values for EC2-VPC: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use -1 to specify all.

Required: Required for EC2-VPC.

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

*IpPermissions.n.ToPort*

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use -1 to specify all ICMP codes for the ICMP type.

Type: Integer

Default: None

Required: Required for ICMP and any protocol that uses ports.

*IpPermissions.n.Groups.m.GroupName*

[EC2-Classic, default VPC] The name of the source security group. You can't specify a source security group and a CIDR IP address range.

Type: String

Default: None

Required: No

*IpPermissions.n.Groups.m.GroupId*

The ID of the source security group. You can't specify a source security group and a CIDR IP address range.

Type: String

Default: None

Required: Required for nondefault VPCs; can be used instead of `GroupName` otherwise.

*IpPermissions.n.Groups.m.UserId*

[EC2-Classic] The ID of the AWS account that owns the source security group, if it's not the current AWS account.

Type: String

Default: None

Required: No

*IpPermissions.n.IpRanges.m.CidrIp*

The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Default: 0.0.0.0/0

Constraints: A valid CIDR IP address range.

Required: No

## Response Elements

The following elements are returned in a `RevokeSecurityGroupIngressResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidGroup.NotFound \(p. 619\)](#)

- [InvalidPermission.Malformed](#) (p. 619)
- [InvalidPermission.NotFound](#) (p. 619)

## Examples

### Example Request

This example revokes TCP port 80 access from the 205.192.0.0/16 address range for the security group named `webserv`. If the security group is for a VPC, specify the ID of the security group instead of the name.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=webserv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&AUTHPARAMS
```

### Example Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 107)
- [DescribeSecurityGroups](#) (p. 291)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [DeleteSecurityGroup](#) (p. 157)

# RunInstances

## Description

Launches the specified number of instances using an AMI for which you have permissions.

When you launch an instance, it enters the `pending` state. After the instance is ready for you, it enters the `running` state. To check the state of your instance, call [DescribeInstances](#) (p. 220).

If you don't specify a security group when launching an instance, Amazon EC2 uses the default security group. For more information, see [Security Groups](#) in the *Amazon EC2 User Guide for Linux Instances*.

Linux instances have access to the public key of the key pair at boot. You can use this key to provide secure access to the instance. Amazon EC2 public images use this feature to provide secure access without passwords. For more information, see [Key Pairs](#) in the *Amazon EC2 User Guide for Linux Instances*.

You can provide optional user data when launching an instance. For more information, see [Instance Metadata](#) in the *Amazon EC2 User Guide for Linux Instances*.

### Warning

If any of the AMIs have a product code attached for which the user has not subscribed, `RunInstances` fails.

T2 instance types can only be launched into a VPC. If you do not have a default VPC, or if you do not specify a subnet ID in the request, `RunInstances` fails.

For more information about troubleshooting, see [What To Do If An Instance Immediately Terminates](#), and [Troubleshooting Connecting to Your Instance](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 593).

### *ImageId*

The ID of the AMI, which you can get by calling `DescribeImages`.

Type: String

Default: None

Required: Yes

### *MinCount*

The minimum number of instances to launch. If you specify a minimum that is more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches no instances.

Type: Integer

Default: None

Constraints: Between 1 and the maximum number you're allowed for the specified instance type. For more information about the default limits, and how to request an increase, see [How many instances can I run in Amazon EC2](#) in the Amazon EC2 General FAQ.

Required: Yes

### *MaxCount*

The maximum number of instances to launch. If you specify more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches the largest possible number of instances above `MinCount`.

Type: Integer

Default: None

Constraints: Between 1 and the maximum number you're allowed for the specified instance type. For more information about the default limits, and how to request an increase, see [How many instances can I run in Amazon EC2](#) in the Amazon EC2 General FAQ.

Required: Yes

*KeyName*

The name of the key pair. You can create a key pair using `CreateKeyPair` or `ImportKeyPair`.

**Important**

If you launch an instance without specifying a key pair, you can't connect to the instance.

Type: String

Default: None

Required: No

*SecurityGroupId.n*

One or more security group IDs. You can create a security group using `CreateSecurityGroup`.

Type: String

Default: Amazon EC2 uses the default security group.

Required: No

*SecurityGroup.n*

[EC2-Classic, default VPC] One or more security group names. For a nondefault VPC, you must use `SecurityGroupId.n`.

Type: String

Default: Amazon EC2 uses the default security group.

Required: No

*UserData*

The Base64-encoded MIME user data for the instances.

Type: String

Default: None

Required: No

*InstanceType*

The instance type. For more information, see [Instance Types](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Valid values: `t2.micro` | `t2.small` | `t2.medium` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `c3.large` | `c3.xlarge` | `c3.2xlarge` | `c3.4xlarge` | `c3.8xlarge` | `c1.medium` | `c1.xlarge` | `cc2.8xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `hs1.8xlarge` | `hi1.4xlarge` | `t1.micro` | `g2.2xlarge` | `cg1.4xlarge`

Default: `m1.small`

Required: No

*Placement.AvailabilityZone*

The Availability Zone for the instance.

Type: String

Default: Amazon EC2 selects the Availability Zone.

Required: No

*Placement.GroupName*

The name of an existing placement group.

Type: String

Default: None

Required: No



*Placement.Tenancy*

The tenancy of the instance. An instance with a tenancy of `dedicated` runs on single-tenant hardware and can only be launched into a VPC.

Type: String

Valid values: `default` | `dedicated`

Default: `default`

Required: No

*KernelId*

The ID of the kernel.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

*RamdiskId*

The ID of the RAM disk.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Required: No

*BlockDeviceMapping.n.DeviceName*

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: No

*BlockDeviceMapping.n.VirtualName*

The virtual device name (`ephemeral[0..3]`). The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Type: String

Default: None

Constraint: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Required: No

*BlockDeviceMapping.n.Ebs.SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: No

*BlockDeviceMapping.n.Ebs.VolumeSize*

The size of the volume, in GiBs.

Type: Integer

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Constraints: If the volume type is `io1`, the minimum size of the volume is 10 GiB. If you specify `SnapshotId` and `VolumeSize`, `VolumeSize` must be equal to or larger than the size of the snapshot.

Required: No

*BlockDeviceMapping.n.Ebs.DeleteOnTermination*

Indicates whether to delete the volume on instance termination.

Type: Boolean

Default: `true`

Required: No

*BlockDeviceMapping.n.Ebs.VolumeType*

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Required: No

*BlockDeviceMapping.n.Ebs.Iops*

Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume.

Type: Integer

Valid values: Range is 100 to 4,000.

Default: None

Required: Required when the volume type is `io1`; not used with `standard` or `gp2` volumes.

*BlockDeviceMapping.n.Ebs.Encrypted*

Specifies whether the volume is encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: Boolean

Default: `false`

Required: No

*BlockDeviceMapping.n.NoDevice*

Suppresses the device mapping.

Type: empty element

Default: None

Required: No

*Monitoring.Enabled*

Enables monitoring for the instance.

Type: Boolean

Default: `false`

Required: No

*SubnetId*

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Default: None

Required: No

*DisableApiTermination*

If you set this parameter to `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. If you set this parameter to `true` and then later want to be able to terminate the instance, you must first change the value of the `disableApiTermination` attribute to `false` using `ModifyInstanceAttribute`. Alternatively, if you set `InstanceInitiatedShutdownBehavior` to `terminate`, you can terminate the instance by running the shutdown command from the instance.

Type: Boolean

Default: `false`

Required: No

*InstanceInitiatedShutdownBehavior*

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid values: `stop` | `terminate`

Default: `stop`

Required: No

*PrivateIpAddress*

[EC2-VPC] The primary IP address. You must specify a value from the IP address range of the subnet.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if `PrivateIpAddresses.n.Primary` is set to `true` and `PrivateIpAddresses.n.PrivateIpAddress` is set to an IP address.

Type: String

Default: Amazon EC2 selects an IP address from the IP address range of the subnet.

Required: No

*ClientToken*

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see [How to Ensure Idempotency](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Default: None

Constraints: Maximum 64 ASCII characters

Required: No

*NetworkInterface.n.NetworkInterfaceId*

An existing interface to attach to a single instance. Requires `n=1` instances.

Type: String

Default: None

Required: No

*NetworkInterface.n.DeviceIndex*

The device index. Applies both to attaching an existing network interface and creating a network interface.

Type: Integer

Default: None

Required: Conditional

Condition: If you are specifying a network interface in the request, you must provide the device index.

*NetworkInterface.n.SubnetId*

The subnet ID. Applies only when creating a network interface.

Type: String

Default: None

Required: No

*NetworkInterface.n.Description*

A description. Applies only when creating a network interface.

Type: String

Default: None

Required: No

*NetworkInterface.n.PrivateIpAddress*

The primary private IP address. Applies only when creating a network interface. Requires `n=1` network interfaces in launch.

Type: String  
Default: None  
Required: No

*NetworkInterface.n.SecurityGroupId.n*

The ID of the security group. Applies only when creating a network interface.

Type: String  
Default: None  
Required: No

*NetworkInterface.n.DeleteOnTermination*

Indicates whether to delete the network interface on instance termination. You can specify `true` only when creating a network interface.

Type: Boolean  
Default: None  
Required: No

*NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress*

The private IP address. This parameter can be used multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if *NetworkInterface.n.PrivateIpAddresses.n.Primary* is set to `true` and *NetworkInterface.n.PrivateIpAddress* is set to an IP address.

Type: String  
Default: None  
Required: No

*NetworkInterface.n.PrivateIpAddresses.n.Primary*

Indicates whether the private IP address is the primary private IP address.

Type: Boolean  
Default: None  
Required: No

*NetworkInterface.n.SecondaryPrivateIpAddressCount*

The number of private IP addresses to assign to the network interface.

For a single network interface, you can't specify this option and specify more than one private IP address using *NetworkInterface.n.PrivateIpAddress*.

Required: No

*NetworkInterface.n.AssociatePublicIpAddress*

Indicates whether to assign a public IP address to an instance in a VPC. The public IP address is assigned to a specific network interface. If set to `true`, the following rules apply:

- Can only be assigned to a single network interface with the device index of 0. You can't assign a public IP address to a second network interface, and you can't assign a public IP address if you are launching more than one network interface.
- Can only be assigned to a new network interface, not an existing one.

Type: Boolean

Default: If launching into a default subnet, the default value is `true`. If launching into a nondefault subnet, the default value is `false`.

Required: No

*IamInstanceProfile.Arn*

The Amazon Resource Name (ARN) of the IAM instance profile to associate with the instances.

Type: String  
Default: None  
Required: No

*IamInstanceProfile.Name*

The name of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

*EbsOptimized*

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `RunInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`reservationId`

The ID of the reservation.

Type: `xsd:string`

`ownerId`

The ID of the AWS account that owns the reservation.

Type: `xsd:string`

`groupSet`

A list of security groups the instance belongs to. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 515)

`instancesSet`

A list of instances. Each instance is wrapped in an `item` element.

Type: [RunningInstancesItemType](#) (p. 558)

`requesterId`

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console, Auto Scaling).

Type: `xsd:string`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [IdempotentParameterMismatch](#) (p. 619)
- [InsufficientFreeAddressesInSubnet](#) (p. 619)
- [InvalidAMIID.Malformed](#) (p. 619)
- [InvalidAMIID.NotFound](#) (p. 619)
- [InvalidAMIID.Unavailable](#) (p. 619)

- [InvalidBlockDeviceMapping](#) (p. 619)
- [InstanceLimitExceeded](#) (p. 619)
- [InvalidGroup.NotFound](#) (p. 619)
- [InvalidInterface.IpAddressLimitExceeded](#) (p. 619)
- [InvalidKeyPair.NotFound](#) (p. 619)
- [InvalidNetworkInterfaceID.NotFound](#) (p. 619)
- [InvalidParameter](#) (p. 619)
- [InvalidParameterCombination](#) (p. 619)
- [InvalidParameterValue](#) (p. 619)
- [InvalidSnapshot.NotFound](#) (p. 619)
- [InvalidSubnetID.NotFound](#) (p. 619)
- [MissingParameter](#) (p. 619)
- [SecurityGroupLimitExceeded](#) (p. 619)
- [Unsupported](#) (p. 619)
- [UnsupportedOperation](#) (p. 619)
- [VolumeTypeNotAvailableInZone](#) (p. 619)
- [VPCIdNotSpecified](#) (p. 619)
- [VPCResourceNotSpecified](#) (p. 619)

## Examples

### Example Request

This example launches three instances using the AMI with the ID `ami-60a54009`.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS
```

### Example Request

This example launches an `m1.small` instance into a subnet. Because no network interface is specified, the default network interface is used.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

## Example Request

This example launches an `m1.large` instance into a subnet. The network interface specifies a primary private IP address of `10.0.2.106` and two secondary private IP addresses (`10.0.2.107` and `10.0.2.108`).

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.0.DeviceIndex=0
&NetworkInterface.0.PrivateIpAddresses.0.Primary=true
&NetworkInterface.0.PrivateIpAddresses.0.PrivateIpAddress=10.0.2.106
&NetworkInterface.0.PrivateIpAddresses.1.Primary=false
&NetworkInterface.0.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.107
&NetworkInterface.0.PrivateIpAddresses.2.Primary=false
&NetworkInterface.0.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.108
&NetworkInterface.0.SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example Request

This example launches a Dedicated Instance into the specified subnet.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2alfec43
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&AUTHPARAMS
```

## Example Request

This request launches an instance into a nondefault subnet, and requests a public IP address for a new network interface with the device index of 0.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&MaxCount=1
&MinCount=1
&NetworkInterface.0.DeviceIndex=0
&NetworkInterface.0.AssociatePublicIpAddress=true
&NetworkInterface.0.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

## Example Request

This request launches an `m1.large` instance with a block device mapping. There are two instance store volumes mapped to `/dev/sdc` and `/dev/sdd`, and a 100 GiB Amazon EBS volume mapped to `/dev/sdf`.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=m1.large
&BlockDeviceMapping.1.DeviceName=%2Fdev%2Fsdc
&BlockDeviceMapping.1.VirtualName=ephemeral0
&BlockDeviceMapping.2.DeviceName=%2Fdev%2Fsdd
&BlockDeviceMapping.2.VirtualName=ephemeral1
&BlockDeviceMapping.3.DeviceName=%2Fdev%2Fsdf
&BlockDeviceMapping.3.Ebs.DeleteOnTermination=false
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&EbsOptimized=false
&MinCount=1
&MaxCount=1
&DisableApiTermination=false
&Monitoring.Enabled=false
&AUTHPARAMS
```

## Related Actions

- [DescribeInstances](#) (p. 220)
- [StopInstances](#) (p. 476)
- [StartInstances](#) (p. 474)
- [TerminateInstances](#) (p. 478)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [RevokeSecurityGroupIngress](#) (p. 461)
- [DescribeSecurityGroups](#) (p. 291)
- [CreateSecurityGroup](#) (p. 107)
- [CreateKeyPair](#) (p. 78)
- [ImportKeyPair](#) (p. 385)



# StartInstances

## Description

Starts an Amazon EBS-backed AMI that you've previously stopped.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Each time you transition an instance from stopped to started, Amazon EC2 charges a full instance hour, even if transitions happen multiple times within a single hour.

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

For more information, see [Instance Lifecycle](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `StartInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

Type: [InstanceStateChangeType \(p. 527\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [IncorrectInstanceState \(p. 619\)](#)
- [InstanceLimitExceeded \(p. 619\)](#)
- [InvalidInstanceID.Malformed \(p. 619\)](#)
- [InvalidInstanceID.NotFound \(p. 619\)](#)

- [InvalidParameterValue](#) (p. 619)

## Examples

### Example Request

This example starts the specified instance.

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

### Example Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
        <code>0</code>
        <name>pending</name>
      </currentState>
      <previousState>
        <code>80</code>
        <name>stopped</name>
      </previousState>
    </item>
  </instancesSet>
</StartInstancesResponse>
```

## Related Actions

- [StopInstances](#) (p. 476)
- [RunInstances](#) (p. 464)
- [DescribeInstances](#) (p. 220)
- [TerminateInstances](#) (p. 478)

# StopInstances

## Description

Stops an Amazon EBS-backed instance. Each time you transition an instance from stopped to started, Amazon EC2 charges a full instance hour, even if transitions happen multiple times within a single hour.

You can't start or stop Spot Instances.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time.

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

You can stop, start, and terminate Amazon EBS-backed instances. You can only terminate instance store-backed instances. What happens to an instance differs if you stop it or terminate it. For example, when you stop an instance, its root device and any other devices attached to the instance persist. When you terminate an instance, the instance's root device and any other devices that were attached to the instance during the instance launch are automatically deleted. For more information about the differences between stopping and terminating instances, see [Instance Lifecycle](#) in the *Amazon EC2 User Guide for Linux Instances*.

For more information about troubleshooting, see [Troubleshooting Stopping Your Instance](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *InstanceIds*

One or more instance IDs.

Type: String

Default: None

Required: Yes

### *Force*

Forces the instances to stop. The instances do not have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures. This option is not recommended for Windows instances.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `StopInstancesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

`instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

Type: [InstanceStateChangeType](#) (p. 527)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors](#) (p. 604). For a summary of API error codes, see [Client Error Codes](#) (p. 605).

- [IncorrectInstanceState](#) (p. 619)
- [InvalidInstanceID.Malformed](#) (p. 619)
- [InvalidInstanceID.NotFound](#) (p. 619)

## Examples

### Example Request

This example stops the specified instance.

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

### Example Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
        <code>64</code>
        <name>stopping</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</StopInstancesResponse>
```

## Related Actions

- [StartInstances](#) (p. 474)
- [RunInstances](#) (p. 464)
- [DescribeInstances](#) (p. 220)
- [TerminateInstances](#) (p. 478)

# TerminateInstances

## Description

Shuts down one or more instances. This operation is idempotent; if you terminate an instance more than once, each call succeeds.

Terminated instances remain visible after termination (for approximately one hour).

### Note

By default, Amazon EC2 deletes all Amazon EBS volumes that were attached when the instance launched. Volumes attached after instance launch continue running.

You can stop, start, and terminate Amazon EBS-backed instances. You can only terminate instance store-backed instances. What happens to an instance differs if you stop it or terminate it. For example, when you stop an instance, its root device and any other devices attached to the instance persist. When you terminate an instance, the instance's root device and any other devices that were attached to the instance during the instance launch are automatically deleted. For more information about the differences between stopping and terminating instances, see [Instance Lifecycle](#) in the *Amazon EC2 User Guide for Linux Instances*.

For more information about troubleshooting, see [Troubleshooting Terminating Your Instance](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `TerminateInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

Type: [InstanceStateChangeType \(p. 527\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceID.Malformed \(p. 619\)](#)

- [InvalidInstanceId.NotFound](#) (p. 619)
- [InvalidParameterCombination](#) (p. 619)
- [OperationNotPermitted](#) (p. 619)

## Examples

### Example Request

This example terminates the specified instance.

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-3ea74257
&AUTHPARAMS
```

### Example Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-3ea74257</instanceId>
      <currentState>
        <code>32</code>
        <name>shutting-down</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</TerminateInstancesResponse>
```

### Related Actions

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)
- [StopInstances](#) (p. 476)
- [StartInstances](#) (p. 474)

# UnassignPrivateIpAddresses

## Description

Unassigns one or more secondary private IP addresses from a network interface.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress.n*

The secondary private IP addresses to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.

Type: [AssignPrivateIpAddressesSetItemRequestType \(p. 488\)](#)

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `UnassignPrivateIpAddressesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: `xsd:boolean`

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidNetworkInterfaceID.NotFound \(p. 619\)](#)
- [InvalidParameterValue \(p. 619\)](#)

## Examples

### Example Request

The following example unassigns two secondary private IP addresses from the specified network interface.

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.0=10.0.2.60
&PrivateIpAddress.1=10.0.2.65
&AUTHPARAMS
```

## Example Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</UnassignPrivateIpAddresses>
```

## Related Actions

- [AssignPrivateIpAddresses](#) (p. 16)



# UnmonitorInstances

## Description

Disables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 593\)](#).

*InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `UnmonitorInstancesResponse` element.

`requestId`

The ID of the request.

Type: `xsd:string`

`instancesSet`

A list of monitoring information for one or more instances. Each set of information is wrapped in an `item` element.

Type: [MonitorInstancesResponseSetItemType \(p. 538\)](#)

## Errors

The following are some of the client API errors you might encounter when using this request. For more information about common API errors, see [Common Causes of Client Errors \(p. 604\)](#). For a summary of API error codes, see [Client Error Codes \(p. 605\)](#).

- [InvalidInstanceId.NotFound \(p. 619\)](#)
- [InvalidState \(p. 619\)](#)

## Examples

### Example Request

This example disables monitoring for the specified instances.

```
https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

## Example Response

```
<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
    <item>
      <instanceId>i-23a3397d</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
  </instancesSet>
</UnmonitorInstancesResponse>
```

## Related Actions

- [MonitorInstances](#) (p. 410)
- [RunInstances](#) (p. 464)

# Data Types

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## Topics

- [AccountAttributeSetItemType](#) (p. 487)
- [AccountAttributeValueSetItemType](#) (p. 487)
- [AssignPrivateIpAddressesSetItemRequestType](#) (p. 488)
- [AttachmentSetItemResponseType](#) (p. 488)
- [AttachmentType](#) (p. 489)
- [AvailabilityZoneItemType](#) (p. 489)
- [AvailabilityZoneMessageType](#) (p. 490)
- [BlockDeviceMappingItemType](#) (p. 491)
- [BundleInstanceS3StorageType](#) (p. 491)
- [BundleInstanceTaskErrorType](#) (p. 492)
- [BundleInstanceTaskStorageType](#) (p. 493)
- [BundleInstanceTaskType](#) (p. 493)
- [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 494)
- [ConversionTaskType](#) (p. 495)
- [CreateVolumePermissionItemType](#) (p. 496)
- [CustomerGatewayType](#) (p. 496)
- [DescribeAddressesResponseItemType](#) (p. 497)
- [DescribeImagesResponseItemType](#) (p. 498)
- [DescribeKeyPairsResponseItemType](#) (p. 500)
- [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 500)
- [DescribeReservedInstancesListingSetItemType](#) (p. 501)
- [DescribeReservedInstancesModificationsResponseSetItemType](#) (p. 502)
- [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 503)
- [DescribeReservedInstancesOfferingsResponseType](#) (p. 504)
- [DescribeReservedInstancesResponseSetItemType](#) (p. 504)
- [DescribeReservedInstancesSetItemType](#) (p. 506)
- [DescribeSnapshotsSetItemResponseType](#) (p. 506)
- [DescribeVolumesSetItemResponseType](#) (p. 507)
- [DhcpConfigurationItemType](#) (p. 509)
- [DhcpOptionsType](#) (p. 509)

- [DhcpValueType](#) (p. 510)
- [DiskImageDescriptionType](#) (p. 510)
- [DiskImageVolumeDescriptionType](#) (p. 511)
- [EbsBlockDeviceType](#) (p. 511)
- [EbsInstanceBlockDeviceMappingResponseType](#) (p. 512)
- [ExportTaskResponseType](#) (p. 513)
- [ExportToS3TaskResponseType](#) (p. 514)
- [GroupItemType](#) (p. 515)
- [IamInstanceProfileRequestType](#) (p. 515)
- [IamInstanceProfileResponseType](#) (p. 516)
- [IcmpTypeCodeType](#) (p. 517)
- [ImportInstanceTaskDetailsType](#) (p. 517)
- [ImportInstanceVolumeDetailItemType](#) (p. 518)
- [ImportVolumeTaskDetailsType](#) (p. 519)
- [InstanceBlockDeviceMappingItemType](#) (p. 519)
- [InstanceBlockDeviceMappingResponseItemType](#) (p. 520)
- [InstanceCountsSetItemType](#) (p. 520)
- [InstanceCountsSetType](#) (p. 521)
- [InstanceEbsBlockDeviceType](#) (p. 521)
- [InstanceExportTaskResponseType](#) (p. 522)
- [InstanceMonitoringStateType](#) (p. 523)
- [InstanceNetworkInterfaceAssociationType](#) (p. 523)
- [InstanceNetworkInterfaceAttachmentType](#) (p. 524)
- [InstanceNetworkInterfaceSetItemRequestType](#) (p. 524)
- [InstanceNetworkInterfaceSetItemType](#) (p. 525)
- [InstancePrivateIpAddressesSetItemType](#) (p. 527)
- [InstanceStateChangeType](#) (p. 527)
- [InstanceStateType](#) (p. 528)
- [InstanceStatusDetailsSetType](#) (p. 529)
- [InstanceStatusEventsSetType](#) (p. 529)
- [InstanceStatusEventType](#) (p. 530)
- [InstanceStatusItemType](#) (p. 530)
- [InstanceStatusSetType](#) (p. 531)
- [InstanceStatusType](#) (p. 531)
- [InternetGatewayAttachmentType](#) (p. 532)
- [InternetGatewayType](#) (p. 532)
- [IpPermissionType](#) (p. 533)
- [IpRangeItemType](#) (p. 534)
- [LaunchPermissionItemType](#) (p. 534)
- [LaunchSpecificationRequestType](#) (p. 535)
- [LaunchSpecificationResponseType](#) (p. 536)
- [MonitoringInstanceType](#) (p. 538)
- [MonitorInstancesResponseSetItemType](#) (p. 538)
- [NetworkAclAssociationType](#) (p. 539)
- [NetworkAclEntryType](#) (p. 539)
- [NetworkAclType](#) (p. 540)

- [NetworkInterfaceAssociationType](#) (p. 541)
- [NetworkInterfaceAttachmentType](#) (p. 541)
- [NetworkInterfacePrivateIpAddressesSetItemType](#) (p. 542)
- [NetworkInterfaceType](#) (p. 543)
- [PlacementGroupInfoType](#) (p. 544)
- [PlacementRequestType](#) (p. 545)
- [PlacementResponseType](#) (p. 545)
- [PortRangeType](#) (p. 546)
- [PriceScheduleRequestSetItemType](#) (p. 547)
- [PriceScheduleSetItemType](#) (p. 547)
- [PriceScheduleSetType](#) (p. 548)
- [PricingDetailsSetItemType](#) (p. 548)
- [PrivateIpAddressesSetItemRequestType](#) (p. 549)
- [ProductCodeItemType](#) (p. 549)
- [ProductCodesSetItemType](#) (p. 550)
- [ProductDescriptionSetItemType](#) (p. 550)
- [PropagatingVgwType](#) (p. 551)
- [RecurringChargesSetItemType](#) (p. 551)
- [RegionItemType](#) (p. 552)
- [ReservationInfoType](#) (p. 552)
- [ReservedInstanceLimitPriceType](#) (p. 553)
- [ReservedInstancesConfigurationSetItemType](#) (p. 553)
- [ReservedInstancesModificationResultSetItemType](#) (p. 554)
- [ResourceTagSetItemType](#) (p. 555)
- [RouteTableAssociationType](#) (p. 555)
- [RouteTableType](#) (p. 556)
- [RouteType](#) (p. 557)
- [RunningInstancesItemType](#) (p. 558)
- [SecurityGroupIdSetItemType](#) (p. 561)
- [SecurityGroupItemType](#) (p. 561)
- [SpotDatafeedSubscriptionType](#) (p. 562)
- [SpotInstanceRequestSetItemType](#) (p. 563)
- [SpotInstanceStateFaultType](#) (p. 565)
- [SpotInstanceStateMessageType](#) (p. 565)
- [SpotPriceHistorySetItemType](#) (p. 566)
- [StateReasonType](#) (p. 566)
- [SubnetType](#) (p. 567)
- [TagSetItemType](#) (p. 568)
- [UserDataType](#) (p. 569)
- [UserIdGroupPairType](#) (p. 569)
- [VolumeStatusItemType](#) (p. 570)
- [VolumeStatusInfoType](#) (p. 571)
- [VolumeStatusDetailsItemType](#) (p. 571)
- [VolumeStatusEventItemType](#) (p. 572)
- [VolumeStatusActionItemType](#) (p. 573)
- [VpcType](#) (p. 573)

- [VpcPeeringConnectionType](#) (p. 574)
- [VpcPeeringConnectionStateReasonType](#) (p. 575)
- [VpcPeeringConnectionVpcInfoType](#) (p. 575)
- [VpnConnectionOptionsResponseType](#) (p. 576)
- [VpnConnectionType](#) (p. 576)
- [VpnGatewayType](#) (p. 577)
- [VpnStaticRouteType](#) (p. 578)
- [VpnTunnelTelemetryType](#) (p. 579)

## AccountAttributeSetItemType

Describes an account attribute.

### Ancestors

- [AccountAttributeSetType](#)

### Relevant Operations

- [DescribeAccountAttributes](#) (p. 180)

### Contents

`attributeName`

The name of the attribute.

Type: String

`attributeValueSet`

A list of the attribute values, each one wrapped in an `item` element.

Type: [AccountAttributeValueSetItemType](#) (p. 487)

## AccountAttributeValueSetItemType

Describes a value of an account attribute.

### Ancestors

- [AccountAttributeSetItemType](#) (p. 487)

### Relevant Operations

- [DescribeAccountAttributes](#) (p. 180)

## Contents

`attributeValue`  
The value of the attribute.  
Type: String

## AssignPrivateIpAddressesSetItemType

Describes a private IP address.

## Ancestors

- [AssignPrivateIpAddressesType](#)

## Relevant Operations

- [AssignPrivateIpAddresses](#) (p. 16)
- [UnassignPrivateIpAddresses](#) (p. 480)

## Contents

`privateIpAddress`  
The private IP address.  
Type: String

## AttachmentSetItemTypeResponse

Describes an attachment between a volume and an instance.

## Ancestors

- [AttachmentSetResponse](#)

## Relevant Operations

- [DescribeVolumes](#) (p. 330)

## Contents

`volumeId`  
The ID of the volume.  
Type: String

`instanceId`  
The ID of the instance.  
Type: String

`device`  
The device name exposed to the instance (for example, `/dev/sdh`).  
Type: String

`status`  
The attachment state.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

`attachTime`  
The time stamp when the attachment initiated.  
Type: DateTime

`deleteOnTermination`  
Indicates whether the volume is deleted on instance termination.  
Type: Boolean

## AttachmentType

Describes an attachment between a virtual private gateway and a VPC.

### Ancestors

- `AttachmentSetType`

### Relevant Operations

- [AttachVpnGateway](#) (p. 33)
- [CreateVpnGateway](#) (p. 135)
- [DescribeVpnGateways](#) (p. 354)

### Contents

`vpcId`  
The ID of the VPC.  
Type: String

`state`  
The current state of the attachment.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

## AvailabilityZoneItemType

Describes an Availability Zone.



## Ancestors

- [AvailabilityZoneSetType](#)

## Relevant Operations

- [DescribeAvailabilityZones](#) (p. 187)

## Contents

### zoneName

The name of the Availability Zone.

Type: String

### zoneState

The state of the Availability Zone.

Type: String

Valid values: `available` | `impaired` | `unavailable`

### regionName

The name of the region.

Type: String

### messageSet

Any messages about the Availability Zone, each one wrapped in an `item` element.

Type: [AvailabilityZoneMessageType](#) (p. 490)

## AvailabilityZoneMessageType

Describes a message about an Availability Zone.

## Ancestors

- [AvailabilityZoneMessageType](#)

## Relevant Operations

- [DescribeAvailabilityZones](#) (p. 187)

## Contents

### message

The message about the Availability Zone.

Type: String

## BlockDeviceMappingItem

Describes a block device mapping.

### Ancestors

- [BlockDeviceMappingType](#)

### Relevant Operations

- [DescribeImageAttribute](#) (p. 205)
- [DescribeImages](#) (p. 208)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [RegisterImage](#) (p. 420)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

### Contents

`deviceName`

The device name exposed to the instance (for example, `/dev/sdh`).

Type: String

`virtualName`

The virtual device name (ephemeral[0..3]). The number of available instance store volumes depends on the instance type.

Type: String

Constraint: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

`ebs`

Parameters used to set up Amazon EBS volumes automatically when the instance is launched.

Type: [EbsBlockDeviceType](#) (p. 511)

`noDevice`

Include this empty element to suppress the specified device included in the block device mapping of the AMI.

## BundleInstanceS3StorageType

Describes the Amazon S3 bucket for an instance store-backed AMI.

### Ancestors

- [BundleInstanceTaskStorageType](#) (p. 493)

## Relevant Operations

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)
- [DescribeBundleTasks](#) (p. 190)

## Contents

### `awsAccessKeyId`

The access key ID of the owner of the bucket. Before you specify a value, review and follow the guidance in [Best Practices for Managing AWS Access Keys](#).

Type: String

### `bucket`

The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: String

### `prefix`

The beginning of the file name of the AMI.

Type: String

### `uploadPolicy`

A base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on the user's behalf.

Type: String

### `uploadPolicySignature`

The signature of the base64-encoded JSON document.

Type: String

## BundleInstanceTaskErrorType

Describes an error for `BundleInstance`.

## Ancestors

- [BundleInstanceTaskType](#) (p. 493)

## Relevant Operations

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)
- [DescribeBundleTasks](#) (p. 190)

## Contents

code

The error code.

Type: String

message

The error message.

Type: String

## BundleInstanceTaskStorageType

Describes the storage location for an instance store-backed AMI.

### Ancestors

- [BundleInstanceTaskType](#) (p. 493)

### Relevant Operations

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)
- [DescribeBundleTasks](#) (p. 190)

## Contents

s3

An Amazon S3 storage location.

Type: [BundleInstanceS3StorageType](#) (p. 491)

## BundleInstanceTaskType

Describes a bundle task.

### Ancestors

- [BundleInstanceTasksSetType](#)

### Relevant Operations

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 45)
- [DescribeBundleTasks](#) (p. 190)

## Contents

<code>instanceId</code>	The ID of the instance associated with this bundle task. Type: String
<code>bundleId</code>	The ID for this bundle task. Type: String
<code>state</code>	The state of the task. Type: String Valid values: <code>pending</code>   <code>waiting-for-shutdown</code>   <code>bundling</code>   <code>storing</code>   <code>cancelling</code>   <code>complete</code>   <code>failed</code>
<code>startTime</code>	The time this task started. Type: DateTime
<code>updateTime</code>	The time of the most recent update for the task. Type: DateTime
<code>storage</code>	The Amazon S3 storage locations. Type: <a href="#">BundleInstanceTaskStorageType</a> (p. 493)
<code>progress</code>	The level of task completion, as a percent (for example, 20%). Type: String
<code>error</code>	If the task fails, a description of the error. Type: <a href="#">BundleInstanceTaskErrorType</a> (p. 492)

## CancelSpotInstanceRequestsResponseSetItemType

Describes a request to cancel a Spot Instance.

### Ancestors

- [CancelSpotInstanceRequestsResponseSetType](#)

### Relevant Operations

- [CancelSpotInstanceRequests](#) (p. 54)

## Contents

`spotInstanceRequestId`  
The ID of the Spot Instance request.  
Type: String

`state`  
The state of the Spot Instance request.  
Type: String  
Valid values: `active` | `open` | `closed` | `cancelled` | `failed`

## ConversionTaskType

Describes a conversion task.

### Ancestors

- `ConversionTaskSetType`

### Relevant Operations

- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

## Contents

`conversionTaskId`  
The ID of the conversion task  
Type: String

`expirationTime`  
The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.  
Type: String

`importVolume`  
If the task is for importing a volume, this contains information about the import volume task.  
Type: [ImportVolumeTaskDetailsType](#) (p. 519)

`importInstance`  
If the task is for importing an instance, this contains information about the import instance task.  
Type: [ImportInstanceTaskDetailsType](#) (p. 517)

`state`  
The state of the conversion task.  
Type: String  
Valid values: `active` | `cancelling` | `cancelled` | `completed`

`statusMessage`  
The status message related to the conversion task.  
Type: String

# CreateVolumePermissionItemType

Describes volume creation permissions.

## Ancestors

- [CreateVolumePermissionListType](#)

## Relevant Operations

- [DescribeSnapshotAttribute](#) (p. 296)
- [ModifySnapshotAttribute](#) (p. 402)

## Contents

`userId`

The ID of an AWS account that can create volumes from the snapshot.

Type: String

`group`

The group that is allowed to create volumes from the snapshot.

Type: String

Valid value: `all`

# CustomerGatewayType

Describes a customer gateway.

## Ancestors

- [CustomerGatewaySetType](#)

## Relevant Operations

- [CreateCustomerGateway](#) (p. 64)
- [DescribeCustomerGateways](#) (p. 195)

## Contents

`customerGatewayId`

The ID of the customer gateway.

Type: String

`state`

The current state of the customer gateway.

Type: String

Valid values: pending | available | deleting | deleted

type

The type of VPN connection that the customer gateway supports.

Type: String

Valid values: ipsec.1

ipAddress

The Internet-routable IP address of the customer gateway's outside interface.

Type: String

bgpAsn

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: Integer

tagSet

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## DescribeAddressesResponseItem

Describes an IP address.

### Ancestors

- [DescribeAddressesResponseInfoType](#)

### Relevant Operations

- [DescribeAddresses](#) (p. 183)

### Contents

publicIp

The public IP address.

Type: String

allocationId

The ID representing the allocation of the address for use with EC2-VPC.

Type: String

domain

Indicates whether this Elastic IP address is for instances in EC2-Classic or EC2-VPC.

Type: String

Valid values: standard | vpc

instanceId

The ID of the instance the address is associated with (if any).

Type: String

associationId

The ID representing the association of an Elastic IP address with an instance in a VPC.

Type: String



`networkInterfaceId`

The ID of the network interface.

Type: String

`networkInterfaceOwnerId`

The ID of the AWS account that owns the network interface.

Type: String

## DescribeImagesResponseItemType

Describes an image.

### Ancestors

- [DescribeImagesResponseInfoType](#)

### Relevant Operations

- [DescribeImages](#) (p. 208)

### Contents

`imageId`

The ID of the AMI.

Type: String

`imageLocation`

The location of the AMI.

Type: String

`imageState`

The current state of the AMI. If the state is `available`, the image is successfully registered and can be used to launch an instance.

Type: String

Valid values: `available` | `pending` | `failed`

`imageOwnerId`

The AWS account ID of the image owner.

Type: String

`isPublic`

Indicates whether the image has public launch permissions. The value is `true` if this image has public launch permissions or `false` if it has only implicit and explicit launch permissions.

Type: Boolean

`productCodes`

Any product codes associated with the AMI, each one wrapped in an `item` element.

Type: [ProductCodesSetItemType](#) (p. 550)

`architecture`

The architecture of the image.

Type: String

Valid values: `i386` | `x86_64`

<code>imageType</code>	The type of image. Type: String Valid values: <code>machine</code>   <code>kernel</code>   <code>ramdisk</code>
<code>kernelId</code>	The kernel associated with the image, if any. Only applicable for machine images. Type: String
<code>ramdiskId</code>	The RAM disk associated with the image, if any. Only applicable for machine images. Type: String
<code>platform</code>	The value is <code>windows</code> for Windows AMIs; otherwise blank. Type: String
<code>sriovNetSupport</code>	Specifies whether enhanced networking is enabled. Type: String Valid values: <code>simple</code>
<code>stateReason</code>	The reason for the state change. Type: <a href="#">StateReasonType</a> (p. 566)
<code>imageOwnerAlias</code>	The AWS account alias (for example, <code>amazon</code> , <code>self</code> ) or the AWS account ID of the AMI owner. Type: String
<code>name</code>	The name of the AMI that was provided during image creation. Type: String
<code>description</code>	The description of the AMI that was provided during image creation. Type: String
<code>rootDeviceType</code>	The type of root device used by the AMI. The AMI can use an Amazon EBS volume or an instance store volume. Type: String Valid values: <code>ebs</code>   <code>instance-store</code>
<code>rootDeviceName</code>	The device name of the root device (for example, <code>/dev/sda1</code> or <code>xvda</code> ). Type: String
<code>blockDeviceMapping</code>	Any block device mapping entries, each one wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType</a> (p. 491)
<code>virtualizationType</code>	The type of virtualization of the AMI. Type: String Valid values: <code>paravirtual</code>   <code>hvm</code>
<code>tagSet</code>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 555)
<code>hypervisor</code>	The hypervisor type of the image.

Type: String

Valid values: ovm | xen

## DescribeKeyPairsResponseItemType

Describes a key pair.

### Ancestors

- DescribeKeyPairsResponseInfoType

### Relevant Operations

- DescribeKeyPairs (p. 242)

### Contents

keyName

The name of the key pair.

Type: String

keyFingerprint

If you used `CreateKeyPair` to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used `ImportKeyPair` to provide AWS with the public key, this is the MD5 public key fingerprint as specified in section 4 of [RFC4716](#).

Type: String

## DescribeReservedInstancesListingsResponseSetItemType

Describes a Reserved Instance listing.

### Ancestors

- DescribeReservedInstancesListingsResponseType

### Relevant Operations

- DescribeReservedInstancesListings (p. 269)

### Contents

reservedInstancesListingId

The ID of the Reserved Instance listing.

<code>Type</code>	String
<code>reservedInstancesId</code>	The ID of the Reserved Instance. Type: String
<code>createDate</code>	The time the listing was created. Type: DateTime
<code>updateDate</code>	The last modified timestamp of the listing. Type: DateTime
<code>status</code>	The status of the Reserved Instance listing. Type: String Valid values: <code>active</code>   <code>pending</code>   <code>cancelled</code>   <code>closed</code> .
<code>statusMessage</code>	The reason for the current status of the Reserved Instance listing. The response can be blank. Type: String
<code>instanceCounts</code>	The number of instances in this state. Type: <a href="#">InstanceCountsSetType</a> (p. 521)
<code>priceSchedules</code>	The price of the Reserved Instance listing. Type: <a href="#">PriceScheduleSetType</a> (p. 548)
<code>tagSet</code>	The tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 555)
<code>clientToken</code>	The idempotency token that you provided when you created the listing. Type: String

## DescribeReservedInstancesListingSetItemType

Describes a Reserved Instance listing.

### Ancestors

- [DescribeReservedInstancesListings](#)

### Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 269)

### Contents

<code>reservedInstancesListingId</code>	The ID of the Reserved Instance listing. Type: String
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# DescribeReservedInstancesModificationsResponseSetItemType

Describes a Reserved Instance modification.

## Ancestors

- [DescribeReservedInstancesModificationsResponseSetType](#)

## Relevant Operations

- [DescribeReservedInstancesModifications](#) (p. 273)

## Contents

`reservedInstancesModificationId`

Unique ID for the Reserved Instance modification.

Type: String

`clientToken`

Unique, case-sensitive key supplied by the client to ensure that the modification request is idempotent.

Type: String

`reservedInstancesId`

IDs of Reserved Instances supplied as part of the modification request.

Type: String

`modificationResults`

Contains target configurations along with their corresponding new Reserved Instance IDs.

Type: [ReservedInstancesConfigurationSetItemType](#) (p. 553)

`createDate`

Time when the modification request was created.

Type: String

`updateDate`

Time when the modification request was last updated.

Type: String

`effectiveDate`

Time for the modification to become effective.

Type: String

`status`

The status of the Reserved Instances modification request.

Type: String

Valid Values: `processing|fulfilled|failed`

`statusMessage`

The reason for the status.

Type: String

# DescribeReservedInstancesOfferingsResponseSetItemType

Describes a Reserved Instance offering.

## Ancestors

- DescribeReservedInstancesOfferingsResponseSetType

## Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 277)

## Contents

`reservedInstancesOfferingId`

The ID of the Reserved Instance offering.

Type: String

`instanceType`

The instance type on which the Reserved Instance can be used.

Type: String

`availabilityZone`

The Availability Zone in which the Reserved Instance can be used.

Type: String

`duration`

The duration of the Reserved Instance, in seconds.

Type: Long

`fixedPrice`

The purchase price of the Reserved Instance.

Type: Double

`usagePrice`

The usage price of the Reserved Instance, per hour.

Type: Double

`productDescription`

The Reserved Instance description.

Type: String

Valid values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

`instanceTenancy`

The tenancy of the reserved instance.

Type: String

Valid values: `default` | `dedicated`

`currencyCode`

The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is `USD`.

Type: String

offeringType

The Reserved Instance offering type.

Type: String

Valid values: Heavy Utilization | Medium Utilization | Light Utilization

recurringCharges

The recurring charge tag assigned to the resource.

Type: [RecurringChargesSetItemType](#) (p. 551)

marketplace

Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. Returns `true` if it is a Marketplace offering.

Type: Boolean

pricingDetailsSet

The pricing details of the Reserved Instance offering wrapped in an `item` element.

Type: [PricingDetailsSetItemType](#) (p. 548).

## DescribeReservedInstancesOfferingsResponseType

Describes a Reserved Instance offering.

### Ancestors

- [DescribeReservedInstancesOfferings](#)

### Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 277)

### Contents

requestId

The ID of the Reserved Instance offering request.

Type: String

reservedInstancesOfferingsSet

The instance type on which the Reserved Instance can be used.

Type: [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 503)

nextToken

The next paginated set of results to return.

Type: String

## DescribeReservedInstancesResponseSetItemType

Describes a Reserved Instance.

## Ancestors

- DescribeReservedInstancesResponseSetType

## Relevant Operations

- DescribeReservedInstances (p. 265)

## Contents

reservedInstancesId

The ID of the Reserved Instance.

Type: String

instanceType

The instance type on which the Reserved Instance can be used.

Type: String

availabilityZone

The Availability Zone in which the Reserved Instance can be used.

Type: String

start

The date and time the Reserved Instance started.

Type: DateTime

duration

The duration of the Reserved Instance, in seconds.

Type: Long

end

The time when the Reserved Instance expires.

Type: DateTime

fixedPrice

The purchase price of the Reserved Instance.

Type: Double

usagePrice

The usage price of the Reserved Instance, per hour.

Type: Double

instanceCount

The number of Reserved Instances purchased.

Type: Integer

productDescription

The Reserved Instance description.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

state

The state of the Reserved Instance purchase.

Type: String

Valid values: payment-pending | active | payment-failed | retired

tagSet

Any tags assigned to the resource, each one wrapped in an `item` element.



Type: [ResourceTagSetItemType](#) (p. 555)

`instanceTenancy`

The tenancy of the reserved instance.

Type: String

Valid values: `default` | `dedicated`

`currencyCode`

The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is `USD`.

Type: String

`offeringType`

The Reserved Instance offering type.

Type: String

Valid values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization`

`recurringCharges`

The recurring charge tag assigned to the resource.

Type: [RecurringChargesSetItemType](#) (p. 551)

## DescribeReservedInstancesSetItemType

Describes a Reserved Instance.

### Ancestors

- [DescribeReservedInstancesListings](#)

### Relevant Operations

- [DescribeReservedInstances](#) (p. 265)

### Contents

`reservedInstancesId`

The ID of the Reserved Instance.

Type: String

## DescribeSnapshotsSetItemResponseType

Describes a snapshot.

### Ancestors

- [DescribeSnapshotsSetResponseType](#)

## Relevant Operations

- [DescribeSnapshots](#) (p. 299)

## Contents

<code>snapshotId</code>	The ID of the snapshot. Type: String
<code>volumeId</code>	The ID of the volume. Type: String
<code>status</code>	The snapshot state. Type: String Valid values: <code>pending</code>   <code>completed</code>   <code>error</code>
<code>startTime</code>	The time stamp when the snapshot was initiated. Type: DateTime
<code>progress</code>	The progress of the snapshot, as a percentage. Type: String
<code>ownerId</code>	The ID of the AWS account that owns the snapshot. Type: String
<code>volumeSize</code>	The size of the volume, in GiB. Type: String
<code>description</code>	The description of the snapshot. Type: String
<code>ownerAlias</code>	The AWS account alias (for example, <code>amazon</code> , <code>self</code> ) or AWS account ID that owns the AMI. Type: String
<code>tagSet</code>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 555)

## DescribeVolumesSetItemTypeResponse

Describes an Amazon EBS volume.

## Ancestors

- `ItemType-DescribeVolumesSetResponse`

## Relevant Operations

- [DescribeVolumes](#) (p. 330)

## Contents

### volumeId

The ID of the volume.

Type: String

### size

The size of the volume, in GiBs.

Type: String

### snapshotId

The snapshot from which the volume was created (optional).

Type: String

### availabilityZone

The Availability Zone in which the volume was created.

Type: String

### status

The state of the volume.

Type: String

Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

### createTime

The time stamp when volume creation was initiated.

Type: DateTime

### attachmentSet

Any volumes attached, each one wrapped in an `item` element.

Type: [AttachmentSetItemResponseType](#) (p. 488)

### tagSet

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

### volumeType

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

### iops

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4,000.

### encrypted

The encryption status of the volume.

Type: Boolean

Valid values: `true` for encrypted volumes, `false` for unencrypted volumes.

## DhcpConfigurationItemType

Describes a DHCP configuration option.

### Ancestors

- [DhcpConfigurationItemSetType](#)

### Relevant Operations

- [CreateDhcpOptions](#) (p. 66)
- [DescribeDhcpOptions](#) (p. 199)

### Contents

`key`

The name of a DHCP option.

Type: String

`valueSet`

Any values for a DHCP option, each one wrapped in an `item` element.

Type: [DhcpValueType](#) (p. 510)

## DhcpOptionsType

Describes a set of DHCP options.

### Ancestors

- [DhcpOptionsSetType](#)

### Relevant Operations

- [CreateDhcpOptions](#) (p. 66)
- [DescribeDhcpOptions](#) (p. 199)

### Contents

`dhcpOptionsId`

The ID of the set of DHCP options.

Type: String

`dhcpConfigurationSet`

The DHCP options in the set. Each option's key and set of values are wrapped in an `item` element.

Type: [DhcpConfigurationItemType](#) (p. 509)

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## DhcpValueType

Describes the value of a DHCP option.

### Ancestors

- [DhcpValueSetType](#)

### Relevant Operations

- [CreateDhcpOptions](#) (p. 66)
- [DescribeDhcpOptions](#) (p. 199)

### Contents

`value`

A value for the DHCP option.

Type: String

## DiskImageDescriptionType

Describes a disk image.

### Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 518)
- [ImportVolumeTaskDetailsType](#) (p. 519)

### Relevant Operations

- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

### Contents

`format`

The disk image format.

Type: String

size

The size of the disk image.

Type: Long

importManifestUrl

A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, see the "Query String Request Authentication Alternative" section of the [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

checksum

The checksum computed for the disk image.

Type: String

## DiskImageVolumeDescriptionType

Describes the disk image for a volume.

### Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 518)
- [ImportVolumeTaskDetailsType](#) (p. 519)

### Relevant Operations

- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

### Contents

size

The size of the volume.

Type: Integer

id

The volume identifier.

Type: String

## EbsBlockDeviceType

Describe an Amazon EBS block device.

### Ancestors

- [BlockDeviceMappingItemType](#) (p. 491)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 205)
- [DescribeImages](#) (p. 208)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [RegisterImage](#) (p. 420)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

## Contents

### `snapshotId`

The ID of the snapshot.

Type: String

### `volumeSize`

The size of the volume, in GiB.

Type: Integer

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

### `deleteOnTermination`

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

### `volumeType`

The volume type.

Type: String

Valid values: `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

### `iops`

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4,000.

Default: None

Required: Conditional

Condition: Required when the volume type is `io1`; not used with `standard` or `gp2` volumes.

### `encrypted`

Indicates whether or not the Amazon EBS volume is encrypted.

Type: Boolean

Default: No

Required: No

## EbsInstanceBlockDeviceMappingResponseType

Describes a parameter used to set up an Amazon EBS volume in a block device mapping.

## Ancestors

- [InstanceBlockDeviceMappingResponseItem](#) (p. 520)

## Relevant Operations

- [DescribeInstanceAttribute](#) (p. 216)
- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

## Contents

`volumeId`

The ID of the Amazon EBS volume.

Type: String

`status`

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

`attachTime`

The time stamp when the attachment initiated.

Type: DateTime

`deleteOnTermination`

Indicates whether the volume is deleted on instance termination.

Type: Boolean

## ExportTaskResponseType

Describes an export task.

### Ancestors

- [CreateInstanceExportTaskResponse](#)
- [DescribeExportTasksResponse](#)
- [ExportTaskSetResponse](#)

### Relevant Operations

- [CreateInstanceExportTask](#) (p. 73)
- [DescribeExportTasks](#) (p. 203)



## Contents

<code>exportTaskId</code>	The ID of the export task. Type: String
<code>description</code>	A description of the resource being exported. Type: String
<code>state</code>	The state of the conversion task. Type: String Valid values: <code>active</code>   <code>cancelling</code>   <code>cancelled</code>   <code>completed</code>
<code>statusMessage</code>	The status message related to the export task. Type: String
<code>instanceExport</code>	The instance being exported. Type: <a href="#">InstanceExportTaskResponseType</a> (p. 522)
<code>exportToS3</code>	The destination Amazon S3 bucket. Type: <a href="#">ExportToS3TaskResponseType</a> (p. 514)

## ExportToS3TaskResponseType

Describes an export task.

### Ancestors

- [CreateInstanceExportTaskResponseType](#)
- [DescribeExportTasksResponseType](#)
- [ExportTaskSetResponseType](#)
- [ExportTaskResponseType](#)

### Relevant Operations

- [CreateInstanceExportTask](#) (p. 73)
- [DescribeExportTasks](#) (p. 203)

## Contents

<code>diskImageFormat</code>	The format for the exported image. Type: String Valid values: <code>vmdk</code>   <code>vhd</code>
------------------------------	--

containerFormat

The container format used to combine disk images with metadata (such as OVF).

Type: String

Valid values: ova

s3Bucket

The Amazon S3 bucket for the destination image.

Type: String

s3Key

The image written to a single object in an Amazon S3bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

## GroupItem

Describes a security group.

### Ancestors

- [GroupSetType](#)

### Relevant Operations

- [CreateNetworkInterface](#) (p. 86)
- [DescribeInstanceAttribute](#) (p. 216)
- [DescribeInstances](#) (p. 220)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

### Contents

groupId

The ID of the security group.

Type: String

groupName

The name of the security group.

Type: String

## IamInstanceProfileRequestType

Describes an IAM instance profile.

## Ancestors

- [LaunchSpecificationRequestType](#)
- [LaunchSpecificationResponseType](#)
- [RunInstancesType](#)

## Relevant Operations

- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

## Contents

arn

The Amazon Resource Name (ARN) of the instance profile.

Type: String

name

The name of the instance profile.

Type: String

# IamInstanceProfileResponseType

Describes an IAM instance profile.

## Ancestors

- [RunningInstancesItemType](#)

## Relevant Operations

- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

## Contents

arn

The Amazon Resource Name (ARN) of the instance profile.

Type: String

id

The ID of the instance profile.

Type: String

## IcmpTypeCodeType

Describes the ICMP type and code.

### Ancestors

- [NetworkAclEntryType](#) (p. 539)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 81)
- [DescribeNetworkAcls](#) (p. 245)

### Contents

`code`

The ICMP code. A value of -1 means all codes for the specified ICMP type.

Type: Integer

`type`

The ICMP type. A value of -1 means all types.

Type: Integer

## ImportInstanceTaskDetailsType

Describes an import instance task.

### Ancestors

- [ConversionTaskType](#) (p. 495)

### Relevant Operations

- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

### Contents

`volumes`

Any instance volumes for import, each one wrapped in an `item` element.

Type: [ImportInstanceVolumeDetailItemType](#) (p. 518)

`instanceId`

The ID of the instance.

Type: String

platform

The value is `windows` for Windows AMIs; otherwise, blank.

Type: String

description

An optional description of the instance.

Type: String

## ImportInstanceVolumeDetailItemType

Describes an import instance volume task.

### Ancestors

- [ImportInstanceVolumeDetailSetType](#)

### Relevant Operations

- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

### Contents

bytesConverted

The number of bytes converted so far.

Type: Long

availabilityZone

The Availability Zone where the resulting instance volume will reside.

Type: String

image

The image.

Type: [DiskImageDescriptionType](#) (p. 510)

description

The description that you provided when starting the import instance volume task.

Type: String

volume

The volume.

Type: [DiskImageVolumeDescriptionType](#) (p. 511)

status

The status of the import of this particular disk image.

Type: String

statusMessage

The status information or errors related to the disk image.

Type: String

# ImportVolumeTaskDetailsType

Describes an import volume task.

## Ancestors

- [ConversionTaskType](#) (p. 495)

## Relevant Operations

- [DescribeConversionTasks](#) (p. 193)
- [ImportInstance](#) (p. 381)
- [ImportVolume](#) (p. 388)

## Contents

`bytesConverted`

The number of bytes converted so far.

Type: Long

`availabilityZone`

The Availability Zone where the resulting volume will reside.

Type: String

`description`

The description that you provided when starting the import volume task.

Type: String

`image`

The image.

Type: [DiskImageDescriptionType](#) (p. 510)

`volume`

The volume.

Type: [DiskImageVolumeDescriptionType](#) (p. 511)

# InstanceBlockDeviceMappingItemType

Describes a block device mapping.

## Ancestors

- [InstanceBlockDeviceMappingType](#)

## Relevant Operations

- [ModifyInstanceAttribute](#) (p. 394)

## Contents

### deviceName

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`).

Type: String

### virtualName

The virtual device name (ephemeral[0..3]). The number of available instance store volumes depends on the instance type.

Type: String

Constraint: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

### ebs

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [InstanceEbsBlockDeviceType](#) (p. 521)

### noDevice

Include this empty element to suppress the specified device included in the block device mapping of the AMI.

## InstanceBlockDeviceMappingResponseItemType

Describes a block device mapping.

## Ancestors

- [InstanceBlockDeviceMappingResponseType](#)

## Relevant Operations

- [DescribeInstanceAttribute](#) (p. 216)
- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

## Contents

### deviceName

The device name exposed to the instance (for example, `/dev/sdh`, or `xvdh`).

Type: String

### ebs

Parameters used to set up Amazon EBS volumes automatically when the instance is launched.

Type: [EbsInstanceBlockDeviceMappingResponseType](#) (p. 512)

## InstanceCountsSetItemType

Describes a count for a specified Reserved Instance listing state.

## Ancestors

- DescribeReservedInstancesListingSetType
- InstanceCountsSetType

## Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 269)

## Contents

`state`

The states of the listed Reserved Instances.

Type: String

Valid values: `available` | `sold` | `cancelled` | `pending`

`instanceCount`

The number of listed Reserved Instances in the state specified by `state`.

Type: Integer

## InstanceCountsSetType

Contains a set of Reserved Instance listing states.

## Ancestors

- DescribeReservedInstancesListingSetType

## Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 269)

## Contents

`item`

The Reserved Instance listing item.

Type: [InstanceCountsSetItemType](#) (p. 520)

## InstanceEbsBlockDeviceType

Describes parameters used to set up an Amazon EBS volume.



## Ancestors

- [InstanceBlockDeviceMappingItemType](#) (p. 519)

## Relevant Operations

- [ModifyInstanceAttribute](#) (p. 394)

## Contents

`deleteOnTermination`

Indicates whether the volume is deleted on instance termination.

Type: Boolean

`volumeId`

The ID of the volume.

Type: String

# InstanceExportTaskResponseType

Describes an instance export task.

## Ancestors

- [CreateInstanceExportTaskResponseType](#)
- [DescribeExportTasksResponseType](#)
- [ExportTaskSetResponseType](#)
- [ExportTaskResponseType](#)

## Relevant Operations

- [CreateInstanceExportTask](#) (p. 73)
- [DescribeExportTasks](#) (p. 203)

## Contents

`instanceId`

The ID of the resource being exported.

Type: String

`targetEnvironment`

The target virtualization environment.

Type: String

Valid values: `vmware` | `citrix`

## InstanceMonitoringStateType

Describes the monitoring information for an instance.

### Ancestors

- [MonitorInstancesResponseSetItemType](#) (p. 538)
- [RunningInstancesItemType](#) (p. 558)

### Relevant Operations

- [DescribeInstances](#) (p. 220)
- [MonitorInstances](#) (p. 410)
- [RunInstances](#) (p. 464)
- [UnmonitorInstances](#) (p. 482)

### Contents

`state`

The `state` of monitoring for the instance. The `disabled` state means that detailed monitoring is disabled for the instance. The `enabled` state means that detailed monitoring is enabled for the instance. The `pending` state means that the instance is launching or that you recently enabled detailed monitoring for the instance.

Type: String

Valid values: `disabled` | `enabled` | `pending`

## InstanceNetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

### Relevant Operations

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

### Contents

`publicIp`

The public IP address or Elastic IP address bound to the network interface.

Type: String

`publicDnsName`

The public DNS name.

Type: String

`ipOwnerId`  
The ID of the owner of the Elastic IP address.  
Type: String

## InstanceNetworkInterfaceAttachmentType

Describes a network interface attachment.

### Relevant Operations

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

### Contents

`attachmentID`  
The ID of the network interface attachment.  
Type: String

`deviceIndex`  
The index of the device on the instance for the network interface attachment.  
Type: Integer

`status`  
The attachment state.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

`attachTime`  
The time stamp when the attachment initiated.  
Type: DateTime

`deleteOnTermination`  
Indicates whether the network interface is deleted when the instance is terminated.  
Type: Boolean

## InstanceNetworkInterfaceSetItemType

Describes a network interface.

### Ancestors

- `InstanceNetworkInterfaceSetRequestType`

### Relevant Operations

- [DescribeNetworkInterfaces](#) (p. 253)

## Contents

`networkInterfaceId`

The ID of the network interface.

Type: String

`deviceIndex`

The index of the device on the instance for the network interface attachment.

Type: Integer

`subnetId`

The ID of the subnet associated with the network string.

Type: String

`description`

The description of the network interface.

Type: String

`privateIpAddress`

The private IP address of the network interface.

Type: String

`groupSet`

The IDs of the security groups for the network interface.

Type: [SecurityGroupIdSetItemType](#) (p. 561)

`deleteOnTermination`

Indicates whether the interface is deleted when the instance is terminated.

Type: Boolean

`privateIpAddressesSet`

The list of IP addresses to assign to the network interface.

Type: [PrivateIpAddressesSetItemRequestType](#) (p. 549)

`secondaryPrivateIpAddressCount`

The number of secondary private IP addresses. You cannot specify this option with `privateIpAddressesSet`.

Type: Integer

## InstanceNetworkInterfaceSetItemType

Describes a network interface.

### Ancestors

- [InstanceNetworkInterfaceSetType](#)

### Relevant Operations

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

## Contents

<code>networkInterfaceId</code>	The ID of the network interface. Type: String
<code>subnetId</code>	The ID of the subnet. Type: String
<code>vpcId</code>	The ID of the VPC. Type: String
<code>description</code>	The description. Type: String
<code>ownerId</code>	The ID of the AWS account that created the network interface. Type: String
<code>status</code>	The status of the network interface. Type: String Valid values: <code>available</code>   <code>attaching</code>   <code>in-use</code>   <code>detaching</code>
<code>macAddress</code>	The MAC address. Type: String
<code>privateIpAddress</code>	The IP address of the network interface within the subnet. Type: String
<code>privateDnsName</code>	The private DNS name. Type: String
<code>sourceDestCheck</code>	Indicates whether to validate network traffic to or from this network interface. Type: Boolean
<code>groupSet.item</code>	A security group. Type: <a href="#">GroupItemType</a> (p. 515)
<code>attachment</code>	The network interface attachment. Type: <a href="#">InstanceNetworkInterfaceAttachmentType</a> (p. 524)
<code>association</code>	The association information for an Elastic IP address associated with the network interface. Type: <a href="#">InstanceNetworkInterfaceAssociationType</a> (p. 523)
<code>privateIpAddressesSet</code>	The private IP addresses associated with the network interface. Type: <a href="#">InstancePrivateIpAddressesSetItemType</a> (p. 527)

# InstancePrivateIpAddressesSetItemType

Describes a private IP address.

## Ancestors

- [InstancePrivateIpAddressesSetType](#)

## Relevant Operations

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

## Contents

`privateIpAddress`

The private IP address of the network interface.

Type: String

`privateDnsName`

The private DNS name.

Type: String

`primary`

Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

`association`

The association information for an Elastic IP address for the network interface.

Type: [InstanceNetworkInterfaceAssociationType](#) (p. 523)

# InstanceStateChangeType

Describes an instance state change.

## Ancestors

- [InstanceStateChangeSetType](#)

## Relevant Operations

- [StartInstances](#) (p. 474)
- [StopInstances](#) (p. 476)
- [TerminateInstances](#) (p. 478)

## Contents

- `instanceId`  
The instance ID.  
Type: String
- `currentState`  
The current state of the instance.  
Type: [InstanceStateType](#) (p. 528)
- `previousState`  
The previous state of the instance.  
Type: [InstanceStateType](#) (p. 528)

## InstanceStateType

Describes the current state of the instance.

### Ancestors

- [InstanceStateChangeType](#) (p. 527)
- [RunningInstancesItemType](#) (p. 558)

### Relevant Operations

- [DescribeInstances](#) (p. 220)
- [DescribeInstanceStatus](#) (p. 232)
- [RunInstances](#) (p. 464)
- [StartInstances](#) (p. 474)
- [StopInstances](#) (p. 476)
- [TerminateInstances](#) (p. 478)

## Contents

- `code`  
The low byte represents the state. The high byte is an opaque internal value and should be ignored.  
Type: Integer (16-bit unsigned)  
Valid values: 0 (pending) | 16 (running) | 32 (shutting-down) | 48 (terminated) | 64 (stopping) | 80 (stopped)
- `name`  
The current state of the instance.  
Type: String  
Valid values: pending | running | shutting-down | terminated | stopping | stopped

## InstanceStatusDetailsSetType

Describes the instance status with the cause and more detail.

### Ancestors

- [InstanceStatusItemType](#) (p. 530)
- [InstanceStatusType](#) (p. 531)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 232)

### Contents

name

The type of instance status.

Type: String

Valid values: `reachability`

status

The status.

Type: String

Valid values: `passed` | `failed` | `insufficient-data`

impairedSince

The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.

Type: DateTime

## InstanceStatusEventsSetType

Describes a set of instance events.

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 232)

### Contents

item

The scheduled events for the instance.

Type: [InstanceStatusEventType](#) (p. 530)



## InstanceStatusEventType

Describes an instance event.

### Ancestors

- [InstanceStatusEventsSetType](#) (p. 529)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 232)

### Contents

`code`

The associated code of the event.

Type: String

Valid parameters: `instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`

`description`

A description of the event.

Type: String

`notBefore`

The earliest scheduled start time for the event.

Type: DateTime

`notAfter`

The latest scheduled end time for the event.

Type: DateTime

## InstanceStatusItemType

Describes the instance status, cause, details, and potential actions to take in response.

### Ancestors

- [InstanceStatusSetType](#)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 232)

## Contents

- `instanceId`
  - The ID of the instance.
  - Type: String
- `availabilityZone`
  - The Availability Zone of the instance.
  - Type: String
- `eventsSet`
  - Extra information regarding events associated with the instance.
  - Type: [InstanceStatusEventsSetType](#) (p. 529)
- `instanceState`
  - The intended state of the instance. Calls to `DescribeInstanceStatus` require that an instance be in the `running` state.
  - Type: [InstanceStateType](#) (p. 528)
- `systemStatus`
  - Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.
  - Type: [InstanceStatusType](#) (p. 531)
- `instanceStatus`
  - Reports impaired functionality that stems from issues internal to the instance, such as impaired reachability.
  - Type: [InstanceStatusType](#) (p. 531)

## InstanceStatusSetType

Describes the status of an instance.

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 232)

## Contents

- `item`
  - The status of the instance.
  - Type: [InstanceStatusItemType](#) (p. 530)

## InstanceStatusType

Describes the status of an instance with details.

### Ancestors

- [InstanceStatusItemType](#) (p. 530)

## Relevant Operations

- [DescribeInstanceStatus](#) (p. 232)

## Contents

### status

The instance status.

Type: String

Valid values: ok | impaired | insufficient-data | not-applicable

### details

The system instance health or application instance health.

Type: [InstanceStatusDetailsSetType](#) (p. 529)

## InternetGatewayAttachmentType

Describes the attachment of a VPC to an Internet gateway.

## Ancestors

- [InternetGatewayAttachmentSetType](#)

## Relevant Operations

- [AttachInternetGateway](#) (p. 26)
- [CreateInternetGateway](#) (p. 76)
- [DescribeInternetGateways](#) (p. 239)

## Contents

### vpcId

The ID of the VPC.

Type: String

### state

The current state of the attachment.

Type: String

Valid values: attaching | attached | detaching | detached

## InternetGatewayType

Describes an Internet gateway.

## Ancestors

- [InternetGatewaySetType](#)

## Relevant Operations

- [CreateInternetGateway](#) (p. 76)
- [DescribeInternetGateways](#) (p. 239)

## Contents

`internetGatewayId`

The ID of the Internet gateway.

Type: String

`attachmentSet`

Any VPCs attached to the Internet gateway, each one wrapped in an `item` element.

Type: [InternetGatewayAttachmentType](#) (p. 532)

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## IpPermissionType

Describes a security group rule.

## Ancestors

- [IpPermissionSetType](#)

## Relevant Operations

- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [DescribeSecurityGroups](#) (p. 291)
- [RevokeSecurityGroupIngress](#) (p. 461)

## Contents

`ipProtocol`

The protocol.

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`). For information about a list of protocol numbers, see [Protocol Numbers](#).

Type: String

`fromPort`

The start of port range for the TCP and UDP protocols, or an ICMP type number. A value of -1 indicates all ICMP types.

Type: Integer

`toPort`

The end of port range for the TCP and UDP protocols, or an ICMP code. A value of -1 indicates all ICMP codes for the specified ICMP type.

Type: Integer

`groups`

A list of security group and AWS account ID pairs. Each pair is wrapped in an `item` element.

Type: [UserIdGroupPairType \(p. 569\)](#)

`ipRanges`

A list of IP ranges. Each range is wrapped in an `item` element.

Type: [IpRangeItemType \(p. 534\)](#)

## IpRangeItemType

Describes an IP range.

### Ancestors

- [IpRangeSetType](#)

### Relevant Operations

- [AuthorizeSecurityGroupIngress \(p. 38\)](#)
- [DescribeSecurityGroups \(p. 291\)](#)
- [RevokeSecurityGroupIngress \(p. 461\)](#)

### Contents

`cidrIp`

The CIDR range. You can either specify a CIDR range or a source security group, not both.

Type: String

## LaunchPermissionItemType

Describes a launch permission.

### Ancestors

- [LaunchPermissionListType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 205)
- [ModifyImageAttribute](#) (p. 391)

## Contents

### group

The name of the group.

Type: String

Valid value: all

### userId

The AWS account ID.

Type: String

## LaunchSpecificationRequestType

Describes the launch specification of a Spot Instance.

## Ancestors

- [RequestSpotInstancesType](#)

## Relevant Operations

- [RequestSpotInstances](#) (p. 442)

## Contents

### imageId

The AMI ID.

Type: String

### keyName

The name of the key pair.

Type: String

### groupSet

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 515)

### userData

Base64-encoded MIME user data made available to the instances in the reservation.

Type: [UserDataTypes](#) (p. 569)

### instanceType

The instance type.

Type: String

<code>placement</code>	The placement information for the instance. Type: <a href="#">PlacementRequestType</a> (p. 545)
<code>kernelId</code>	The ID of the kernel to select. Type: String
<code>ramdiskId</code>	The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID. Type: String
<code>blockDeviceMapping</code>	Any block device mapping entries for the instance. Each entry is wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType</a> (p. 491)
<code>monitoring</code>	The monitoring information for the instance. Type: <a href="#">MonitoringInstanceType</a> (p. 538)
<code>subnetId</code>	The ID of the subnet. Type: String
<code>networkInterfaceSet</code>	The network interfaces associated with the instance. Type: <a href="#">InstanceNetworkInterfaceSetItemRequestType</a> (p. 524)
<code>iamInstanceProfile</code>	The IAM instance profile associated with the instance. Type: <a href="#">IamInstanceProfileRequestType</a> (p. 515)
<code>ebsOptimized</code>	Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance. Type: Boolean Default: <code>false</code>

## LaunchSpecificationResponseType

Describes the launch specification of a Spot Instance.

### Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 563)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 306)

## Contents

- `imageId`
  - The AMI ID.
  - Type: String
- `keyName`
  - The name of the key pair.
  - Type: String
- `groupSet`
  - A list of security groups. Each group is wrapped in an `item` element.
  - Type: [GroupItemType](#) (p. 515)
- `instanceType`
  - The instance type.
  - Type: String
- `placement`
  - The placement information for the instance.
  - Type: [PlacementRequestType](#) (p. 545)
- `kernelId`
  - The ID of the kernel to select.
  - Type: String
- `ramdiskId`
  - The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID.
  - Type: String
- `blockDeviceMapping`
  - Any block device mapping entries for the instance. Each entry is wrapped in an `item` element.
  - Type: [BlockDeviceMappingItemType](#) (p. 491)
- `monitoring`
  - The monitoring information for the instance.
  - Type: [MonitoringInstanceType](#) (p. 538)
- `subnetId`
  - The ID of the subnet.
  - Type: String
- `networkInterfaceSet`
  - The network interfaces for the instance.
  - Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 524)
- `iamInstanceProfile`
  - The IAM instance profile associated with the instance.
  - Type: [IamInstanceProfileRequestType](#) (p. 515)
- `ebsOptimized`
  - Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.
  - Type: Boolean
  - Default: `false`



## MonitoringInstanceType

Describes the monitoring for the instance.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 535)
- [LaunchSpecificationResponseType](#) (p. 536)
- [RunInstancesType](#)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

### Contents

`enabled`

Indicates whether monitoring is enabled for the instance.

Type: Boolean

## MonitorInstancesResponseSetItem

Describes the monitoring for the instance.

### Ancestors

- [MonitorInstancesResponseType](#)

### Relevant Operations

- [MonitorInstances](#) (p. 410)
- [UnmonitorInstances](#) (p. 482)

### Contents

`instanceId`

The instance ID.

Type: String

`monitoring`

The monitoring information.

Type: [InstanceMonitoringStateType](#) (p. 523)

## NetworkAclAssociationType

Describes an association between a network ACL and a subnet.

### Ancestors

- [NetworkAclAssociationSetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 81)
- [DescribeNetworkAcls](#) (p. 245)

### Contents

`networkAclAssociationId`  
The ID of the association between a network ACL and a subnet.  
Type: String

`networkAclId`  
The ID of the network ACL.  
Type: String

`subnetId`  
The ID of the subnet.  
Type: String

## NetworkAclEntryType

Describes an entry in a network ACL.

### Ancestors

- [NetworkAclEntrySetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 81)
- [DescribeNetworkAcls](#) (p. 245)

### Contents

`ruleNumber`  
The rule number for the entry. ACL entries are processed in ascending order by rule number.  
Type: Integer

`protocol`

The protocol. A value of -1 means all protocols.

Type: Integer

Valid values: Any protocol number (see [Protocol Numbers](#)).

`ruleAction`

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

`egress`

Indicates whether the rule is an egress rule (applied to traffic leaving the subnet). A value of `true` indicates egress.

Type: Boolean

`cidrBlock`

The network range to allow or deny, in CIDR notation.

Type: String

`icmpTypeCode`

ICMP protocol: The ICMP type and code.

Type: [IcmpTypeCodeType](#) (p. 517)

`portRange`

TCP or UDP protocols: The range of ports to which the rule applies.

Type: [PortRangeType](#) (p. 546)

## NetworkACLType

Describes a network ACL.

### Ancestors

- [NetworkACLSetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 81)
- [DescribeNetworkAcls](#) (p. 245)

### Contents

`networkAclId`

The ID of the network ACL.

Type: String

`vpcId`

The ID of the VPC for the network ACL.

Type: String

`default`

Indicates whether this is the default network ACL for the VPC.

Type: Boolean

`entrySet`

A list of entries (rules) in the network ACL. Each entry is wrapped in an `item` element.

Type: [NetworkAclEntryType](#) (p. 539)

`associationSet`

A list of associations between the network ACL and one or more subnets. Each association is wrapped in an `item` element.

Type: [NetworkAclAssociationType](#) (p. 539)

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## NetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

### Ancestors

- [InstanceNetworkInterfaceSetItemType](#)

### Relevant Operations

- [CreateNetworkInterface](#) (p. 86)
- [DescribeNetworkInterfaces](#) (p. 253)

### Contents

`publicIp`

The public IP address or Elastic IP address bound to the network interface.

Type: String

`publicDnsName`

The public DNS name.

Type: String

`ipOwnerId`

The ID of the Elastic IP address owner.

Type: String

`allocationId`

The allocation ID.

Type: String

`associationId`

The association ID.

Type: String

## NetworkInterfaceAttachmentType

Describes a network interface attachment.

## Relevant Operations

- [CreateNetworkInterface](#) (p. 86)
- [DescribeNetworkInterfaces](#) (p. 253)

## Contents

<code>attachmentId</code>	The ID of the network interface attachment. Type: String
<code>instanceId</code>	The ID of the instance. Type: String
<code>instanceOwnerId</code>	The owner of the instance. Type: String
<code>deviceIndex</code>	The device index of the network interface attachment on the instance. Type: Integer
<code>status</code>	The attachment state. Type: String Valid values: <code>attaching</code>   <code>attached</code>   <code>detaching</code>   <code>detached</code>
<code>attachTime</code>	The timestamp indicating when the attachment initiated. Type: <code>dateTime</code>
<code>deleteOnTermination</code>	Indicates whether the network interface is deleted when the instance is terminated. Type: Boolean

## NetworkInterfacePrivateIpAddressSetItemType

Describes the private IP address of a network interface.

## Relevant Operations

- [DescribeNetworkInterfaces](#) (p. 253)

## Contents

<code>privateIpAddress</code>	The private IP address. Type: String
<code>privateDnsName</code>	The private DNS name. Type: String

`primary`

Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

`association`

The association information for an Elastic IP address associated with the network interface.

Type: [NetworkInterfaceAssociationType](#) (p. 541)

## NetworkInterfaceType

Describes a network interface.

### Ancestors

- [NetworkInterfaceSetType](#)

### Relevant Operations

- [CreateNetworkInterface](#) (p. 86)
- [DescribeNetworkInterfaces](#) (p. 253)

### Contents

`networkInterfaceId`

The ID of the network interface.

Type: String

`subnetId`

The ID of the subnet.

Type: String

`vpcId`

The ID of the VPC.

Type: String

`availabilityZone`

The Availability Zone.

Type: String

`description`

A description.

Type: String

`ownerId`

The AWS account ID of the owner of the network interface.

Type: String

`requesterId`

The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

`requesterManaged`

Indicates whether the network interface is being managed by AWS.

Type: String

<code>status</code>	The status of the network interface. Type: String Valid values: <code>available</code>   <code>attaching</code>   <code>in-use</code>   <code>detaching</code>
<code>macAddress</code>	The MAC address. Type: String
<code>privateIpAddress</code>	The IP address of the network interface within the subnet. Type: String
<code>privateDnsName</code>	The private DNS name. Type: String
<code>sourceDestCheck</code>	Indicates whether traffic to or from the instance is validated. Type: Boolean
<code>groupSet</code>	Any security groups for the network interface. Type: <a href="#">GroupItemType</a> (p. 515)
<code>attachment</code>	The network interface attachment. Type: <a href="#">NetworkInterfaceAttachmentType</a> (p. 541)
<code>association</code>	The association information for a public IP address or Elastic IP address associated with the network interface. Type: <a href="#">NetworkInterfaceAssociationType</a> (p. 541)
<code>tagSet</code>	The tags assigned to the resource. Type: <a href="#">ResourceTagSetItemType</a> (p. 555)
<code>privateIpAddressesSet</code>	The private IP addresses associated with the network interface. Items are returned in a set. Type: <a href="#">NetworkInterfacePrivateIpAddressesSetItemType</a> (p. 542)

## PlacementGroupInfoType

Describes a placement group.

### Ancestors

- [PlacementGroupSetType](#)

### Relevant Operations

- [DeletePlacementGroup](#) (p. 151)

## Contents

### groupName

The name of the placement group.

Type: String

### strategy

The placement strategy.

Type: String

Valid values: `cluster`

### state

The status of the placement group.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

## PlacementRequestType

Describes a placement group.

## Ancestors

- [LaunchSpecificationRequestType](#) (p. 535)
- [LaunchSpecificationResponseType](#) (p. 536)
- [RunInstancesType](#)

## Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

## Contents

### availabilityZone

The Availability Zone for the instance.

Type: String

### groupName

The name of a placement group for the instance.

Type: String

## PlacementResponseType

Describes a placement group.



## Ancestors

- [RunningInstancesItemType](#) (p. 558)

## Relevant Operations

- [DescribeInstances](#)
- [RunInstances](#)

## Contents

`availabilityZone`

The Availability Zone of the instance.

Type: String

`groupName`

The name of the placement group the instance is in (for cluster compute instances).

Type: String

`tenancy`

The tenancy of the instance (if the instance is running within a VPC). An instance with a tenancy of `dedicated` runs on single-tenant hardware.

Type: String

Valid values: `default` | `dedicated`

## PortRangeType

Describes a range of ports.

## Ancestors

- [NetworkAclEntryType](#) (p. 539)

## Relevant Operations

- [DescribeNetworkAcls](#) (p. 245)

## Contents

`from`

The first port in the range.

Type: Integer

`to`

The last port in the range.

Type: Integer

## PriceScheduleRequestSetItem

Describes the price for a Reserved Instance.

### Ancestors

- PriceScheduleRequestSetType

### Relevant Operations

- [CreateReservedInstancesListing](#) (p. 93)

### Contents

`term`

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

`price`

The fixed price for the term.

Type: Double

`currencyCode`

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid value: USD

## PriceScheduleSetItem

Describes the price for a Reserved Instance.

### Ancestors

- DescribeReservedInstancesListingsResponseSetItem
- PriceScheduleSetType

### Relevant Operations

- [CreateReservedInstancesListing](#) (p. 93)

### Contents

`term`

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

price

The fixed price for the term.

Type: Double

currencyCode

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid value: USD

active

The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.

A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.

Type: Boolean

## PriceScheduleSetType

Describes the price for a Reserved Instance.

### Ancestors

- DescribeReservedInstancesListingSetType

### Relevant Operations

- DescribeReservedInstancesListings (p. 269)

### Contents

item

The Reserved Instance listing price schedule item.

Type: [PriceScheduleSetItemType](#) (p. 547).

## PricingDetailsSetItemType

Describes a Reserved Instance offering.

### Ancestors

- DescribeReservedInstancesOfferings

## Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 277)

## Contents

`price`

The price per instance.

Type: Integer

`count`

The number of instances available for the price.

Type: Integer

## PrivateIpAddressesSetItemRequestType

Describes a secondary private IP address for a network interface.

## Ancestors

- [PrivateIpAddressesSetRequestType](#)

## Relevant Operations

- [AssignPrivateIpAddresses](#) (p. 16)
- [UnassignPrivateIpAddresses](#) (p. 480)

## Contents

`privateIpAddressesSet`

The private IP addresses.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 488)

`primary`

Indicates whether the private IP address is the primary private IP address.

Type: Boolean

## ProductCodeItemType

Describes a product code.

## Ancestors

- [ProductCodeListType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 205)
- [ModifyImageAttribute](#) (p. 391)

## Contents

`productCode`  
The product code.  
Type: String

## ProductCodesSetItemType

Describes a product code.

## Ancestors

- [ProductCodesSetType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 205)
- [DescribeImages](#) (p. 208)
- [DescribeInstanceAttribute](#) (p. 216)
- [DescribeInstances](#) (p. 220)
- [DescribeSnapshotAttribute](#) (p. 296)
- [DescribeVolumeAttribute](#) (p. 328)
- [RunInstances](#) (p. 464)

## Contents

`productCode`  
The product code.  
Type: String

`type`  
The type of product code.  
Type: String  
Valid values: `devpay` | `marketplace`

## ProductDescriptionSetItemType

Specifies a basic product description.

## Ancestors

- [ProductDescriptionSetType](#)

## Relevant Operations

- [DescribeSpotPriceHistory](#) (p. 314)

## Contents

`productDescription`

The description of the AMI.

Type: String

Valid values: `Linux/UNIX` | `SUSE Linux` | `Windows` | `Linux/UNIX (Amazon VPC)` | `SUSE Linux (Amazon VPC)` | `Windows (Amazon VPC)`

## PropagatingVgwType

Describes a virtual private gateway propagating route.

## Ancestors

- [PropagatingVgwSetType](#)

## Relevant Operations

- [CreateRouteTable](#) (p. 105)
- [DescribeRouteTables](#) (p. 286)

## Contents

`gatewayID`

The ID of the virtual private gateway (VGW).

Type: String

## RecurringChargesSetItemType

Describes a recurring charge.

## Relevant Operations

- [DescribeReservedInstances](#) (p. 265)
- [DescribeReservedInstancesOfferings](#) (p. 277)

## Contents

frequency

The frequency of the recurring charge.

Type: String

Valid value: Hourly

amount

The amount of the recurring charge.

Type: Double

## RegionItemType

Describes a region.

### Ancestors

- RegionSetType

### Relevant Operations

- [DescribeRegions](#) (p. 262)

## Contents

regionName

The name of the region.

Type: String

regionEndpoint

The region service endpoint.

Type: String

## ReservationInfoType

Describes a reservation.

### Ancestors

- ReservationSetType

### Relevant Operations

- [DescribeInstances](#) (p. 220)

## Contents

`reservationId`

The ID of the reservation.

Type: String

`ownerId`

The ID of the AWS account that owns the reservation.

Type: String

`groupSet`

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 515)

`instancesSet`

A list of instances. Each instance is wrapped in an `item` element.

Type: [RunningInstancesItemType](#) (p. 558)

`requesterId`

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

## ReservedInstanceLimitPriceType

Describes the limit price of a Reserved Instance offering.

### Ancestors

- [PurchaseReservedInstancesOfferings](#)

### Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 277)

## Contents

`amount`

Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (`instanceCount * price`).

Type: Double

`currencyCode`

The currency in which the `limitPrice` amount is specified. At this time, the only supported currency is USD.

Type: Double

## ReservedInstancesConfigurationSetItemType

The configuration settings for the modified Reserved Instances.



## Ancestors

- [ReservedInstancesConfigurationSetType](#)

## Relevant Operations

- [DescribeReservedInstancesModifications](#) (p. 273)
- [ModifyReservedInstances](#) (p. 400)

## Contents

`availabilityZone`

The Availability Zone for the modified Reserved Instances. Required.

Type: String

`platform`

The network platform of the modified Reserved Instances, which is either EC2-Classic or EC2-VPC.

Type: String

`instanceCount`

The number of modified Reserved Instances. Required.

Type: Integer

`instanceType`

The instance type for the modified Reserved Instances.

Type: String

# ReservedInstancesModificationResultSetItem-Type

Describes a Reserved Instance modification.

## Ancestors

- [ReservedInstancesModificationResultSetType](#)

## Relevant Operations

- [DescribeReservedInstancesModifications](#) (p. 273)

## Contents

`reservedInstancesId`

ID for the Reserved Instances that were created as part of the modification request. This field is only available when the modification is *fulfilled*.

Type: String

targetConfiguration

Target Reserved Instances configurations supplied as part of the modification request.

Type: [ReservedInstancesConfigurationSetItemType](#) (p. 553)

## ResourceTagSetItemType

Describes the tags assigned to an Amazon EC2 resource.

### Ancestors

- [ResourceTagSetType](#)

### Relevant Operations

- [DescribeImages](#) (p. 208)
- [DescribeInstances](#) (p. 220)
- [DescribeVolumes](#) (p. 330)
- [DescribeSnapshots](#) (p. 299)
- [DescribeSpotInstanceRequests](#) (p. 306)

### Contents

key

The tag key.

Type: String

value

The tag value.

Type: String

## RouteTableAssociationType

Describes an association between a route table and a subnet.

### Ancestors

- [RouteTableAssociationSetType](#)

### Relevant Operations

- [CreateRouteTable](#) (p. 105)
- [DescribeRouteTables](#) (p. 286)

## Contents

<code>routeTableAssociationId</code>	The ID of the association between a route table and a subnet. Type: String
<code>routeTableId</code>	The ID of the route table. Type: String
<code>subnetId</code>	The ID of the subnet. Type: String
<code>main</code>	Indicates whether this is the main route table. Type: Boolean

## RouteTableType

Describes a route table.

### Ancestors

- [RouteTableSetType](#)

### Relevant Operations

- [CreateRouteTable](#) (p. 105)
- [DescribeRouteTables](#) (p. 286)

## Contents

<code>routeTableId</code>	The ID of the route table. Type: String
<code>vpcId</code>	The ID of the VPC. Type: String
<code>routeSet</code>	A list of routes in the route table. Each route is wrapped in an <code>item</code> element. Type: <a href="#">RouteType</a> (p. 557)
<code>associationSet</code>	A list of associations between the route table and one or more subnets. Each association is wrapped in an <code>item</code> element. Type: <a href="#">RouteTableAssociationType</a> (p. 555)
<code>propagatingVgwSet</code>	The IDs of any virtual private gateways (VGW) propagating routes, each route wrapped in an <code>item</code> element.

Type: [PropagatingVgwType](#) (p. 551)

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## RouteType

Describes a route in a route table.

### Ancestors

- [RouteSetType](#)

### Relevant Operations

- [CreateRouteTable](#) (p. 105)
- [DescribeRouteTables](#) (p. 286)

### Contents

*destinationCidrBlock*

The CIDR block used for the destination match.

Type: String

*gatewayId*

The ID of a gateway attached to your VPC.

Type: String

*instanceId*

The ID of a NAT instance in your VPC.

Type: String

*instanceOwnerId*

The AWS account ID of the owner of the instance.

Type: String

*networkInterfaceId*

The ID of the network interface.

Type: String

*state*

The state of the route. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).

Type: String

Valid values: `active` | `blackhole`

*origin*

Describes how the route was created.

Type: String

Valid values: `Valid values: CreateRouteTable | CreateRoute | EnableVgwRoute-Propagation`

- `CreateRouteTable` indicates that route was automatically created when the route table was created.

- `CreateRoute` indicates that the route was manually added to the route table.
- `EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.

`vpcPeeringConnectionId`

The ID of the VPC peering connection.

Type: String

## RunningInstancesItemType

Describes a running instance.

### Ancestors

- `RunningInstancesSetType`

### Relevant Operations

- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

### Contents

`instanceId`

The ID of the instance launched.

Type: String

`imageId`

The ID of the AMI used to launch the instance.

Type: String

`instanceState`

The current state of the instance.

Type: [InstanceStateType](#) (p. 528)

`privateDnsName`

The private DNS name assigned to the instance. This DNS name can only be used inside the Amazon EC2 network. This element remains empty until the instance enters the `running` state.

Type: String

`dnsName`

The public DNS name assigned to the instance. This element remains empty until the instance enters the `running` state.

Type: String

`reason`

The reason for the most recent state transition. This might be an empty string.

Type: String

`keyName`

The key pair name, if this instance was launched with an associated key pair.

Type: String

`amiLaunchIndex`

The AMI launch index, which can be used to find this instance in the launch group.

Type: String

`productCodes`  
The product codes attached to this instance. Each product code is wrapped in an `item` element.  
Type: [ProductCodesSetItem](#) (p. 550)

`instanceType`  
The instance type.  
Type: String  
Valid values: `t2.micro` | `t2.small` | `t2.medium` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `c3.large` | `c3.xlarge` | `c3.2xlarge` | `c3.4xlarge` | `c3.8xlarge` | `c1.medium` | `c1.xlarge` | `cc2.8xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `hs1.8xlarge` | `hi1.4xlarge` | `t1.micro` | `g2.2xlarge` | `cgl.4xlarge`

`launchTime`  
The time the instance was launched.  
Type: DateTime

`placement`  
The location where the instance launched.  
Type: [PlacementResponseType](#) (p. 545)

`kernelId`  
The kernel associated with this instance.  
Type: String

`ramdiskId`  
The RAM disk associated with this instance.  
Type: String

`platform`  
The value is `windows` for Windows AMIs; otherwise blank.  
Type: String

`monitoring`  
The monitoring information for the instance.  
Type: [InstanceMonitoringStateType](#) (p. 523)

`subnetId`  
The ID of the subnet in which the instance is running.  
Type: String

`vpcId`  
The ID of the VPC in which the instance is running.  
Type: String

`privateIpAddress`  
The private IP address assigned to the instance.  
Type: String

`ipAddress`  
The public IP address assigned to the instance.  
Type: String

`sourceDestCheck`  
Specifies whether to enable an instance launched in a VPC to perform NAT. This controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon VPC User Guide*.  
Type: Boolean

- `groupSet`  
A list of the security groups for the instance. Each group is wrapped in an `item` element.  
Type: [GroupItemType](#) (p. 515)
- `stateReason`  
The reason for the most recent state transition. For more information about supported state change codes, see [StateReasonType](#) (p. 566).  
Type: [StateReasonType](#) (p. 566)
- `architecture`  
The architecture of the image.  
Type: String  
Valid values: `i386` | `x86_64`
- `rootDeviceType`  
The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device.  
Type: String  
Valid values: `ebs` | `instance-store`
- `rootDeviceName`  
The root device name (for example, `/dev/sda1`).  
Type: String
- `blockDeviceMapping`  
Any block device mapping entries for the instance, each one wrapped in an `item` element.  
Type: [InstanceBlockDeviceMappingResponseItemType](#) (p. 520)
- `instanceLifecycle`  
Indicates whether this is a Spot Instance.  
Type: String  
Valid values: `spot` | `blank` (no value)
- `spotInstanceRequestId`  
The ID of the Spot Instance request.  
Type: String
- `virtualizationType`  
The virtualization type of the instance.  
Type: String  
Valid values: `paravirtual` | `hvm`
- `clientToken`  
The idempotency token you provided when you launched the instance.  
Type: String
- `tagSet`  
Any tags assigned to the resource, each one wrapped in an `item` element.  
Type: [ResourceTagSetItemType](#) (p. 555)
- `hypervisor`  
The hypervisor type of the instance.  
Type: String  
Valid values: `ovm` | `xen`
- `networkInterfaceSet`  
[EC2-VPC] One or more network interfaces for the instance.  
Type: [InstanceNetworkInterfaceSetItemType](#) (p. 525)
- `iamInstanceProfile`  
The IAM instance profile associated with the instance.  
Type: [IamInstanceProfileResponseType](#) (p. 516)

`ebsOptimized`

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Type: Boolean

Default: `false`

`sriovNetSupport`

Specifies whether enhanced networking is enabled.

Type: String

Valid values: `simple`

## SecurityGroupIdSetItemType

Describes a security group.

### Ancestors

- [LaunchSpecificationResponseType](#)
- [LaunchSpecificationRequestType](#)
- [InstanceNetworkInterfaceSetItemRequestType](#)

### Relevant Operations

- [CreateNetworkInterface](#) (p. 86)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [ModifyNetworkInterfaceAttribute](#) (p. 398)
- [ModifyInstanceAttribute](#) (p. 394)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

### Contents

`groupId`

The ID of the security group associated with the network interface.

Type: String

## SecurityGroupItemType

Describes a security group.

### Ancestors

- [SecurityGroupSetType](#)



## Relevant Operations

- [DescribeSecurityGroups](#) (p. 291)

## Contents

`ownerId`

The AWS account ID of the owner of the security group.

Type: String

`groupId`

The ID of the security group.

Type: String

`groupName`

The name of the security group.

Type: String

`groupDescription`

A description of the security group.

Type: String

`vpcId`

[EC2-VPC] The ID of the VPC for the security group.

Type: String

`ipPermissions`

A list of inbound rules associated with the security group. Each permission is wrapped in an `item` element.

Type: [IpPermissionType](#) (p. 533)

`ipPermissionsEgress`

[EC2-VPC] A list of outbound rules associated with the security group. Each permission is wrapped in an `item` element.

Type: [IpPermissionType](#) (p. 533)

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## SpotDatafeedSubscriptionType

Describes the datafeed for a Spot Instance.

## Ancestors

- [CreateSpotDatafeedSubscriptionResponseType](#)
- [DescribeSpotDatafeedSubscriptionResponseType](#)

## Relevant Operations

- [CreateSpotDatafeedSubscription](#) (p. 113)
- [DescribeSpotDatafeedSubscription](#) (p. 304)

## Contents

<code>ownerId</code>	The AWS account ID of the account. Type: String
<code>bucket</code>	The Amazon S3 bucket where the Spot Instance datafeed is located. Type: String
<code>prefix</code>	The prefix that is prepended to datafeed files. Type: String
<code>state</code>	The state of the Spot Instance datafeed subscription. Type: String Valid values: <code>Active</code>   <code>Inactive</code>
<code>fault</code>	The fault codes for the Spot Instance request, if any. Type: <a href="#">SpotInstanceStateFaultType</a> (p. 565)

## SpotInstanceRequestSetItemType

Describe a Spot Instance request.

### Ancestors

- [SpotInstanceRequestSetType](#)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)

## Contents

<code>spotInstanceRequestId</code>	The ID of the Spot Instance request. Type: String
<code>spotPrice</code>	The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String
<code>type</code>	The Spot Instance request type. Type: String Valid values: <code>one-time</code>   <code>persistent</code>

`state`

The state of the Spot Instance request. Spot bid status information can help you track your Spot Instance requests. For information, see [Tracking Spot Requests with Bid Status Codes](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Valid values: `open` | `active` | `closed` | `cancelled` | `failed`

`fault`

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFaultType](#) (p. 565)

`status`

The status code and status message describing the Spot Instance request.

Type: [SpotInstanceStatusMessageType](#) (p. 565)

`validFrom`

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: DateTime

`validUntil`

The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date is reached.

Type: DateTime

`launchGroup`

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

`availabilityZoneGroup`

The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone.

Type: String

`launchedAvailabilityZone`

The Availability Zone in which the bid is launched.

Type: String

`launchSpecification`

Additional information for launching instances.

Type: [LaunchSpecificationResponseType](#) (p. 536)

`instanceId`

The instance ID, if an instance has been launched to fulfill the Spot Instance request. For persistent requests, the instance ID is for the most recent instance launched by the request.

Type: String

`createTime`

The time stamp when the Spot Instance request was created.

Type: DateTime

`productDescription`

The product description associated with the Spot Instance.

Type: String

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## SpotInstanceStateFaultType

Describes a Spot Instance state change.

### Ancestors

- [SpotDatafeedSubscriptionType](#) (p. 562)
- [SpotInstanceRequestSetItemType](#) (p. 563)

### Relevant Operations

- [CreateSpotDatafeedSubscription](#) (p. 113)
- [DescribeSpotDatafeedSubscription](#) (p. 304)
- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)

### Contents

`code`

The reason code for the Spot Instance state change.

Type: String

`message`

The message for the Spot Instance state change.

Type: String

## SpotInstanceStatusMessageType

Describes a Spot Instance request.

### Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 563)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 306)

### Contents

`code`

The status code of the request.

Type: String

`updateTime`  
The time of the most recent status update.  
Type: DateTime

`message`  
The description for the status code for the Spot request.  
Type: String

## SpotPriceHistorySetItemType

Describes the Spot Price history.

### Ancestors

- [SpotPriceHistorySetType](#)

### Relevant Operations

- [DescribeSpotPriceHistory](#) (p. 314)

### Contents

`instanceType`  
The instance type.  
Type: String

`productDescription`  
A general description of the AMI.  
Type: String  
Valid values: Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)

`spotPrice`  
The maximum price you will pay to launch one or more Spot Instances.  
Type: String

`timestamp`  
The date and time the request was created.  
Type: DateTime

`availabilityZone`  
The Availability Zone.  
Type: String

## StateReasonType

Describes a state change.

### Ancestors

- [DescribeImagesResponseItemType](#) (p. 498)

- [RunningInstancesItemType](#) (p. 558)

## Relevant Operations

- [DescribeImages](#) (p. 208)
- [DescribeInstances](#) (p. 220)
- [RunInstances](#) (p. 464)

## Contents

### code

The reason code for the state change.

Type: String

Valid values: `Server.InsufficientInstanceCapacity` | `Server.InternalError` | `Server.SpotInstanceTermination` | `Client.InstanceInitiatedShutdown` | `Client.InternalError` | `Client.InvalidSnapshot.NotFound` | `Client.UserInitiatedShutdown` | `Client.VolumeLimitExceeded`

### message

The message for the state change.

Type: String

`Server.SpotInstanceTermination`

A Spot Instance was terminated due to an increase in the market price.

`Server.InternalError`

An internal error occurred during instance launch, resulting in termination.

`Server.InsufficientInstanceCapacity`

There was insufficient instance capacity to satisfy the launch request.

`Client.InternalError`

A client error caused the instance to terminate on launch.

`Client.InstanceInitiatedShutdown`

The instance was shut down using the `shutdown -h` command from the instance.

`Client.UserInitiatedShutdown`

The instance was shut down using the Amazon EC2 API.

`Client.VolumeLimitExceeded`

The volume limit was exceeded.

`Client.InvalidSnapshot.NotFound`

The specified snapshot was not found.

## SubnetType

Describes a subnet.

## Ancestors

- [SubnetSetType](#)

## Relevant Operations

- [CreateSubnet](#) (p. 115)
- [DescribeSubnets](#) (p. 318)

## Contents

`subnetId`

The ID of the subnet.

Type: String

`state`

The current state of the subnet.

Type: String

Valid values: `pending` | `available`

`vpcId`

The ID of the VPC the subnet is in.

Type: String

`cidrBlock`

The CIDR block assigned to the subnet.

Type: String

`availableIpAddressCount`

The number of unused IP addresses in the subnet. Note that the IP addresses for any stopped instances are considered unavailable.

Type: Integer

`availabilityZone`

The Availability Zone of the subnet.

Type: String

`defaultForAz`

Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

`mapPublicIpOnLaunch`

Indicates whether instances launched in this subnet receive a public IP address.

Type: Boolean

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## TagSetItemType

Describes a tag.

## Relevant Operations

- [DescribeTags](#) (p. 322)

## Contents

### resourceId

The ID of the resource. For example, `ami-1a2b3c4d`.

Type: String

### resourceType

The type of resource.

Type: String

Valid values: `customer-gateway` | `dhcp-options` | `image` | `instance` | `internet-gateway` | `network-acl` | `network-interface` | `reserved-instances` | `route-table` | `security-group` | `snapshot` | `spot-instances-request` | `subnet` | `volume` | `vpc` | `vpn-connection` | `vpn-gateway`

### key

The key of the tag.

Type: String

### value

The value of the tag.

Type: String

## UserDataType

Specifies user data.

## Ancestors

- [LaunchSpecificationRequestType](#) (p. 535)

## Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 306)
- [RequestSpotInstances](#) (p. 442)
- [RunInstances](#) (p. 464)

## Contents

### data

The base64-encoded MIME user data made available to the instances in the reservation.

Type: String

## UserIdGroupPairType

Describes a security group and AWS account ID pair.



## Ancestors

- [UserIdGroupPairSetType](#)

## Relevant Operations

- [AuthorizeSecurityGroupEgress](#) (p. 35)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [DescribeSecurityGroups](#) (p. 291)
- [RevokeSecurityGroupEgress](#) (p. 458)
- [RevokeSecurityGroupIngress](#) (p. 461)

## Contents

### `userId`

The ID of an AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

### `groupId`

The ID of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

### `groupName`

The name of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

## VolumeStatusItemType

Describes the volume status, cause, details, and potential actions to take in response.

## Ancestors

- [VolumeStatusSetType](#)

## Relevant Operation

- [DescribeVolumeStatus](#) (p. 335)

## Contents

### `volumeId`

The volume ID.

Type: String

`availabilityZone`

The Availability Zone of the volume.

Type: String

`volumeStatus`

The volume status. The status of each volume is wrapped in an `item` element.

Type: [VolumeStatusInfoType](#) (p. 571).

`eventSet`

A list of events associated with the volume. Each event is wrapped in an `item` element.

Type: [VolumeStatusEventItemType](#) (p. 572).

`actionSet`

The details of the action. Each action detail is wrapped in an `item` element.

Type: [VolumeStatusActionItemType](#) (p. 573).

## VolumeStatusInfoType

Describes the volume status with details.

### Ancestors

- [VolumeStatusItemType](#)

### Relevant Operation

- [DescribeVolumeStatus](#) (p. 335)

### Contents

`status`

The status of the volume.

Type: String

Valid values : `ok` | `impaired` | `insufficient-data`

`details`

The details of the volume status. Each volume status detail is wrapped in an `item` type.

Type: [VolumeStatusDetailsItemType](#) (p. 571).

## VolumeStatusDetailsItemType

Describes the cause and more detail for a volume status.

### Ancestors

- [VolumeStatusInfoType](#)

## Relevant Operation

- [DescribeVolumeStatus](#) (p. 335)

## Contents

name

The name of the volume status.

Type: String

Valid values: `io-enabled` | `io-performance`

status

The intended status of the volume status.

Type: String

Valid values for `io-enabled`: `passed` | `failed`

Valid values for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`

## VolumeStatusEventItemType

Describes a volume status event.

## Ancestors

- `VolumeStatusItemType`

## Relevant Operation

- [DescribeVolumeStatus](#) (p. 335)

## Contents

eventType

The type of this event.

Type: String

eventId

The ID of this event.

Type: String

description

A description of the event.

Type: String

notBefore

The earliest start time of the event.

Type: DateTime

notAfter

The latest end time of the event.

Type: DateTime

## VolumeStatusActionItemType

Describes a volume status action code.

### Ancestors

- VolumeStatusItemType

### Relevant Operation

- [DescribeVolumeStatus](#) (p. 335)

### Contents

code

The code identifying the action, for example, `enable-volume-io`.

Type: String

eventType

The event type associated with this action.

Type: String

eventId

The ID of the event associated with this action.

Type: String

description

A description of the action.

Type: String

## VpcType

Describes a VPC.

### Ancestors

- VpcSetType

### Relevant Operations

- [CreateVpc](#) (p. 125)
- [DescribeVpcs](#) (p. 346)

### Contents

vpcId

The ID of the VPC.

Type: String
<code>state</code> The current state of the VPC. Type: String Valid values: <code>pending</code>   <code>available</code>
<code>cidrBlock</code> The CIDR block for the VPC. Type: String
<code>dhcpOptionsId</code> The ID of the set of DHCP options you've associated with the VPC (or <code>default</code> if the default options are associated with the VPC). Type: String
<code>tagSet</code> Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 555)
<code>instanceTenancy</code> The allowed tenancy of instances launched into the VPC. Type: String Valid values: <code>default</code>   <code>dedicated</code>
<code>isDefault</code> Indicates whether the VPC is the default VPC. Type: Boolean

## VpcPeeringConnectionType

Describes a VPC peering connection.

### Ancestors

- [VpcPeeringConnectionSetType](#)

### Relevant Operations

- [AcceptVpcPeeringConnection](#) (p. 12)
- [CreateVpcPeeringConnection](#) (p. 127)
- [DescribeVpcPeeringConnections](#) (p. 342)

### Contents

<code>vpcPeeringConnectionId</code> The ID of the VPC peering connection. Type: String
<code>requesterVpcInfo</code> The information of the requester VPC. Type: <a href="#">VpcPeeringConnectionVpcInfoType</a> (p. 575)

`accepterVpcInfo`

The information of the peer VPC.

Type: [VpcPeeringConnectionVpcInfoType](#) (p. 575)

`status`

The status of the VPC peering connection.

Type: [VpcPeeringConnectionStateReasonType](#) (p. 575)

`expirationTime`

The time that an unaccepted VPC peering connection will expire.

Type: `Timestamp`

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## VpcPeeringConnectionStateReasonType

Describes the status of a VPC peering connection.

### Ancestors

- [VpcPeeringConnectionType](#)

### Relevant Operations

- [AcceptVpcPeeringConnection](#) (p. 12)
- [CreateVpcPeeringConnection](#) (p. 127)
- [DescribeVpcPeeringConnections](#) (p. 342)

### Contents

`code`

The status of the VPC peering connection.

Type: `String`

Valid values: `initiating-request` | `pending-acceptance` | `failed` | `expired` | `provisioning` | `active` | `deleted` | `rejected`

`message`

A message that provides more information about the status, if applicable.

Type: `String`

## VpcPeeringConnectionVpcInfoType

Describes a VPC in a VPC peering connection.

### Ancestors

- [VpcPeeringConnectionType](#)

## Relevant Operations

- [AcceptVpcPeeringConnection](#) (p. 12)
- [CreateVpcPeeringConnection](#) (p. 127)
- [DescribeVpcPeeringConnections](#) (p. 342)

## Contents

`vpcId`

The ID of the VPC.

Type: String

`ownerId`

The AWS account ID of the VPC owner.

Type: String

`cidrBlock`

The CIDR block for the VPC.

Type: String

## VpnConnectionOptionsResponseType

Describes VPN connection options.

## Relevant Operations

- [CreateVpnConnection](#) (p. 130)
- [DescribeVpnConnections](#) (p. 350)

## Contents

`staticRoutesOnly`

Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

## VpnConnectionType

Describes a VPN connection.

## Ancestors

- [VpnConnectionSetType](#)

## Relevant Operations

- [CreateVpnConnection](#) (p. 130)
- [DescribeVpnConnections](#) (p. 350)

## Contents

### `vpnConnectionId`

The ID of the VPN connection.

Type: String

### `state`

The current state of the VPN connection.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

### `customerGatewayConfiguration`

The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the `CreateVpnConnection` response; however, it's present in the `DescribeVpnConnections` response only if the VPN connection is in the `pending` or `available` state.

Type: String

### `type`

The type of VPN connection.

Type: String

Valid values: `ipsec.1`

### `customerGatewayId`

The ID of the customer gateway at your end of the VPN connection.

Type: String

### `vpnGatewayId`

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

### `tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

### `vgwTelemetry`

The virtual private gateway. Each gateway is wrapped in an `item` element.

Type: [VpnTunnelTelemetryType](#) (p. 579)

### `options`

The option set describing the VPN connection.

Type: [VpnConnectionOptionsResponseType](#) (p. 576)

### `routes`

The set of static routes associated with the VPN connection.

Type: [VpnStaticRouteType](#) (p. 578)

## VpnGatewayType

Describes a virtual private gateway.



## Ancestors

- [VpnGatewaySetType](#)

## Relevant Operations

- [CreateVpnGateway](#) (p. 135)
- [DescribeVpnGateways](#) (p. 354)

## Contents

`vpnGatewayId`

The ID of the virtual private gateway.

Type: String

`state`

The current state of the virtual private gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

`type`

The type of VPN connection that the virtual private gateway supports.

Type: String

Valid values: `ipsec.1`

`availabilityZone`

The Availability Zone where the virtual private gateway was created.

Type: String

`attachments`

Any VPCs attached to the virtual private gateway, each one wrapped in an `item` element.

Type: [AttachmentType](#) (p. 489)

`tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 555)

## VpnStaticRouteType

Describes a static route for a VPN connection.

## Ancestors

- [VpnStaticRoutesSetType](#)

## Relevant Operations

- [CreateVpnConnection](#) (p. 130)
- [DescribeVpnConnections](#) (p. 350)

## Contents

### `destinationCidrBlock`

The CIDR block associated with the local subnet of the customer data center.

Type: String

### `source`

Indicates how the routes were provided.

Type: String

Valid value: `Static`

### `state`

The current state of the static route.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

## VpnTunnelTelemetryType

Describes telemetry for a VPN tunnel.

## Ancestors

- `VgwTelemetryType`

## Relevant Operations

- [CreateVpnConnection](#) (p. 130)
- [DescribeVpnConnections](#) (p. 350)

## Contents

### `outsideIpAddress`

The Internet-routable IP address of the virtual private gateway's outside interface.

Type: String

### `status`

The status of the VPN tunnel.

Type: String

Valid values: `UP` | `DOWN`

### `lastStatusChange`

The date and time of the last change in status.

Type: DateTime

### `statusMessage`

If an error occurs, a description of the error.

Type: String

### `acceptedRouteCount`

The number of accepted routes.

Type: Integer

# Making API Requests

---

We provide the Query API for Amazon EC2, as well as software development kits (SDK) for Amazon Web Services (AWS) that enable you to access Amazon EC2 from your preferred programming language.

To monitor the calls made to the Amazon EC2 API for your account, including calls made by the AWS Management Console, command line tools, and other services, use AWS CloudTrail. For more information, see the [AWS CloudTrail User Guide](#).

## Topics

- [Required Knowledge \(p. 580\)](#)
- [Available APIs for Amazon EC2 \(p. 580\)](#)
- [Query Requests \(p. 581\)](#)
- [Troubleshooting API Request Errors \(p. 585\)](#)
- [Ensuring Idempotency \(p. 587\)](#)
- [SOAP Requests \(p. 589\)](#)
- [Logging Amazon EC2 API Calls Using AWS CloudTrail \(p. 590\)](#)

## Required Knowledge

If you plan to access Amazon EC2 through an API, you should be familiar with the following:

- XML
- Web services
- HTTP requests
- One or more programming languages, such as Java, PHP, Perl, Python, Ruby, C#, or C++.

## Available APIs for Amazon EC2

The Amazon EC2 Query API provides HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named `Action`.

AWS provides libraries, sample code, tutorials, and other resources for software developers who prefer to build applications using language-specific APIs instead of submitting a request over HTTP or HTTPS. These libraries provide basic functions that automatically take care of tasks such as cryptographically

signing your requests, retrying requests, and handling error responses, so that it is easier for you to get started.

For more information about downloading the AWS SDKs, see [AWS SDKs and Tools](#). For more information about the language-specific APIs for Amazon EC2, see the following documentation.

#### **AWS SDK for .NET**

- [Amazon.EC2](#)
- [Amazon.EC2.Model](#)
- [Amazon.EC2.Util](#)

#### **AWS SDK for Java**

- [com.amazonaws.services.ec2](#)
- [com.amazonaws.services.ec2.model](#)
- [com.amazonaws.services.ec2.util](#)

#### **AWS SDK for JavaScript**

- [AWS.EC2](#)

#### **AWS SDK for Python**

- [boto.ec2](#)

#### **AWS SDK for Ruby**

- [AWS::EC2](#)

#### **AWS SDK for PHP**

- [Ec2Client](#)

#### **AWS SDK for IOS**

- [AWSEC2](#)

#### **AWS SDK for Android**

- [com.amazonaws.services.ec2](#)
- [com.amazonaws.services.ec2.model](#)
- [com.amazonaws.services.ec2.util](#)

## Query Requests

Query requests are HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named `Action`. For a list of Amazon EC2 API actions, see [Actions](#).

#### **Topics**

- [Structure of a GET Request \(p. 582\)](#)
- [Endpoints \(p. 583\)](#)
- [Query Parameters \(p. 583\)](#)
- [Query API Authentication \(p. 584\)](#)
- [Query Response Structures \(p. 584\)](#)

## Structure of a GET Request

The Amazon EC2 documentation presents the GET requests as URLs, which can be used directly in a browser.

### Tip

Because the GET requests are URLs, you must URL encode the parameter values. In the Amazon EC2 documentation, we leave the example GET requests unencoded to make them easier to read.

The request consists of the following:

- **Endpoint:** The URL that serves as the entry point for the web service.
- **Action:** The action that you want to perform; for example, use `RunInstances` to launch an instance.
- **Parameters:** Any parameters for the action; each parameter is separated by an ampersand (&).
- **Version:** The API version to use, as specified in the WSDL file; for example, `2014-09-01`.
- **Authorization parameters:** The authorization parameters that AWS uses to ensure the validity and authenticity of the request. Amazon EC2 supports Signature Version 2 and Signature Version 4; for more information, see [Signature Version 2 Signing Process](#) and [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

The following optional parameters can be included in your request:

- **DryRun:** Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns `DryRunOperation`; otherwise, it returns `UnauthorizedOperation`.
- **SecurityToken:** The temporary security token obtained through a call to AWS Security Token Service.

For more information about common parameters for API requests, see [Common Query Parameters \(p. 593\)](#).

The following is an example request that launches instances:

```
https://ec2.amazonaws.com/?Action=RunInstances&ImageId=ami-2bb65342&MaxCount=3&MinCount=1&Placement.AvailabilityZone=us-east-1a&Monitoring.Enabled=true&Version=2014-09-01&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIDEXAMPLE%2F20130813%2Fus-east-1%2Fec2%2Faws4_request&X-Amz-Date=20130813T150206Z&X-Amz-SignedHeaders=content-type%3Aapplication%2Fjson&X-Amz-Signature=525d1a96c69b5549dd78dbbec8efe264102288b83ba87b7d58d4b76b71f59fd2
Content-type: application/json
host: ec2.amazonaws.com
```

To make these example requests even easier to read, the Amazon EC2 documentation presents them in the following format:

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2bb65342
```

```
&MaxCount=3
&MinCount=1
&Placement.AvailabilityZone=us-east-1a
&Monitoring.Enabled=true
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLEus-east-1%2Fec2%2Faws4_request
&X-Amz-Date=20130813T150206Z
&X-Amz-SignedHeaders=content-type%3Aapplication%2Fjson%3Ahost%3Aec2.amazonaws.com
&X-Amz-Signature=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84ex
ample54174deb456c
Content-type: application/json
host: ec2.amazonaws.com
```

The first line specifies the endpoint of the request. After the endpoint is a question mark (?), which separates the endpoint from the parameters.

The `Action` parameter indicates the action to perform. For a complete list of actions, see [Actions](#).

The remaining lines specify additional parameters for the request.

### Important

Before you specify your access key ID for the `AWSSessionToken` or `Credential` parameter, review and follow the guidance in [Best Practices for Managing AWS Access Keys](#).

## Endpoints

An endpoint is a URL that serves as an entry point for a web service. You can select a regional endpoint for Amazon EC2 when you make your requests to reduce latency. For more information about regions, see [Regions and Availability Zones](#) in the *Amazon EC2 User Guide for Linux Instances*. For information about the endpoints for Amazon EC2, see [Regions and Endpoints](#) in the *Amazon Web Services General Reference*.

If you specify the general endpoint, `ec2.amazonaws.com`, we use the endpoint for `us-east-1`. To use a different region, specify its associated endpoint. For example, if you specify `ec2.us-west-2.amazonaws.com` as the endpoint, we direct your request to the `us-west-2` endpoint.

## Query Parameters

Each Query request must include required common parameters to handle authentication and selection of an action.

Some operations take lists of parameters. These lists are specified using the `param.n` notation, where `n` is an integer starting from 1.

The following example adds multiple devices to a block device mapping using a list of `BlockDeviceMapping` parameters.

```
http://ec2.amazonaws.com/?Action=RunInstances
&ImageId.1=ami-72aa081b
...
&BlockDeviceMapping.1.DeviceName=/dev/sdj
&BlockDeviceMapping.1.Ebs.NoDevice=true
&BlockDeviceMapping.2.DeviceName=/dev/sdh
&BlockDeviceMapping.2.Ebs.VolumeSize=300
&BlockDeviceMapping.3.DeviceName=/dev/sdc
```

```
&BlockDeviceMapping.3.VirtualName=ephemeral1  
&AUTHPARAMS
```

## Query API Authentication

You can send Query requests over either the HTTP or HTTPS protocol.

Regardless of which protocol you use, you must include a signature in every Query request. Amazon EC2 supports Signature Version 2 and Signature Version 4. In the China (Beijing) and EU (Frankfurt) regions, Amazon EC2 supports Signature Version 4 only. For more information, see [Signature Version 2 Signing Process](#) and [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

Signature Version 4 requests allow you specify all the authorization parameters in a single header, for example:

```
Content-Type: application/x-www-form-urlencoded; charset=UTF-8  
X-Amz-Date: 20130813T150211Z  
Host: ec2.amazonaws.com  
Authorization: AWS4-HMAC-SHA256 Credential=AKIDEXAMPLE/20130813/us-east-1/ec2/aws4_request, SignedHeaders=content-type;host;x-amz-date, Signature=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84example54174deb456c  
  
http://ec2.amazonaws.com/?Action=RunInstances  
ImageId=ami-2bb65342  
&MaxCount=3  
&MinCount=1  
&Monitoring.Enabled=true  
&Placement.AvailabilityZone=us-east-1a  
&Version=2014-09-01
```

In the example Query requests we present in the Amazon EC2 documentation, we omit headers and the parameters related to authentication to make it easier for you to focus on the parameters for the action. We replace them with the following literal string to remind you that you must include these parameters in your request: `&AUTHPARAMS`.

## Query Response Structures

In response to a Query request, the service returns an XML data structure that conforms to an XML schema defined as part of the WSDL file for Amazon EC2. The structure of an XML response is specific to the associated request. In general, the response data types are named according to the operation performed and whether the data type is a container (can have children). Examples of containers include `groupSet` for security groups and `keySet` for key pairs (see the example that follows). Item elements are children of containers, and their contents vary according to the container's role.

Every response includes a request ID in a `requestId` element. The value is a unique string that AWS assigns. If you ever have issues with a particular request, AWS will ask for the request ID to help troubleshoot the issue. The following shows an example response.

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2014-09-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <keySet>  
    <item>  
      <keyName>gsg-keypair</keyName>
```

```
<keyFingerprint>
  00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
</keyFingerprint>
</item>
</keySet>
</DescribeKeyPairsResponse>
```

To download the WSDL file for Amazon EC2, see [Amazon EC2 Developer Resources](#).

## Troubleshooting API Request Errors

In the Amazon EC2 Query API, error codes are indicated as being either client or server. Client errors usually occur because there is a problem with the structure, content, or validity of the request. Server errors usually indicate a server-side issue.

For more information about API error codes, see [Error Codes](#).

### Topics

- [Query API Request Rate](#) (p. 585)
- [Eventual Consistency](#) (p. 586)
- [Unauthorized Operation](#) (p. 587)

## Query API Request Rate

We throttle Amazon EC2 API requests for each AWS account to help the performance of the service. We ensure that all calls to the Amazon EC2 API (whether they originate from an application, calls to the Amazon EC2 command line interface, or the Amazon EC2 console) don't exceed the maximum allowed API request rate. Note that API requests made by IAM users are attributed to the underlying AWS account.

The Amazon EC2 API actions are divided into the following categories:

- Describe actions, such as `DescribeInstances` and `DescribeVolumes`. These requests simply retrieve cached data, so they have the highest request limit.
- Modify actions, such as `RunInstances` and `CreateVolumes`. These requests create or modify resources, so they have a lower request limit than describe calls.
- The `CreateKeyPair`, `GetConsoleOutput`, `AuthorizeSecurityGroupIngress`, and `RevokeSecurityGroupIngress` actions. These requests take the most time and resource to complete, so they have the lowest request limit.

If an API request exceeds the API request rate for its category, the request returns the `RequestLimitExceeded` error code. To prevent this error, ensure that your application doesn't retry API requests at a high rate. You can do this by using care when polling and by using exponential back-off retries.

## Polling

Your application might need to call an API repeatedly to check for an update in status. Before you start polling, give the request time to potentially complete. When you begin polling, use an appropriate sleep interval between successive requests. For best results, use an increasing sleep interval.



## Retries or batch processing

Your application might need to retry an API request after it fails, or to process multiple resources (for example, all your volumes). To lower the rate of API requests, use an appropriate sleep interval between successive requests. For best results, use an increasing or variable sleep interval.

## Calculating the sleep interval

When you have to poll or retry an API request, we recommend using an exponential backoff algorithm to calculate the sleep interval between API calls. The idea behind exponential backoff is to use progressively longer waits between retries for consecutive error responses. For more information, and implementation examples of this algorithm, see [Error Retries and Exponential Backoff in AWS](#).

## Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that the result of an API command you run that affects your Amazon EC2 resources might not be immediately visible to all subsequent commands you run. You should keep this in mind when you carry out an API command that immediately follows a previous API command.

Eventual consistency can affect the way you manage your resources. For example, if you run a command to create a resource, it will eventually be visible to other commands. This means that if you run a command to modify or describe the resource that you just created, its ID might not have propagated throughout the system, and you will get an error responding that the resource does not exist.

To manage eventual consistency, you can do the following:

- Confirm the state of the resource before you run a command to modify it. Run the appropriate `Describe` command using an exponential backoff algorithm to ensure that you allow enough time for the previous command to propagate through the system. To do this, run the `Describe` command repeatedly, starting with a couple of seconds of wait time, and increasing gradually up to five minutes of wait time.
- Add wait time between subsequent commands, even if a `Describe` command returns an accurate response. Apply an exponential backoff algorithm starting with a couple of seconds of wait time, and increase gradually up to about five minutes of wait time.

### Eventual Consistency Error Examples

The following are examples of error codes you may encounter as a result of eventual consistency.

- `InvalidInstanceID.NotFound`

If you successfully run the `RunInstances` command, and then immediately run another command using the instance ID that was provided in the response of `RunInstances`, it may return an `InvalidInstanceID.NotFound` error. This does not mean the instance does not exist.

Some specific commands that may be affected are:

- `DescribeInstances`: To confirm the actual state of the instance, run this command using an exponential back-off algorithm.
- `TerminateInstances`: To confirm the state of the instance, first run the `DescribeInstances` command using an exponential back-off algorithm.

#### Important

If you get an `InvalidInstanceID.NotFound` error after running `TerminateInstances`, this does not mean that the instance is or will be terminated. Your instance could still be running. This is why it is important to first confirm the instance's state using `DescribeInstances`.

- `InvalidGroup.NotFound`

If you successfully run the `CreateSecurityGroup` command, and then immediately run another command using the instance ID that was provided in the response of `CreateSecurityGroup`, it may return an `InvalidGroup.NotFound` error. To confirm the state of the security group, run the `DescribeSecurityGroups` command using an exponential back-off algorithm.

## Unauthorized Operation

By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API, unless they've been explicitly granted permission through IAM policies. If an IAM user attempts to perform an action for which permission has not been granted, the request returns the following error: `Client.UnauthorizedOperation`.

This error may occur when a policy is unintentionally restrictive. For example, to allow an IAM user to launch instances into a specific subnet, you need to grant permissions for the following resources by specifying their ARNs in your IAM policy: instances, volumes, AMIs, the specific subnet, network interfaces, key pairs, and security groups. If you omit the permission for volumes, for example, the user is only able to launch an instance from an instance store-backed AMI, as they do not have permission to create the root EBS volume for an EBS-backed instance.

For more information about creating IAM policies for Amazon EC2, see [IAM Policies for Amazon EC2](#) in the *Amazon EC2 User Guide for Linux Instances*.

Currently, not all API actions support resource-level permissions; we'll add support for more in 2014. For more information about which ARNs you can use with which Amazon EC2 API actions, see [Granting IAM Users Required Permissions for Amazon EC2 Resources](#).

## Ensuring Idempotency

An *idempotent* operation completes no more than one time.

When you launch an instance, the request typically returns before the operation has completed. You determine whether the operation was successful by monitoring the state of the instance (it goes from `pending` to `running`). If the operation times out or there are connection issues, you might need to retry the request. However, if the original request and a retry are both successful, you'll end up with more instances than you intended to launch.

If you launch your instance using [run-instances](#) (AWS CLI), [ec2-run-instances](#) (Amazon EC2 CLI), or [RunInstances](#), you can optionally provide a client token to ensure that the request is idempotent. If you repeat a request, the same response is returned for each repeated request. The only information that might vary in the response is the state of the instance.

The client token is a unique, case-sensitive string of up to 64 ASCII characters. It is included in the response when you describe the instance. The client token is valid for at least 24 hours after the termination of the instance. You should not reuse a client token in another call later on.

If you repeat a request with the same client token, but change another request parameter, Amazon EC2 returns an `IdempotentParameterMismatch` error.

You can use the same client token for the same request across different regions. For example, if you send an idempotent request to launch an instance in the `us-east-1` region, and then use the same client token in a request in other regions, we'll launch instances in each of those regions.

The following table shows common response codes and the recommended course of action.

Code	Retry	Comments
200 (OK)	No effect	The request has succeeded and any further retries have no effect.
400 (Client Error)	Not recommended	The request will never succeed (for example, a specified parameter value is not valid). If the request involves a resource that is in the process of changing states, repeating the request could possibly succeed (for example, launching an instance using an Amazon EBS volume that is about to become <code>available</code> ).
500 (Server Internal Error)	Recommended	The error is generally transient. Repeat the request with an appropriate back-off strategy.
503 (Server Unavailable)	Recommended	The error can occur when there is extreme load. Repeat the request with an appropriate back-off strategy.

## Idempotency Support

The following commands and actions are idempotent:

- `associate-address` (AWS CLI)
- `AssociateAddress`
- `disassociate-address` (AWS CLI)
- `DisassociateAddress`
- `ec2-associate-address` (Amazon EC2 CLI)
- `ec2-disassociate-address` (Amazon EC2 CLI)
- `ec2-terminate-instances` (Amazon EC2 CLI)
- `terminate-instances` (AWS CLI)
- `TerminateInstances`

The following commands and actions support idempotent operations using a client token:

- `copy-image` (AWS CLI)
- `CopyImage`
- `create-reserved-instances-listing` (AWS CLI)
- `CreateReservedInstancesListing`
- `ec2-copy-image` (Amazon EC2 CLI)
- `ec2-create-reserved-instances-listing` (Amazon EC2 CLI)
- `ec2-modify-reserved-instances` (Amazon EC2 CLI)
- `ec2-run-instances` (Amazon EC2 CLI)
- `modify-reserved-instances` (AWS CLI)
- `ModifyReservedInstances`
- `run-instances` (AWS CLI)
- `RunInstances`

## Example Idempotent Command

To make a command an idempotent request, add the `--client-token` option. The client token is a unique, case-sensitive string of up to 64 ASCII characters.

### AWS CLI

Use the `run-instances` command as follows to make an idempotent request:

```
aws ec2 run-instances --image-id ami-b232d0db --count 1 --key-name my-key-pair  
--client-token 550e8400-e29b-41d4-a716-446655440000
```

### Amazon EC2 CLI

Use the `ec2-run-instances` command as follows to make an idempotent request:

```
ec2-run-instances ami-b232d0db -k my-key-pair --client-token 550e8400-e29b-41d4-  
a716-446655440000
```

## Example Idempotent Query

Use the `RunInstances` action as follows to make an idempotent request:

```
https://ec2.amazonaws.com/?Action=RunInstances  
&ImageId=ami-3ac33653  
&MaxCount=1  
&MinCount=1  
&KeyName=my-key-pair  
&ClientToken=550e8400-e29b-41d4-a716-446655440000  
&AUTHPARAMS
```

The `ClientToken` parameter requires a unique, case-sensitive string of up to 64 ASCII characters.

## SOAP Requests

We have deprecated the SOAP API for Amazon EC2. We will continue to support SOAP requests for API versions up to and including version 2014-02-01, until the end of December 2014. If you use a SOAP request against a later API version, or after December 2014, you will receive the following response:

```
Client.UnsupportedProtocol: SOAP is no longer supported.
```

Similarly, the AWS software development kits (SDKs) will continue to support SOAP requests for Amazon EC2 API versions up to and including version 2014-02-01, until the end of December 2014.

If you are using the Amazon EC2 CLI tools, you will be able to use the `EC2_PRIVATE_KEY` and `EC2_CERT` environment variables for versions up to and including version 1.6.13.0. Thereafter, you must use the `AWS_ACCESS_KEY` and `AWS_SECRET_KEY` variables instead. For more information, see [Setting Up the Amazon EC2 CLI and AMI Tools](#).

We recommend that you use the Query API for Amazon EC2, or the SDKs for AWS. For more information, see [Making API Requests \(p. 580\)](#).

# Logging Amazon EC2 API Calls Using AWS CloudTrail

Amazon EC2 and Amazon VPC are integrated with CloudTrail, a service that captures API calls made by or on behalf of Amazon EC2 and Amazon VPC and delivers the log files to an Amazon S3 bucket that you specify. The API calls can be made indirectly by using the Amazon EC2 or Amazon VPC console, or directly by using the Amazon EC2 API. Using the information collected by CloudTrail, you can determine what request was made, the source IP address from which the request was made, who made the request, when it was made, and so on. To learn more about CloudTrail, including how to configure and enable it, see the [AWS CloudTrail User Guide](#).

## Amazon EC2 Information in CloudTrail

When CloudTrail logging is enabled, calls made to Amazon EC2 and Amazon VPC actions are tracked in log files, along with any other AWS service records. CloudTrail determines when to create and write to a new file based on a specified time period and file size.

All of the Amazon EC2 and Amazon VPC actions are logged. For example, calls to the [RunInstances](#), [DescribeInstances](#), or [CreateImage](#) API actions generate entries in the CloudTrail log files.

Every log entry contains information about who generated the request. The user identity information in the log helps you determine whether the request was made with root or IAM user credentials, with temporary security credentials for a role or federated user, or by another AWS service. For more information, see the **userIdentity** field in the [CloudTrail Event Reference](#).

You can store your log files in your bucket for as long as you want, but you can also define Amazon S3 lifecycle rules to archive or delete log files automatically. By default, your log files are encrypted by using Amazon S3 server-side encryption (SSE).

You can choose to have CloudTrail publish Amazon SNS notifications when new log files are delivered if you want to take quick action upon log file delivery. For more information, see [Configuring Amazon SNS Notifications](#).

You can also aggregate Amazon EC2 and Amazon VPC log files from multiple AWS regions and multiple AWS accounts into a single Amazon S3 bucket. For more information, see [Aggregating CloudTrail Log Files to a Single Amazon S3 Bucket](#).

## Understanding Amazon EC2 Log File Entries

CloudTrail log files can contain one or more log entries where each entry is made up of multiple JSON-formatted events. A log entry represents a single request from any source and includes information about the requested action, any input parameters, the date and time of the action, and so on. The log entries are not in any particular order. That is, they are not an ordered stack trace of the public API calls.

The following log file record shows that a user terminated two instances.

```
{
  "Records": [
    {
      "eventVersion": "1.01",
      "userIdentity": {
        "type": "Root",
        "principalId": "111122223333",
        "arn": "arn:aws:iam::111122223333:user/testuser",
```

```
    "accountId": "111122223333",
    "accessKeyId": "AKIAIOSFODNN7EXAMPLE",
    "sessionContext": {
      "attributes": {
        "mfaAuthenticated": "false",
        "creationDate": "2014-05-02T08:27:22Z"
      }
    }
  },
  "eventTime": "2014-05-02T08:27:45Z",
  "eventSource": "ec2.amazonaws.com",
  "eventName": "TerminateInstances",
  "awsRegion": "us-east-1",
  "sourceIPAddress": "192.0.2.64",
  "userAgent": "EC2ConsoleBackend, aws-sdk-java/unknown-version
Linux/2.6.18-308.24.1.1123.6.fleetxen Java_HotSpot(TM)_64-Bit_Server_VM/24.51-
b03",
  "requestParameters": {
    "instancesSet": {
      "items": [
        {
          "instanceId": "i-1a2b3c4d"
        },
        {
          "instanceId": "i-111bbb33"
        }
      ]
    }
  },
  "responseElements": {
    "instancesSet": {
      "items": [
        {
          "instanceId": "i-1a2b3c4d",
          "currentState": {
            "code": 48,
            "name": "terminated"
          },
          "previousState": {
            "code": 48,
            "name": "terminated"
          }
        },
        {
          "instanceId": "i-111bbb33",
          "currentState": {
            "code": 48,
            "name": "terminated"
          },
          "previousState": {
            "code": 48,
            "name": "terminated"
          }
        }
      ]
    }
  },
  "requestID": "be112233-1ba5-4ae0-8e2b-1c302example",
```

```
    "eventID": "6e12345-2a4e-417c-aa78-7594fexample"  
  }  
]  
}
```

# Common Query Parameters

---

Most Amazon EC2 API actions support the parameters described in the following tables. The common parameters vary depending on whether you're using Signature Version 2 or Signature Version 4 to sign your requests.

For more information about using the Query API for Amazon EC2, see [Making API Requests \(p. 580\)](#).

## Topics

- [Common Query Parameters for Signature Version 2 \(p. 593\)](#)
- [Common Query Parameters for Signature Version 4 \(p. 594\)](#)

## Common Query Parameters for Signature Version 2

For more information about Signature Version 2, see [Signature Version 2 Signing Process](#) in the *Amazon Web Services General Reference*.

Name	Description	Required
<i>Action</i>	The action to perform.  Example: RunInstances	Yes
<i>Version</i>	The API version to use, as specified in the WSDL file.  Example: 2014-09-01	Yes
<i>AWSSessionToken</i>	The access key ID for the request sender. This identifies the account which will be charged for usage of the service. The account that's associated with the access key ID must be signed up for Amazon EC2, or the request isn't accepted.  Example: AKIAIOSFODNN7EXAMPLE	Yes



**Amazon Elastic Compute Cloud API Reference**  
**Common Query Parameters for Signature Version 4**

Name	Description	Required
<i>Expires</i>	The date and time at which the signature included in the request expires, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see <a href="#">ISO 8601</a> .  Example: 2006-07-07T15:04:56Z	Conditional. Requests must include either <i>Timestamp</i> or <i>Expires</i> , but cannot contain both.
<i>Timestamp</i>	The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see <a href="#">ISO 8601</a> .  Example: 2006-07-07T15:04:56Z	Conditional. Requests must include either <i>Timestamp</i> or <i>Expires</i> , but cannot contain both.
<i>Signature</i>	The request signature.  Example: Qnp14Qk/7tINHzfXCiT7VEXAMPLE	Yes
<i>SignatureMethod</i>	The hash algorithm you use to create the request signature. Valid values: HmacSHA256   HmacSHA1.  Example: HmacSHA256	Yes
<i>SignatureVersion</i>	The signature version you use to sign the request. Set this value to 2.  Example: 2	Yes
<i>DryRun</i>	Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns <i>DryRunOperation</i> ; otherwise, it returns <i>UnauthorizedOperation</i> .	No
<i>SecurityToken</i>	The temporary security token obtained through a call to AWS Security Token Service.  Example: AQEXAMPLEH4aoH0cJ6t4B1CEwN10Tgk5ITtFwqRcOTfrh3c/L	No

Parameter values must be URL-encoded. This is true for any Query parameter passed to Amazon EC2 and is typically necessary in the *Signature* parameter. Some clients do this automatically, but this is not the norm.

## Common Query Parameters for Signature Version 4

For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

**Amazon Elastic Compute Cloud API Reference**  
**Common Query Parameters for Signature Version 4**

Name	Description	Required
<i>Action</i>	The action to perform.  Example: RunInstances	Yes
<i>Version</i>	The API version to use, as specified in the WSDL file.  Example: 2014-09-01	Yes
<i>X-Amz-Algorithm</i>	The hash algorithm you use to create the request signature.  Example: AWS4-HMAC-SHA256	Yes
<i>X-Amz-Credential</i>	The credential scope for the request, in the format <i>access-key-ID/YYYYMMDD/region/service/aws4_request</i>  Example: AKIDEXAMPLE/20140707/us-east-1/ec2/aws4_request	Yes
<i>X-Amz-Date</i>	The date and time at which the request is signed, in the format YYYYMMDDThhmmssZ. The date must match the date that's included in the credential scope for the <i>X-Amz-Credential</i> parameter, or the date used in an <i>Authorization</i> header (see the note below the table).  Example: 20140707T150456Z	Yes
<i>X-Amz-SignedHeaders</i>	The headers you are including as part of the request. At a minimum, you must include the <i>host</i> header. If you include an <i>x-amz-date</i> header in your request, you must include it in the list of signed headers.  Example: content-type;host;user-agent	Yes
<i>X-Amz-Signature</i>	A signature derived from your secret access key.  Example: ced6826de92d2bdeed8f846f0bf508e8559example	Yes
<i>X-Amz-Security-Token</i>	The temporary security token obtained through a call to AWS Security Token Service.  Example: AQEXAMPLEH40GYP1qzALFCFwNElPTy9-SttFFwqRcOTfR3C/L	No
<i>DryRun</i>	Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns <i>DryRunOperation</i> ; otherwise, it returns <i>UnauthorizedOperation</i> .	No

**Note**

The *X-Amz-Algorithm*, *X-Amz-Credential*, *X-Amz-SignedHeaders*, and *X-Amz-Signature* parameters can either be specified as separate parameters in the query string, or their values can be included in a single *Authorization* header. For more information, see [Adding Signing Information to the Authorization Header](#) in the *Amazon Web Services General Reference*.

# Granting IAM Users Required Permissions for Amazon EC2 Resources

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By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API. To allow IAM users to create or modify resources and perform tasks, you must create IAM policies that grant IAM users permissions for the specific resources and API actions they'll need to use, and then attach those policies to the IAM users or groups that require those permissions.

For more information, see [IAM Policies for Amazon EC2](#) in the *Amazon EC2 User Guide for Linux Instances*.

When you make an API request, the parameters that you specify in the request determine which resources an IAM user must have permission to use. If the user doesn't have the required permissions, the request fails. For example, if you use `RunInstances` to launch an instance in a subnet (by specifying the `SubnetId` parameter), an IAM user must have permission to use the VPC.

If an action creates a resource, an IAM user must have permission to create the resource or the request fails. Many Amazon EC2 resources receive an identifier when they are created. Because you can't know what that identifier is in advance, you must use a wildcard in the ARN for a resource when it is to be created by the request, as shown in the following sections. Note that because you can't tag a resource when you create it, you can't use any of the tag condition keys with a resource that's created by an action. (We'll add support for tagging a resource at creation in 2014.)

The following sections describe the resources that are created or modified by the Amazon EC2 actions, and the ARNs and Amazon EC2 condition keys that you can use in an IAM policy statement to grant users permission to create or modify particular Amazon EC2 resources. (We'll add support for additional actions, ARNs, and condition keys in 2014.)

## Topics

- [Customer Gateways](#) (p. 597)
- [DHCP Options Sets](#) (p. 597)
- [Instances](#) (p. 597)
- [Internet Gateways](#) (p. 599)
- [Network ACLs](#) (p. 600)

- [Route Tables](#) (p. 600)
- [Security Groups](#) (p. 600)
- [Volumes](#) (p. 601)
- [VPC Peering Connections](#) (p. 602)

## Customer Gateways

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">DeleteCustomerGateway</a> (p. 137)		
Customer gateway	<code>arn:aws:ec2:region:account:customer-gateway/cgw-id</code>	ec2:Region ec2:ResourceTag/tag-key

## DHCP Options Sets

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">DeleteDhcpOptions</a> (p. 139)		
DHCP options set	<code>arn:aws:ec2:region:account:dhcp-options/dhcp-options-id</code>	ec2:Region ec2:ResourceTag/tag-key

## Instances

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">RebootInstances</a> (p. 418)		
Instance	<code>arn:aws:ec2:region:account:instance/instance-id</code>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy
<b>Action:</b> <a href="#">RunInstances</a> (p. 464)		
Image	<code>arn:aws:ec2:region::image/image-id</code>	ec2:ImageType ec2:Owner ec2:Public ec2:Region ec2:RootDeviceType ec2:ResourceTag/tag-key

**Amazon Elastic Compute Cloud API Reference  
Instances**

Resource	ARN Format	Condition Keys
Instance	<code>arn:aws:ec2:region:account:instance/*</code>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:RootDeviceType ec2:Tenancy
Key pair	<code>arn:aws:ec2:region:account:key-pair/key-pair-name</code>	ec2:Region
Network interface	<code>arn:aws:ec2:region:account:network-interface/*</code> (if launching into a VPC, for creating a network interface)  <code>arn:aws:ec2:region:account:network-interface/eni-id</code> (if specifying an existing network interface)	ec2:AvailabilityZone ec2:Region ec2:Subnet ec2:ResourceTag/tag-key ec2:Vpc
Placement group	<code>arn:aws:ec2:region:account:placement-group/placement-group-name</code>	ec2:Region ec2:PlacementGroupStrategy
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Snapshot	<code>arn:aws:ec2:region::snapshot/snapshot-id</code>	ec2:Owner ec2:ParentVolume ec2:Region ec2:SnapshotTime ec2:ResourceTag/tag-key ec2:VolumeSize
Subnet	<code>arn:aws:ec2:region:account:subnet/subnet-id</code>	ec2:AvailabilityZone ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Volume	<code>arn:aws:ec2:region:account:volume/*</code> (if launching from an EBS-backed image)	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:VolumeIops ec2:VolumeSize ec2:VolumeType
<b>Action:</b> <a href="#">StartInstances</a> (p. 474)		

Resource	ARN Format	Condition Keys
Instance	<code>arn:aws:ec2:region:account:instance/instance-id</code>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy
<b>Action:</b> <a href="#">StopInstances</a> (p. 476)		
Instance	<code>arn:aws:ec2:region:account:instance/instance-id</code>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy
<b>Action:</b> <a href="#">TerminateInstances</a> (p. 478)		
Instance	<code>arn:aws:ec2:region:account:instance/instance-id</code>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy

## Internet Gateways

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">DeleteInternetGateway</a> (p. 141)		
Internet gateway	<code>arn:aws:ec2:region:account:internet-gateway/igw-id</code>	ec2:Region ec2:ResourceTag/tag-key

## Network ACLs

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">DeleteNetworkAcl</a> (p. 145)		
Network ACL	<code>arn:aws:ec2:region:account:network-acl/nacl-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">DeleteNetworkAclEntry</a> (p. 147)		
Network ACL	<code>arn:aws:ec2:region:account:network-acl/nacl-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc

## Route Tables

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">DeleteRoute</a> (p. 153)		
Route table	<code>arn:aws:ec2:region:account:route-table/route-table-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">DeleteRouteTable</a> (p. 155)		
Route table	<code>arn:aws:ec2:region:account:route-table/route-table-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc

## Security Groups

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">AuthorizeSecurityGroupEgress</a> (p. 35)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">AuthorizeSecurityGroupIngress</a> (p. 38)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">DeleteSecurityGroup</a> (p. 157)		

Resource	ARN Format	Condition Keys
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">RevokeSecurityGroupEgress</a> (p. 458)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">RevokeSecurityGroupIngress</a> (p. 461)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc

## Volumes

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">AttachVolume</a> (p. 30)		
Instance	<i>arn:aws:ec2:region:account:instance/instance-id</i>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy
Volume	<i>arn:aws:ec2:region:account:volume/volume-id</i>	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/tag-key ec2:Volumelops ec2:VolumeSize ec2:VolumeType
<b>Action:</b> <a href="#">DeleteVolume</a> (p. 167)		



Resource	ARN Format	Condition Keys
Volume	<code>arn:aws:ec2:region:account:volume/volume-id</code>	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/tag-key ec2:Volumelops ec2:VolumeSize ec2:VolumeType
<b>Action:</b> <a href="#">DetachVolume</a> (p. 362)		
Instance	<code>arn:aws:ec2:region:account:instance/instance-id</code>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy
Volume	<code>arn:aws:ec2:region:account:volume/volume-id</code>	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/tag-key ec2:Volumelops ec2:VolumeSize ec2:VolumeType

## VPC Peering Connections

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">AcceptVpcPeeringConnection</a> (p. 12)		
VPC	<code>arn:aws:ec2:region:account:vpc/vpc-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Tenancy
VPC peering connection	<code>arn:aws:ec2:region:account:vpcpeeringconnection/vpcpeeringconnection-id</code>	ec2:AcceptorVpc ec2:Region ec2:ResourceTag/tag-key ec2:RequesterVpc
<b>Action:</b> <a href="#">CreateVpcPeeringConnection</a> (p. 127)		

**Amazon Elastic Compute Cloud API Reference**  
**VPC Peering Connections**

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Resource	ARN Format	Condition Keys
VPC	<code>arn:aws:ec2:region:account:vpc/vpc-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Tenancy
VPC peering connection	<code>arn:aws:ec2:region:account:vpc-peering-connection/*</code>	ec2:AccepterVpc ec2:Region ec2:RequesterVpc
<b>Action:</b> <a href="#">DeleteVpcPeeringConnection</a> (p. 170)		
VPC peering connection	<code>arn:aws:ec2:region:account:vpc-peering-connection/vpc-peering-connection-id</code>	ec2:AccepterVpc ec2:Region ec2:ResourceTag/tag-key ec2:RequesterVpc
<b>Action:</b> <a href="#">RejectVpcPeeringConnection</a> (p. 425)		
VPC peering connection	<code>arn:aws:ec2:region:account:vpc-peering-connection/vpc-peering-connection-id</code>	ec2:AccepterVpc ec2:Region ec2:ResourceTag/tag-key ec2:RequesterVpc

# Error Codes

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Amazon EC2 has two types of error codes:

- **Client error codes.** Usually these errors are caused by something the client did, such as use an action or resource on behalf of a user that doesn't have permission to use the action or resource, or specify an identifier that is not valid. These errors are accompanied by a 400-series HTTP response code.
- **Server error codes.** Usually these errors are caused by a server-side issue. These errors are accompanied by a 500-series HTTP response code.

The documentation for each Amazon EC2 API action lists the common client errors that the action might return.

## Topics

- [Common Causes of Client Errors \(p. 604\)](#)
- [Client Error Codes \(p. 605\)](#)
- [Summary of Server Error Codes \(p. 620\)](#)
- [Request Error Response \(p. 620\)](#)
- [Example Error Response Request \(p. 620\)](#)
- [Eventual Consistency \(p. 621\)](#)

## Common Causes of Client Errors

There are a number of reasons that you might encounter an error while performing a request. Some errors can be prevented or easily solved by following these guidelines:

- **Specify the region:** Some resources can't be shared between regions. If you are specifying a resource that's located in a region other than the default region (us-east-1), you need to specify its region in the request. If the resource cannot be found, you'll get the following kind of error: `Client.InvalidResource.NotFound`; for example, `Client.InvalidInstanceID.NotFound`.
- **Allow for eventual consistency:** Some errors are caused because a previous request has not yet propagated through the system. For more information, see [Eventual Consistency \(p. 586\)](#).
- **Use a sleep interval between request rates:** Amazon EC2 API requests are throttled to help maintain the performance of the service. If your requests have been throttled, you'll get the following error: `Client.RequestLimitExceeded`. For more information, see [Query API Request Rate \(p. 585\)](#).

- **Use the full ID of the resource:** When specifying a resource, ensure that you use its full ID, and not its user-supplied name or description. For example, when specifying a security group in a request, use its ID in the form `sg-xxxxxx`.
- **Check your services:** Ensure that you have signed up for all the services you are attempting to use. You can check which services you're signed up for by going to the **My Account** section of the [AWS home page](#).
- **Check your permissions:** Ensure that you have the required permissions to carry out the request. If you are not authorized, you'll get the following error: `Client.UnauthorizedOperation`. For more information, see [Controlling Access](#) in the *Amazon EC2 User Guide for Linux Instances*.
- **Check your VPC:** Some resources cannot be shared between VPCs; for example, security groups.
- **Check your credentials:** Ensure that you provide your access keys when you are making requests; that you have entered the credentials correctly; and, if you have more than one account, that you are using the correct credentials for a particular account. If the provided credentials are incorrect, you may get the following error: `Client.AuthFailure`.

## Client Error Codes

Error Code	Description
<code>ActiveVpcPeeringConnectionPerVpcLimitExceeded</code>	You've reached the limit on the number of active VPC peering connections you can have for the specified VPC.
<code>AddressLimitExceeded</code>	You've reached the limit on the number of Elastic IP addresses that you can allocate.  For more information, see <a href="#">Elastic IP Address Limit</a> . If you need additional Elastic IP addresses, complete the <a href="#">Amazon EC2 Elastic IP Address Request Form</a> . If you need additional Elastic IP addresses for your VPCs, complete the <a href="#">Amazon VPC Limits form</a> .
<code>AttachmentLimitExceeded</code>	You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.
<code>AuthFailure</code>	The provided credentials could not be validated. You may not be authorized to carry out the request; for example, associating an Elastic IP address that is not yours, or trying to use an AMI for which you do not have permissions. Ensure that your account is authorized to use the Amazon EC2 service, that your credit card details are correct, and that you are using the correct access keys.
<code>Blocked</code>	Your account is currently blocked. Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.
<code>BundlingInProgress</code>	The specified instance already has a bundling task in progress.
<code>CannotDelete</code>	You cannot delete the 'default' security group in your VPC, but you can change its rules. For more information, see <a href="#">Amazon EC2 Security Groups</a> .

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

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<b>Error Code</b>	<b>Description</b>
<code>ConcurrentSnapshotLimitExceeded</code>	You've reached the limit on the number of concurrent snapshots you can create on the specified volume. Wait until the 'pending' requests have completed, and check that you do not have snapshots that are in a incomplete state, such as 'error', which count against your concurrent snapshot limit.
<code>ConcurrentTagAccess</code>	You can't run simultaneous commands to modify a tag for a specific resource. Allow sufficient wait time for the previous request to complete, then retry your request. For more information, see <a href="#">Error Retries and Exponential Backoff in AWS</a> .
<code>CustomerGatewayLimitExceeded</code>	You've reached the limit on the number of customer gateways you can create for the region. For more information, see <a href="#">Amazon VPC Limits</a> . To request an increase on your customer gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .
<code>DependencyViolation</code>	The specified object has dependent resources. A number of resources in a VPC may have dependent resources, which prevent you from deleting or detaching them. Remove the dependencies first, then retry your request. For example, this error occurs if you try to delete a security group in a VPC that is in use by another security group.
<code>DiskImageSizeTooLarge</code>	The disk image exceeds the allowed limit (for instance or volume import).
<code>DryRunOperation</code>	The user has the required permissions, so the request would have succeeded, but the <code>DryRun</code> parameter was used.
<code>EncryptedVolumesNotSupported</code>	Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see <a href="#">Amazon EBS encryption</a> in the <i>Amazon EC2 User Guide for Linux Instances</i> .
<code>FilterLimitExceeded</code>	The request uses too many filters or too many filter values.
<code>Gateway.NotAttached</code>	An Internet gateway is not attached to a VPC. If you are trying to detach an Internet gateway, ensure that you specify the correct VPC. If you are trying to associate an Elastic IP address with a network interface or an instance, ensure that an Internet gateway is attached to the relevant VPC.
<code>IdempotentParameterMismatch</code>	The request uses the same client token as a previous, but non-identical request. Do not reuse a client token with different requests, unless the requests are identical.

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

Error Code	Description
<code>IncorrectInstanceState</code>	<p>The instance is in an incorrect state, so the requested action can't be completed. For example, some instance attributes, such as user data, can only be modified if the instance is in a 'stopped' state.</p> <p>If you are associating an Elastic IP address with a network interface, ensure that the instance that the interface is attached to is not in the 'pending' state.</p>
<code>IncorrectState</code>	<p>The resource is in an incorrect state for the request. This error can occur if you are trying to attach a volume that is still being created. Ensure that the volume is in the 'available' state. If you are creating a snapshot, ensure that the previous request to create a snapshot on the same volume has completed. If you are deleting a virtual private gateway, ensure that it's detached from the VPC.</p>
<code>InstanceLimitExceeded</code>	<p>You've reached the limit on the number of instances you can run concurrently. The limit depends on the instance type. For more information, see <a href="#">How many instances can I run in Amazon EC2</a>. If you need additional instances, complete the <a href="#">Amazon EC2 Instance Request Form</a>.</p>
<code>InsufficientFreeAddressesInSubnet</code>	<p>The specified subnet does not contain enough free IP addresses to fulfill your request. Use the <a href="#">DescribeSubnets</a> request to view how many IP addresses are available (unused) in your subnet. IP addresses associated with stopped instances are considered unavailable.</p>
<code>InsufficientReservedInstancesCapacity</code>	<p>There is insufficient capacity for the requested Reserved Instances.</p>
<code>InternetGatewayLimitExceeded</code>	<p>You've reached the limit on the number of Internet gateways that you can create. For more information, see <a href="#">Amazon VPC Limits</a>. To request an increase on the Internet gateway limit, complete the <a href="#">Amazon VPC Limits form</a>.</p>
<code>InvalidAddress.NotFound</code>	<p>The specified Elastic IP address that you are describing cannot be found. Ensure that you specify the region in which the IP address is located, if it's not in the default region.</p>
<code>InvalidAddressID.NotFound</code>	<p>The specified allocation ID for the Elastic IP address you are trying to release cannot be found. Ensure that you specify the region in which the IP address is located, if it's not in the default region.</p>
<code>InvalidAllocationID.NotFound</code>	<p>The specified allocation ID you are trying to describe or associate does not exist. Ensure that you specify the region in which the IP address is located, if it's not in the default region.</p>

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<code>InvalidAMIAttributeItemValue</code>	The value of an item added to, or removed from, an image attribute is not valid. If you are specifying a <code>userId</code> , check that it is in the form of an AWS account ID, without hyphens.
<code>InvalidAMIID.Malformed</code>	The specified AMI ID is not valid. Ensure that you provide the full AMI ID, in the form <code>ami-xxxxxx</code> .
<code>InvalidAMIID.NotFound</code>	The specified AMI does not exist. Check the AMI ID, and ensure that you specify the region in which the AMI is located, if it's not in the default region. This error may also occur if you specified an incorrect kernel ID when launching an instance.
<code>InvalidAMIID.Unavailable</code>	The specified AMI has been deregistered and is no longer available, or is not in a state from which you can launch an instance.
<code>InvalidAMIName.Duplicate</code>	The specified AMI name is already in use by another AMI. If you have recently deregistered an AMI with the same name, allow enough time for the change to propagate through the system, and retry your request.
<code>InvalidAMIName.Malformed</code>	AMI names must be between 3 and 128 characters long, and may contain letters, numbers, and only the following characters: ( ) . - / _
<code>InvalidAssociationID.NotFound</code>	The specified association ID (for an Elastic IP address, a route table, or network ACL) does not exist. Ensure that you specify the region in which the association ID is located, if it's not in the default region.
<code>InvalidAttachment.NotFound</code>	Indicates an attempt to detach a volume from an instance to which it is not attached.
<code>InvalidAttachmentID.NotFound</code>	The specified network interface attachment does not exist.
<code>InvalidBlockDeviceMapping</code>	A block device mapping parameter is not valid. The returned message indicates the incorrect value.
<code>InvalidBundleID.NotFound</code>	The specified bundle task ID cannot be found. Ensure that you specify the region in which the bundle task is located, if it's not in the default region.
<code>InvalidConversionTaskId</code>	The specified conversion task ID (for instance or volume import) is not valid.
<code>InvalidCustomerGateway.DuplicateIpAddress</code>	There is a conflict among the specified gateway IP addresses.
<code>InvalidCustomerGatewayId.Malformed</code>	The specified customer gateway ID is malformed, or cannot be found. Specify the ID in the form <code>cgw-xxxxxxx</code> , and ensure that you specify the region in which the customer gateway is located, if it's not in the default region.

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

Error Code	Description
<code>InvalidCustomerGatewayID.NotFound</code>	The specified customer gateway ID cannot be found. Ensure that you specify the region in which the customer gateway is located, if it's not in the default region.
<code>InvalidDevice.InUse</code>	The device to which you are trying to attach (for example, <code>/dev/sdh</code> ) is already in use on the instance.
<code>InvalidDhcpOptionID.NotFound</code>	The specified DHCP options set does not exist. Ensure that you specify the region in which the DHCP options set is located, if it's not in the default region.
<code>InvalidDhcpOptionsID.NotFound</code>	The specified DHCP options set does not exist. Ensure that you specify the region in which the DHCP options set is located, if it's not in the default region.
<code>InvalidDhcpOptionsId.Malformed</code>	The specified DHCP options set ID is not valid. Ensure that you provide the full DHCP options set ID in the request, in the form <code>dopt-xxxxxx</code> .
<code>InvalidExportTaskID.NotFound</code>	The specified export task ID cannot be found.
<code>InvalidFilter</code>	The specified filter is not valid.
<code>InvalidFormat</code>	The specified disk format (for the instance or volume import) is not valid.
<code>InvalidGatewayID.NotFound</code>	The specified gateway does not exist.
<code>InvalidGroup.Duplicate</code>	You cannot create a security group with the same name as an existing security group in the same VPC, or the same region (EC2-Classic).
<code>InvalidGroupId.Malformed</code>	The specified security group ID is not valid. Ensure that you provide the full security group ID in the request, in the form <code>sg-xxxxxxx</code> .
<code>InvalidGroup.InUse</code>	The specified security group can't be deleted because it's in use by another security group. You can remove dependencies by modifying or deleting rules in the affected security groups.
<code>InvalidGroup.NotFound</code>	<p>The specified security group does not exist. Ensure that you provide the full security group ID in the request, in the form <code>sg-xxxxxxx</code>.</p> <p>This error may occur because the ID of a recently created security group has not propagated through the system. For more information, see <a href="#">Eventual Consistency</a> (p. 586).</p> <p>You cannot specify a security group that is in a different region or VPC to the request. For example, if you are creating a network interface, you cannot specify a security group that is associated with a different VPC to the subnet you've specified in your request.</p>



Error Code	Description
<code>InvalidGroup.Reserved</code>	The name 'default' is reserved, and cannot be used to create a new security group. You also cannot delete the default EC2-Classic security group, but you can change its rules. For more information, see <a href="#">Amazon EC2 Security Groups</a> .
<code>InvalidID</code>	The specified ID for the resource you are trying to tag is not valid. Ensure that you provide the full resource ID; for example, <code>ami-2bb65342</code> for an AMI.  If you're using the command line tools on a Windows system, you might need to use quotation marks for the key-value pair; for example, <code>"Name=TestTag"</code> .
<code>InvalidInput</code>	An input parameter in the request is invalid; for example, if you specified an incorrect Reserved Instance listing ID in the request.
<code>InvalidInstanceAttributeValue</code>	The specified instance attribute value is not valid. This error is most commonly encountered when trying to set the <code>InstanceType/--instance-type</code> attribute to an unrecognized value.
<code>InvalidInstanceID</code>	This error commonly occurs when trying to associate an IP address with an instance that is not in the 'running' state. This error can also occur when trying to perform an operation on an instance that has multiple network interfaces.  A network interface can have individual attributes; therefore, you may need to specify the network interface ID as part of the request, or use a different request. For example, each network interface in an instance can have a source/destination check flag. If you want to modify this attribute, you need to modify the network interface attribute, and not the instance attribute.  If you want to create a route in a route table, you need to provide a specific network interface ID as part of the request.
<code>InvalidInstanceID.Malformed</code>	The specified instance ID is not valid. Ensure that you provide the full instance ID in the request, in the form <code>i-xxxxxx</code> .
<code>InvalidInstanceID.NotFound</code>	The specified instance does not exist. Ensure that you have indicated the region in which the instance is located, if it's not in the default region. This error may occur because the ID of a recently created instance has not propagated through the system. For more information, see <a href="#">Eventual Consistency (p. 586)</a> .
<code>InvalidInstanceType</code>	The specified instance does not support bundling. You can only bundle instance store-backed Windows instances.

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<code>InvalidInterface.IpAddressLimitExceeded</code>	The number of private IP addresses for a specified network interface exceeds the limit for the type of instance you are trying to launch. For more information about the maximum number of private IP addresses per ENI, see <a href="#">Private IP addresses per ENI</a> .
<code>InvalidInternetGatewayID.NotFound</code>	The specified Internet gateway does not exist. Ensure that you specify the region in which the Internet gateway is located, if it's not in the default region.
<code>InvalidIPAddress.InUse</code>	The specified IP address is already in use. If you are trying to release an address, you must first disassociate it from the instance.
<code>InvalidKey.Format</code>	The key pair is not specified in a valid OpenSSH public key format.
<code>InvalidKeyPair.Duplicate</code>	The key pair name already exists in that region. If you are creating or importing a key pair, ensure that you use a unique name.
<code>InvalidKeyPair.Format</code>	The format of the public key you are attempting to import is not valid.
<code>InvalidKeyPair.NotFound</code>	The specified key pair name does not exist. Ensure that you specify the region in which the key pair is located, if it's not in the default region.
<code>InvalidManifest</code>	The specified AMI has an unparsable manifest, or you may not have access to the location of the manifest file in Amazon S3.
<code>InvalidNetworkAclEntry.NotFound</code>	The specified network ACL entry does not exist.
<code>InvalidNetworkAclID.NotFound</code>	The specified network ACL does not exist. Ensure that you specify the region in which the network ACL is located, if it's not in the default region.
<code>InvalidNetworkInterfaceAttachmentID.Malformed</code>	The ID for the network interface attachment is not valid. Ensure that you use the attachment ID rather than the network interface ID, in the form <i>eni-attach-xxxxxx</i> .
<code>InvalidNetworkInterface.InUse</code>	The specified interface is currently in use and cannot be deleted. Ensure that you have detached the network interface first.
<code>InvalidNetworkInterfaceId.Malformed</code>	The specified network interface ID is invalid. Ensure that you specify the network interface ID in the form <i>eni-xxxxxxx</i> .
<code>InvalidNetworkInterfaceID.NotFound</code>	The specified network interface does not exist. Ensure that you have provided the full ID for the network interface, in the form <i>eni-xxxxxx</i> . Ensure that you specify the region in which the network interface is located, if it's not in the default region.
<code>InvalidOption.Conflict</code>	A VPN connection between the virtual private gateway and the customer gateway already exists.

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<code>InvalidParameter</code>	A parameter specified in a request is not valid, is unsupported, or cannot be used. The returned message provides an explanation of the error value. For example, if you are launching an instance, you can't specify a security group and subnet that are in different VPCs.
<code>InvalidParameterCombination</code>	Indicates an incorrect combination of parameters, or a missing parameter. For example, trying to terminate an instance without specifying the instance ID.
<code>InvalidParameterValue</code>	A value specified in a parameter is not valid, is unsupported, or cannot be used. Ensure that you specify a resource by using its full ID. The returned message provides an explanation of the error value.
<code>InvalidPermission.Duplicate</code>	The specified inbound or outbound rule already exists for that security group.
<code>InvalidPermission.Malformed</code>	The specified security group rule is malformed. If you are specifying an IP address range, ensure that you use CIDR notation; for example, 203.0.113.0/24.
<code>InvalidPermission.NotFound</code>	The specified rule does not exist in this security group.
<code>InvalidPlacementGroup.Duplicate</code>	The specified placement group already exists in that region.
<code>InvalidPlacementGroup.InUse</code>	The specified placement group is in use. If you are trying to delete a placement group, ensure that its instances have been terminated.
<code>InvalidPlacementGroup.Unknown</code>	The specified placement group cannot be found. Ensure that you specify the region in which the placement group is located, if it's not in the default region.
<code>InvalidRequest</code>	The request is invalid. The returned message provides details about the nature of the error.
<code>InvalidReservationID.Malformed</code>	The specified reservation ID is not valid.
<code>InvalidReservationID.NotFound</code>	The specified reservation does not exist.
<code>InvalidReservedInstancesId</code>	The specified Reserved Instance does not exist.
<code>InvalidReservedInstancesOfferingId</code>	The specified Reserved Instances offering does not exist.
<code>InvalidRoute.Malformed</code>	The specified route is not valid. If you are deleting a route in a VPN connection, ensure that you've entered the value for the CIDR block correctly.
<code>InvalidRoute.NotFound</code>	The specified route does not exist in the specified route table. Ensure that you indicate the exact CIDR range for the route in the request. This error can also occur if you've specified a route table ID in the request that does not exist.
<code>InvalidRouteTableId.Malformed</code>	The specified route table ID is malformed. Ensure that you specify the route table ID in the form <code>rtb-xxxxxxx</code> .

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<code>InvalidRouteTableID.NotFound</code>	The specified route table does not exist. Ensure that you specify the route table ID in the form <i>rtb-xxxxxxx</i> , and that you specify the region in which the route table is located, if it's not in the default region.
<code>InvalidSecurityGroupID.NotFound</code>	The specified security group does not exist. If you are creating a network interface, ensure that you specify a VPC security group, and not an EC2-Classic security group. Ensure that you specify the full security group ID, in the form <i>sg-xxxxxx</i> .
<code>InvalidSecurity.RequestHasExpired</code>	The difference between the request timestamp and the AWS server time is greater than 5 minutes. Ensure that your system clock is accurate and configured to use the correct time zone.
<code>InvalidSnapshotID.Malformed</code>	The snapshot ID is not valid.
<code>InvalidSnapshot.InUse</code>	The snapshot that you are trying to delete is in use by one or more AMIs.
<code>InvalidSnapshot.NotFound</code>	The specified snapshot does not exist. Ensure that you specify the region in which the snapshot is located, if it's not in the default region.
<code>InvalidSpotDatafeed.NotFound</code>	You have no data feed for Spot Instances.
<code>InvalidSpotInstanceRequestID.Malformed</code>	The specified Spot Instance request ID is not valid. Ensure that you specify the Spot Instance request ID in the form <i>sir-xxxxxxx</i> .
<code>InvalidSpotInstanceRequestID.NotFound</code>	The specified Spot Instance request ID does not exist. Ensure that you specify the region in which the Spot Instance request is located, if it's not in the default region.
<code>InvalidState</code>	The specified resource is not in the correct state for the request; for example, if you are trying to enable monitoring on a recently terminated instance, or if you are trying to create a snapshot when a previous identical request has not yet completed.
<code>InvalidStateTransition</code>	The specified VPC peering connection is not in the correct state for the request. For example, you may be trying to accept a VPC peering request that has failed, or that was rejected.
<code>InvalidSubnet.Conflict</code>	The specified CIDR block conflicts with that of another subnet in your VPC.
<code>InvalidSubnetID.NotFound</code>	The specified subnet does not exist. Ensure that you have indicated the region in which the subnet is located, if it's not in the default region.

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<code>InvalidUserID.Malformed</code>	The specified user or owner is not valid. If you are performing a <a href="#">DescribeImages</a> request, you must specify a valid value for the <code>owner</code> or <code>executableBy</code> parameters, such as an AWS account ID. If you are performing a <a href="#">DescribeSnapshots</a> request, you must specify a valid value for the <code>owner</code> or <code>restorableBy</code> parameters.
<code>InvalidVolumeID.Duplicate</code>	The Amazon EBS volume already exists.
<code>InvalidVolumeID.Malformed</code>	The specified volume ID is not valid. Check the letter-number combination carefully; this error occurs if you have specified more than eight digits after the 'vol-' prefix.
<code>InvalidVolumeID.ZoneMismatch</code>	The specified volume and instance are in different Availability Zones.
<code>InvalidVolume.NotFound</code>	The specified volume does not exist. Ensure that you have indicated the region in which the volume is located, if it's not in the default region. Ensure that you are using the correct access credentials.
<code>InvalidVolume.ZoneMismatch</code>	The specified volume is not in the same Availability Zone as the specified instance. You can only attach an Amazon EBS volume to an instance if they are in the same Availability Zone.
<code>InvalidVpcID.NotFound</code>	The specified VPC does not exist. Use the full VPC ID in the request, in the form <code>vpc-xxxxxxx</code> . Ensure that you have indicated the region in which the VPC is located, if it's not in the default region.
<code>InvalidVpcPeeringConnectionId.Malformed</code>	The specified VPC peering connection ID is malformed. Ensure that you provide the ID in the form <code>pcx-xxxxxxx</code> .
<code>InvalidVpcPeeringConnectionID.NotFound</code>	The specified VPC peering connection ID does not exist. Ensure that you have indicated the region in which the VPC peering connection is located, if it's not in the default region.
<code>InvalidVpcRange</code>	The specified CIDR block range is not valid. The block range must be between a /28 netmask and /16 netmask. For more information, see <a href="#">Your VPC and Subnets</a> .
<code>InvalidVpcState</code>	The specified VPC already has a virtual private gateway attached to it.
<code>InvalidVpnConnectionID</code>	The specified VPN connection ID cannot be found. Ensure that you have indicated the region in which the VPN connection ID is located, if it's not in the default region.
<code>InvalidVpnConnectionID.NotFound</code>	The specified VPN connection ID does not exist. Ensure that you have indicated the region in which the VPN connection ID is located, if it's not in the default region.

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

Error Code	Description
<code>InvalidVpnGatewayAttachment.NotFound</code>	An attachment between the specified virtual private gateway and specified VPC does not exist. This error can also occur if you've specified an incorrect VPC ID in the request.
<code>InvalidVpnGatewayID.NotFound</code>	The specified virtual private gateway does not exist. Ensure that you have indicated the region in which the virtual private gateway is located, if it's not in the default region.
<code>InvalidZone.NotFound</code>	The specified Availability Zone does not exist, or is not available for you to use. Use the <a href="#">DescribeAvailabilityZones</a> request to list the Availability Zones that are currently available to you. Ensure that you have indicated the region for the Availability Zone in the request, if it's not in the default region. Specify the full name of the Availability Zone: for example, us-east-1a.
<code>LegacySecurityGroup</code>	You must delete the 2009-07-15-default security group before you can attach an Internet gateway.
<code>MaxIOPSLimitExceeded</code>	You've reached the limit on your IOPS usage for that region. If you need to increase your volume limit, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
<code>MaxSpotInstanceCountExceeded</code>	You've reached the limit on the number of Spot Instances that you can launch. The limit depends on the instance type. For more information, see <a href="#">How many instances can I run in Amazon EC2</a> . If you need additional instances, complete the <a href="#">Amazon EC2 Instance Request Form</a> .
<code>MissingParameter</code>	The request is missing a required parameter. Ensure that you have supplied all the required parameters for the request; for example, the resource ID.
<code>NetworkAclEntryAlreadyExists</code>	The specified rule number already exists in this network ACL.
<code>NetworkAclEntryLimitExceeded</code>	You've reached the limit on the number of rules that you can add to the network ACL. For more information, see <a href="#">Amazon VPC Limits</a> .
<code>NetworkAclLimitExceeded</code>	You've reached the limit on the number of network ACLs that you can create for the specified VPC. For more information, see <a href="#">Amazon VPC Limits</a> . To request an increase on your network ACL limit, complete the <a href="#">Amazon VPC Limits form</a> .
<code>NonEBSInstance</code>	The specified instance does not support Amazon EBS. Restart the instance and try again, to ensure that the code is run on an instance with updated code.
<code>NotExportable</code>	The specified instance cannot be exported. You can only export instances that were previously imported into Amazon EC2. For more information, see <a href="#">Exporting EC2 Instances</a>

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

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<b>Error Code</b>	<b>Description</b>
OperationNotPermitted	The specified operation is not allowed. This error can occur for a number of reasons; for example, you might be trying to terminate an instance that has termination protection enabled, or trying to detach the primary network interface (eth0) from an instance.
OptInRequired	You are not authorized to use the requested service. Ensure that you have subscribed to the service you are trying to use. If you are new to AWS, your account might take some time to be activated while your credit card details are being verified. This error message can apply to Amazon EC2, or individual AWS Marketplace product codes.
OutstandingVpcPeeringConnectionLimitExceeded	You've reached the limit on the number of VPC peering connection requests that you can create for the specified VPC.
PendingSnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots that you can have in the pending state.
PendingVerification	Your account is pending verification. Until the verification process is complete, you may not be able to carry out requests with this account. If you have questions, contact <a href="#">AWS Support</a> .
PrivateIpAddressLimitExceeded	You've reached the limit on the number of private IP addresses that you can assign to the specified network interface for that type of instance. For more information about the maximum number of private IP addresses per ENI, see <a href="#">Private IP addresses per ENI</a> .
RequestLimitExceeded	The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account. For best results, use an increasing or variable sleep interval between requests. For more information, see <a href="#">Query API Request Rate (p. 585)</a> .

**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

Error Code	Description
RequestResourceCountExceeded	<p>Details in your Spot request exceed the numbers allowed by the Spot service in one of the following ways, depending on the action that generated the error:</p> <p>—If you get this error when you submitted a bid for Spot Instances, check the number of Spot Instances specified in your request. The number shouldn't exceed the 3,000 maximum allowed per request. Resend your Spot Instance request and specify a number less than 3,000. If your account's regional Spot request limit is greater than 3,000 instances, you can access these instances by submitting multiple smaller requests.</p> <p>—If you get this error when you sent Describe Spot Instance requests, check the number of requests for Spot Instance data, the amount of data you requested, and how often you sent the request. The frequency with which you requested the data combined with the amount of data exceeds the levels allowed by the Spot service. Try again and submit fewer large Describe requests over longer intervals.</p>
ReservedInstancesLimitExceeded	Your current quota does not allow you to purchase the required number of Reserved Instances.
Resource.AlreadyAssociated	The specified resource is already in use. For example, in EC2-VPC, you cannot associate an Elastic IP address with an instance if it's already associated with another instance. You also cannot attach an Internet gateway to more than one VPC at a time.
ResourceCountExceeded	You have exceeded the number of resources allowed for this request; for example, if you try to launch more instances than AWS allows in a single request. This limit is separate from your individual resource limit. For more information about your resource count limit, contact AWS Support.
ResourceLimitExceeded	You have exceeded an Amazon EC2 resource limit. For example, you might have too many snapshot copies in progress.
RouteAlreadyExists	A route for the specified CIDR block already exists in this route table.
RouteLimitExceeded	You've reached the limit on the number of routes that you can add to a route table.
RouteTableLimitExceeded	You've reached the limit on the number of route tables that you can create for the specified VPC. For more information about route table limits, see <a href="#">Amazon VPC Limits</a> .
RulesPerSecurityGroupLimitExceeded	You've reached the limit on the number of rules that you can add to a security group. The limit depends on whether you are using EC2-Classical or EC2-VPC. For more information, see <a href="#">Security Group Rules</a> .



**Amazon Elastic Compute Cloud API Reference**  
**Client Error Codes**

Error Code	Description
SecurityGroupLimitExceeded	You've reached the limit on the number of security groups that you can create, or that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Creating Your Own Security Groups</a> .
SecurityGroupsPerInstanceLimitExceeded	You've reached the limit on the number of security groups that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Amazon EC2 Security Groups</a> .
SecurityGroupsPerInterfaceLimitExceeded	You've reached the limit on the number of security groups you can associate with the specified network interface. You are limited to five security groups per network interface.
SignatureDoesNotMatch	The request signature that Amazon has does not match the signature that you provided. Check your AWS access keys and signing method.
SnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots that you can create. To request an increase on your snapshot limit, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
SubnetLimitExceeded	You've reached the limit on the number of subnets that you can create for the specified VPC. For more information about subnet limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your subnet limit, complete the <a href="#">Amazon VPC Limits form</a> .
TagLimitExceeded	You've reached the limit on the number of tags that you can assign to the specified resource. For more information, see <a href="#">Tag Restrictions</a> .
UnauthorizedOperation	You are not authorized to perform this operation. Check your IAM policies, and ensure that you are using the correct access keys. For more information, see <a href="#">Controlling Access</a> . If the returned message is encoded, you can decode it using the <code>DecodeAuthorizationMessage</code> action. For more information, see <a href="#">DecodeAuthorizationMessage</a> in the <i>AWS Security Token Service API Reference</i> .
UnknownParameter	An unknown or unrecognized parameter was supplied. Requests that could cause this error include supplying a misspelled parameter or a parameter that is not supported for the specified API version.
UnknownVolumeType	The specified volume type is unsupported. The supported volume types are <code>gp2</code> , <code>io1</code> , and <code>standard</code> .
Unsupported	The specified request is unsupported. For example, you might be trying to launch an instance in an Availability Zone that currently has constraints on that instance type. The returned message provides details of the unsupported request.

Error Code	Description
UnsupportedOperation	The specified request includes an unsupported operation. For example, you can't stop an instance that's instance store-backed. Or you might be trying to launch an instance type that is not supported by the specified AMI. The returned message provides details of the unsupported operation.
VolumeInUse	The specified Amazon EBS volume is attached to an instance. Ensure that the specified volume is in an 'available' state.
VolumeLimitExceeded	You've reached the limit on your Amazon EBS volume storage. To request an increase, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
VolumeTypeNotAvailableInZone	The specified Availability Zone does not support Provisioned IOPS (SSD) volumes. Try launching your instance in a different Availability Zone, or don't specify a zone in the request. If you're creating a volume, try specifying a different Availability Zone in the request.
VPCIdNotSpecified	You have no default VPC in which to carry out the request. Specify a VPC ID or subnet ID, or in the case of security groups, specify the ID, and not the security group name. You can contact <a href="#">AWS Support</a> to create a new default VPC.
VpcLimitExceeded	You've reached the limit on the number of VPCs that you can create in the region. For more information about VPC limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your VPC limit, complete the <a href="#">Amazon VPC Limits form</a> .
VpcPeeringConnectionAlreadyExists	A VPC peering connection between the VPCs already exists.
VPCResourceNotSpecified	The specified resource can be used only in a VPC. If you are launching a T2 instance type, ensure that you have a VPC in your account, and then specify a subnet ID or network interface ID in the request.
VpnConnectionLimitExceeded	You've reached the limit on the number of VPN connections that you can create. For more information about limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your VPN connection limit, complete the <a href="#">Amazon VPC Limits form</a> .
VpnGatewayAttachmentLimitExceeded	You've reached the limit on the number of VPCs that can be attached to the specified virtual private gateway.
VpnGatewayLimitExceeded	You've reached the limit on the number of virtual private gateways that you can create. For more information about limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your virtual private gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .

## Summary of Server Error Codes

Error Code	Description
InsufficientAddressCapacity	Not enough available addresses to satisfy your minimum request. Reduce the number of addresses you are requesting or wait for additional capacity to become available.
InsufficientInstanceCapacity	There is not enough capacity to fulfill your instance request. Reduce the number of instances in your request, or wait for additional capacity to become available. The returned message might also give specific guidance about how to solve the problem.
InsufficientReservedInstanceCapacity	Not enough available Reserved Instances to satisfy your minimum request. Reduce the number of Reserved Instances in your request or wait for additional capacity to become available.
InternalServerError	An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a message on the <a href="#">AWS forums</a> .
Unavailable	The server is overloaded and can't handle the request.

## Request Error Response

The following shows the structure of a request error response.

```
<Response>
  <Errors>
    <Error>
      <Code>Error code text</Code>
      <Message>Error message</Message>
    </Error>
  </Errors>
  <RequestID>request ID</RequestID>
</Response>
```

## Example Error Response Request

The following shows an example of an error response.

```
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-4cbc822a' does not exist</Message>
    </Error>
  </Errors>
```

```
<RequestID>ea966190-f9aa-478e-9ede-cb5432daacc0</RequestID>  
</Response>
```

## Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that when you run an API command, the result may not be immediately visible to subsequent API commands, which can result in an error.

For more information about eventual consistency and how to manage it, see [Eventual Consistency \(p. 586\)](#).