
Amazon Elastic Compute Cloud

API Reference

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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
Request Parameters	12
Response Elements	12
Errors	12
Examples	12
AllocateAddress	14
Request Parameters	14
Response Elements	14
Errors	14
Examples	15
AssignPrivateIpAddresses	16
Request Parameters	16
Response Elements	16
Errors	17
Examples	17
AssociateAddress	18
Request Parameters	18
Response Elements	19
Errors	19
Examples	19
AssociateDhcpOptions	21
Request Parameters	21
Response Elements	21
Errors	21
Examples	22
AssociateRouteTable	23
Request Parameters	23
Response Elements	23
Errors	23
Examples	24
AttachClassicLinkVpc	25
Request Parameters	25
Response Elements	25
Errors	26
Examples	26
AttachInternetGateway	27
Request Parameters	27
Response Elements	27
Errors	27
Examples	27
AttachNetworkInterface	29
Request Parameters	29
Response Elements	29
Errors	29
Examples	30
AttachVolume	31
Request Parameters	31
Response Elements	32
Errors	32
Examples	32
AttachVpnGateway	33
Request Parameters	33

Response Elements	33
Errors	33
Examples	33
AuthorizeSecurityGroupEgress	35
Request Parameters	35
Response Elements	36
Errors	36
Examples	36
AuthorizeSecurityGroupIngress	38
Request Parameters	38
Response Elements	39
Errors	39
Examples	40
BundleInstance	42
Request Parameters	42
Response Elements	42
Errors	43
Examples	43
CancelBundleTask	44
Request Parameters	44
Response Elements	44
Errors	44
Examples	44
CancelConversionTask	46
Request Parameters	46
Response Elements	46
Errors	46
Examples	46
CancelExportTask	48
Request Parameters	48
Response Elements	48
Errors	48
Examples	48
CancelReservedInstancesListing	50
Request Parameters	50
Response Elements	50
Errors	50
Examples	50
CancelSpotInstanceRequests	53
Request Parameters	53
Response Elements	53
Errors	53
Examples	53
ConfirmProductInstance	55
Request Parameters	55
Response Elements	55
Errors	55
Examples	55
CopyImage	57
Request Parameters	57
Response Elements	57
Errors	58
Examples	58
CopySnapshot	59
Request Parameters	59
Response Elements	60
Errors	60
Examples	60

CreateCustomerGateway	61
Request Parameters	61
Response Elements	62
Errors	62
Examples	62
CreateDhcpOptions	63
Request Parameters	63
Response Elements	63
Errors	64
Examples	64
CreateImage	66
Request Parameters	66
Response Elements	67
Errors	67
Examples	67
CreateInstanceExportTask	68
Request Parameters	68
Response Elements	68
Errors	68
Examples	69
CreateInternetGateway	70
Request Parameters	70
Response Elements	70
Errors	70
Examples	70
CreateKeyPair	72
Request Parameters	72
Response Elements	72
Errors	72
Examples	73
CreateNetworkAcl	74
Request Parameters	74
Response Elements	74
Errors	74
Examples	74
CreateNetworkAclEntry	76
Request Parameters	76
Response Elements	77
Errors	77
Examples	77
CreateNetworkInterface	79
Request Parameters	79
Response Elements	80
Errors	80
Examples	80
CreatePlacementGroup	84
Request Parameters	84
Response Elements	84
Errors	84
Examples	85
CreateReservedInstancesListing	86
Request Parameters	86
Response Elements	86
Errors	87
Examples	87
CreateRoute	90
Request Parameters	90
Response Elements	91

Errors	91
Examples	91
CreateRouteTable	93
Request Parameters	93
Response Elements	93
Errors	93
Examples	93
CreateSecurityGroup	95
Request Parameters	95
Response Elements	96
Errors	96
Examples	96
CreateSnapshot	98
Request Parameters	98
Response Elements	98
Errors	99
Examples	99
CreateSpotDatafeedSubscription	100
Request Parameters	100
Response Elements	100
Errors	100
Examples	100
CreateSubnet	102
Request Parameters	102
Response Elements	103
Errors	103
Examples	103
CreateTags	104
Request Parameters	104
Response Elements	104
Errors	104
Examples	105
CreateVolume	106
Request Parameters	106
Response Elements	107
Errors	107
Examples	108
CreateVpc	109
Request Parameters	109
Response Elements	109
Errors	110
Examples	110
CreateVpcPeeringConnection	112
Request Parameters	112
Response Elements	112
Errors	113
Examples	113
CreateVpnConnection	115
Request Parameters	115
Response Elements	116
Errors	116
Examples	116
CreateVpnConnectionRoute	118
Request Parameters	118
Response Elements	118
Errors	118
Examples	118
CreateVpnGateway	120

Request Parameters	120
Response Elements	120
Errors	120
Examples	121
DeleteCustomerGateway	122
Request Parameters	122
Response Elements	122
Errors	122
Examples	122
DeleteDhcpOptions	124
Request Parameters	124
Response Elements	124
Errors	124
Examples	124
DeleteInternetGateway	126
Request Parameters	126
Response Elements	126
Errors	126
Examples	126
DeleteKeyPair	128
Request Parameters	128
Response Elements	128
Errors	128
Examples	128
DeleteNetworkAcl	130
Request Parameters	130
Response Elements	130
Errors	130
Examples	130
DeleteNetworkAclEntry	132
Request Parameters	132
Response Elements	132
Errors	132
Examples	133
DeleteNetworkInterface	134
Request Parameters	134
Response Elements	134
Errors	134
Examples	134
DeletePlacementGroup	136
Request Parameters	136
Response Elements	136
Errors	136
Examples	136
DeleteRoute	138
Request Parameters	138
Response Elements	138
Errors	138
Examples	138
DeleteRouteTable	140
Request Parameters	140
Response Elements	140
Errors	140
Examples	140
DeleteSecurityGroup	142
Request Parameters	142
Response Elements	142
Errors	142

Examples	142
DeleteSnapshot	144
Request Parameters	144
Response Elements	144
Errors	144
Examples	145
DeleteSpotDatafeedSubscription	146
Request Parameters	146
Response Elements	146
Errors	146
Examples	146
DeleteSubnet	147
Request Parameters	147
Response Elements	147
Errors	147
Examples	147
DeleteTags	149
Request Parameters	149
Response Elements	149
Errors	149
Examples	150
DeleteVolume	152
Request Parameters	152
Response Elements	152
Errors	152
Examples	152
DeleteVpc	154
Request Parameters	154
Response Elements	154
Errors	154
Examples	154
DeleteVpcPeeringConnection	156
Request Parameters	156
Response Elements	156
Errors	156
Examples	156
DeleteVpnConnection	158
Request Parameters	158
Response Elements	158
Errors	158
Examples	158
DeleteVpnConnectionRoute	160
Request Parameters	160
Response Elements	160
Errors	160
Examples	160
DeleteVpnGateway	162
Request Parameters	162
Response Elements	162
Errors	162
Examples	162
DeregisterImage	164
Request Parameters	164
Response Elements	164
Errors	164
Examples	164
DescribeAccountAttributes	166
Request Parameters	166

Response Elements	166
Errors	166
Examples	167
DescribeAddresses	170
Request Parameters	170
Response Elements	170
Errors	171
Examples	171
DescribeAvailabilityZones	173
Request Parameters	173
Response Elements	173
Errors	173
Examples	174
DescribeBundleTasks	175
Request Parameters	175
Response Elements	175
Errors	176
Examples	176
DescribeClassicLinkInstances	178
Request Parameters	178
Response Elements	179
Errors	179
Examples	179
DescribeConversionTasks	181
Request Parameters	181
Response Elements	181
Errors	181
Examples	181
DescribeCustomerGateways	183
Request Parameters	183
Response Elements	183
Errors	184
Examples	184
DescribeDhcpOptions	186
Request Parameters	186
Response Elements	186
Errors	187
Examples	187
DescribeExportTasks	189
Request Parameters	189
Response Elements	189
Errors	189
Examples	189
DescribeImageAttribute	191
Request Parameters	191
Response Elements	191
Errors	191
Examples	192
DescribeImages	194
Request Parameters	194
Response Elements	195
Errors	195
Examples	196
DescribeInstanceAttribute	199
Request Parameters	199
Response Elements	199
Errors	199
Examples	199

DescribeInstanceStatus	202
Request Parameters	202
Response Elements	204
Errors	204
Examples	204
DescribeInstances	208
Request Parameters	208
Response Elements	211
Errors	211
Examples	212
DescribeInternetGateways	216
Request Parameters	216
Response Elements	216
Errors	217
Examples	217
DescribeKeyPairs	218
Request Parameters	218
Response Elements	218
Errors	218
Examples	219
DescribeNetworkAcls	220
Request Parameters	220
Response Elements	221
Errors	221
Examples	221
DescribeNetworkInterfaceAttribute	224
Request Parameters	224
Response Elements	224
Errors	225
Examples	225
DescribeNetworkInterfaces	226
Request Parameters	226
Response Elements	227
Errors	227
Examples	228
DescribePlacementGroups	230
Request Parameters	230
Response Elements	230
Errors	230
Examples	231
DescribeRegions	232
Request Parameters	232
Response Elements	232
Errors	232
Examples	232
DescribeReservedInstances	234
Request Parameters	234
Response Elements	235
Errors	235
Examples	235
DescribeReservedInstancesListings	237
Request Parameters	237
Response Elements	237
Errors	238
Examples	238
DescribeReservedInstancesModifications	240
Request Parameters	240
Response Elements	241

Errors	241
Examples	241
DescribeReservedInstancesOfferings	242
Request Parameters	242
Response Elements	244
Errors	244
Examples	245
DescribeRouteTables	249
Request Parameters	249
Response Elements	250
Errors	250
Examples	250
DescribeSecurityGroups	252
Request Parameters	252
Response Elements	253
Errors	253
Examples	253
DescribeSnapshotAttribute	255
Request Parameters	255
Response Elements	255
Errors	255
Examples	256
DescribeSnapshots	257
Request Parameters	257
Response Elements	259
Errors	259
Examples	259
DescribeSpotDatafeedSubscription	261
Request Parameters	261
Response Elements	261
Errors	261
Examples	261
DescribeSpotInstanceRequests	263
Request Parameters	263
Response Elements	264
Errors	265
Examples	265
DescribeSpotPriceHistory	267
Request Parameters	267
Response Elements	268
Errors	268
Examples	269
DescribeSubnets	270
Request Parameters	270
Response Elements	270
Errors	271
Examples	271
DescribeTags	273
Request Parameters	273
Response Elements	273
Errors	274
Examples	274
DescribeVolumeAttribute	279
Request Parameters	279
Response Elements	279
Errors	279
Examples	280
DescribeVolumeStatus	281

Request Parameters	281
Response Elements	282
Errors	283
Examples	283
DescribeVolumes	285
Request Parameters	285
Response Elements	286
Errors	286
Examples	286
DescribeVpcAttribute	288
Request Parameters	288
Response Elements	288
Errors	288
Examples	289
DescribeVpcClassicLink	290
Request Parameters	290
Response Elements	290
Errors	290
Examples	291
DescribeVpcPeeringConnections	292
Request Parameters	292
Response Elements	292
Errors	293
Examples	293
DescribeVpcs	295
Request Parameters	295
Response Elements	295
Errors	296
Examples	296
DescribeVpnConnections	297
Request Parameters	297
Response Elements	297
Errors	298
Examples	298
DescribeVpnGateways	300
Request Parameters	300
Response Elements	300
Errors	301
Examples	301
DetachClassicLinkVpc	303
Request Parameters	303
Response Elements	303
Errors	303
Examples	303
DetachInternetGateway	305
Request Parameters	305
Response Elements	305
Errors	305
Examples	305
DetachNetworkInterface	307
Request Parameters	307
Response Elements	307
Errors	307
Examples	307
DetachVolume	309
Request Parameters	309
Response Elements	309
Errors	310

Examples	310
DetachVpnGateway	311
Request Parameters	311
Response Elements	311
Errors	311
Examples	311
DisableVgwRoutePropagation	313
Request Parameters	313
Response Elements	313
Errors	313
Examples	313
DisableVpcClassicLink	315
Request Parameters	315
Response Elements	315
Errors	315
Examples	315
DisassociateAddress	317
Request Parameters	317
Response Elements	317
Errors	317
Examples	318
DisassociateRouteTable	319
Request Parameters	319
Response Elements	319
Errors	319
Examples	319
EnableVgwRoutePropagation	321
Request Parameters	321
Response Elements	321
Errors	321
Examples	321
EnableVolumeIO	323
Request Parameters	323
Response Elements	323
Errors	323
Examples	323
EnableVpcClassicLink	325
Request Parameters	325
Response Elements	325
Errors	325
Examples	325
GetConsoleOutput	327
Request Parameters	327
Response Elements	327
Errors	328
Examples	328
GetPasswordData	329
Request Parameters	329
Response Elements	329
Errors	329
Examples	330
ImportInstance	331
Request Parameters	331
Response Elements	331
Errors	331
Examples	332
ImportKeyPair	334
Request Parameters	334

Response Elements	334
Errors	334
Examples	335
ImportVolume	336
Request Parameters	336
Response Elements	336
Errors	336
Examples	337
ModifyImageAttribute	338
Request Parameters	338
Response Elements	339
Errors	339
Examples	339
ModifyInstanceAttribute	341
Request Parameters	341
Response Elements	343
Errors	343
Examples	343
ModifyNetworkInterfaceAttribute	345
Request Parameters	345
Response Elements	345
Errors	346
Examples	346
ModifyReservedInstances	347
Request Parameters	347
Response Elements	347
Errors	347
Examples	348
ModifySnapshotAttribute	349
Request Parameters	349
Response Elements	350
Errors	350
Examples	350
ModifySubnetAttribute	352
Request Parameters	352
Response Elements	352
Errors	352
Examples	352
ModifyVolumeAttribute	354
Request Parameters	354
Response Elements	354
Errors	354
Examples	355
ModifyVpcAttribute	356
Request Parameters	356
Response Elements	356
Errors	356
Examples	357
MonitorInstances	358
Request Parameters	358
Response Elements	358
Errors	358
Examples	358
PurchaseReservedInstancesOffering	360
Request Parameters	360
Response Elements	360
Errors	361
Examples	361

RebootInstances	362
Request Parameters	362
Response Elements	362
Errors	362
Examples	362
RegisterImage	364
Request Parameters	364
Response Elements	365
Errors	366
Examples	366
RejectVpcPeeringConnection	368
Request Parameters	368
Response Elements	368
Errors	368
Examples	368
ReleaseAddress	370
Request Parameters	370
Response Elements	370
Errors	370
Examples	371
ReplaceNetworkAclAssociation	372
Request Parameters	372
Response Elements	372
Errors	372
Examples	372
ReplaceNetworkAclEntry	374
Request Parameters	374
Response Elements	375
Errors	375
Examples	375
ReplaceRoute	377
Request Parameters	377
Response Elements	378
Errors	378
Examples	378
ReplaceRouteTableAssociation	379
Request Parameters	379
Response Elements	379
Errors	379
Examples	380
ReportInstanceStatus	381
Request Parameters	381
Response Elements	382
Errors	382
Examples	382
RequestSpotInstances	384
Request Parameters	384
Response Elements	385
Errors	385
Examples	386
ResetImageAttribute	388
Request Parameters	388
Response Elements	388
Errors	388
Examples	388
ResetInstanceAttribute	390
Request Parameters	390
Response Elements	390

Errors	390
Examples	391
ResetNetworkInterfaceAttribute	392
Request Parameters	392
Response Elements	392
Errors	392
Examples	392
ResetSnapshotAttribute	394
Request Parameters	394
Response Elements	394
Errors	394
Examples	395
RevokeSecurityGroupEgress	396
Request Parameters	396
Response Elements	397
Errors	397
Examples	397
RevokeSecurityGroupIngress	399
Request Parameters	399
Response Elements	400
Errors	400
Examples	400
RunInstances	402
Request Parameters	402
Response Elements	406
Errors	406
Examples	406
StartInstances	409
Request Parameters	409
Response Elements	409
Errors	410
Examples	410
StopInstances	411
Request Parameters	411
Response Elements	411
Errors	412
Examples	412
TerminateInstances	413
Request Parameters	413
Response Elements	413
Errors	413
Examples	414
UnassignPrivateIpAddresses	415
Request Parameters	415
Response Elements	415
Errors	415
Examples	415
UnmonitorInstances	417
Request Parameters	417
Response Elements	417
Errors	417
Examples	417
Data Types	419
AccountAttribute	422
Description	422
Contents	422
AccountAttributeValue	422
Description	422

Contents	423
Address	423
Description	423
Contents	423
AttributeBooleanValue	424
Description	424
Contents	424
AttributeValue	424
Description	424
Contents	424
AvailabilityZone	424
Description	424
Contents	425
AvailabilityZoneMessage	425
Description	425
Contents	425
BlockDeviceMapping	425
Description	425
Contents	426
BundleTask	426
Description	426
Contents	426
BundleTaskError	427
Description	427
Contents	427
CancelledSpotInstanceRequest	428
Description	428
Contents	428
ClassicLinkInstance	428
Description	428
Contents	428
ConversionTask	429
Description	429
Contents	429
CreateVolumePermission	430
Description	430
Contents	430
CreateVolumePermissionModifications	430
Description	430
Contents	430
CustomerGateway	431
Description	431
Contents	431
DhcpConfiguration	431
Description	431
Contents	432
DhcpOptions	432
Description	432
Contents	432
DiskImage	432
Description	432
Contents	433
DiskImageDescription	433
Description	433
Contents	433
DiskImageDetail	434
Description	434
Contents	434

DiskImageVolumeDescription	434
Description	434
Contents	434
EbsBlockDevice	435
Description	435
Contents	435
EbsInstanceBlockDevice	436
Description	436
Contents	436
EbsInstanceBlockDeviceSpecification	437
Description	437
Contents	437
ExportTask	437
Description	437
Contents	437
ExportToS3Task	438
Description	438
Contents	438
ExportToS3TaskSpecification	439
Description	439
Contents	439
Filter	439
Description	439
Contents	439
GroupIdentifier	440
Description	440
Contents	440
IamInstanceProfile	440
Description	440
Contents	440
IamInstanceProfileSpecification	440
Description	440
Contents	441
IcmpTypeCode	441
Description	441
Contents	441
Image	441
Description	441
Contents	441
ImageAttribute	444
Description	444
Contents	444
ImportInstanceLaunchSpecification	445
Description	445
Contents	445
ImportInstanceTaskDetails	447
Description	447
Contents	447
ImportInstanceVolumeDetailItem	447
Description	447
Contents	447
ImportVolumeTaskDetails	448
Description	448
Contents	448
Instance	449
Description	449
Contents	449
InstanceAttribute	453

Description	453
Contents	454
InstanceBlockDeviceMapping	455
Description	455
Contents	455
InstanceBlockDeviceMappingSpecification	456
Description	456
Contents	456
InstanceCount	456
Description	456
Contents	456
InstanceExportDetails	457
Description	457
Contents	457
InstanceMonitoring	457
Description	457
Contents	457
InstanceNetworkInterface	458
Description	458
Contents	458
InstanceNetworkInterfaceAssociation	459
Description	459
Contents	459
InstanceNetworkInterfaceAttachment	460
Description	460
Contents	460
InstanceNetworkInterfaceSpecification	461
Description	461
Contents	461
InstancePrivateIpAddress	462
Description	462
Contents	462
InstanceState	463
Description	463
Contents	463
InstanceStateChange	463
Description	463
Contents	463
InstanceStatus	464
Description	464
Contents	464
InstanceStatusDetails	465
Description	465
Contents	465
InstanceStatusEvent	465
Description	465
Contents	465
InstanceStatusSummary	466
Description	466
Contents	466
InternetGateway	466
Description	466
Contents	466
InternetGatewayAttachment	467
Description	467
Contents	467
IpPermission	467
Description	467

Contents	467
IpRange	468
Description	468
Contents	468
KeyPair	468
Description	468
Contents	469
KeyPairInfo	469
Description	469
Contents	469
LaunchPermission	469
Description	469
Contents	470
LaunchPermissionModifications	470
Description	470
Contents	470
LaunchSpecification	470
Description	470
Contents	470
Monitoring	472
Description	472
Contents	472
NetworkAcl	473
Description	473
Contents	473
NetworkAclAssociation	474
Description	474
Contents	474
NetworkAclEntry	474
Description	474
Contents	474
NetworkInterface	475
Description	475
Contents	475
NetworkInterfaceAssociation	477
Description	477
Contents	477
NetworkInterfaceAttachment	478
Description	478
Contents	478
NetworkInterfaceAttachmentChanges	479
Description	479
Contents	479
NetworkInterfacePrivateIpAddress	479
Description	479
Contents	479
Placement	480
Description	480
Contents	480
PlacementGroup	480
Description	480
Contents	481
PortRange	481
Description	481
Contents	481
PriceSchedule	481
Description	481
Contents	482

PriceScheduleSpecification	482
Description	482
Contents	482
PricingDetail	483
Description	483
Contents	483
PrivateIpAddressSpecification	483
Description	483
Contents	483
ProductCode	484
Description	484
Contents	484
PropagatingVgw	484
Description	484
Contents	484
RecurringCharge	484
Description	484
Contents	485
Region	485
Description	485
Contents	485
Reservation	485
Description	485
Contents	485
ReservedInstanceLimitPrice	486
Description	486
Contents	486
ReservedInstances	487
Description	487
Contents	487
ReservedInstancesConfiguration	489
Description	489
Contents	489
ReservedInstancesId	490
Description	490
Contents	490
ReservedInstancesListing	490
Description	490
Contents	490
ReservedInstancesModification	491
Description	491
Contents	491
ReservedInstancesModificationResult	492
Description	492
Contents	492
ReservedInstancesOffering	493
Description	493
Contents	493
Route	495
Description	495
Contents	495
RouteTable	496
Description	496
Contents	496
RouteTableAssociation	497
Description	497
Contents	497
RunInstancesMonitoringEnabled	497

Description	497
Contents	497
S3Storage	498
Description	498
Contents	498
SecurityGroup	498
Description	498
Contents	499
Snapshot	500
Description	500
Contents	500
SpotDatafeedSubscription	501
Description	501
Contents	501
SpotInstanceRequest	502
Description	502
Contents	502
SpotInstanceStateFault	504
Description	504
Contents	504
SpotInstanceState	504
Description	504
Contents	505
SpotPlacement	505
Description	505
Contents	505
SpotPrice	505
Description	505
Contents	506
StateReason	506
Description	506
Contents	507
Storage	507
Description	507
Contents	507
Subnet	507
Description	507
Contents	508
Tag	509
Description	509
Contents	509
TagDescription	509
Description	509
Contents	509
UserData	510
Description	510
Contents	510
UserIdGroupPair	510
Description	510
Contents	510
VgwTelemetry	511
Description	511
Contents	511
Volume	511
Description	511
Contents	512
VolumeAttachment	513
Description	513

Contents	513
VolumeDetail	514
Description	514
Contents	514
VolumeStatusAction	514
Description	514
Contents	514
VolumeStatusDetails	515
Description	515
Contents	515
VolumeStatusEvent	515
Description	515
Contents	516
VolumeStatusInfo	516
Description	516
Contents	516
VolumeStatusItem	517
Description	517
Contents	517
Vpc	517
Description	517
Contents	517
VpcAttachment	518
Description	518
Contents	518
VpcClassicLink	519
Description	519
Contents	519
VpcPeeringConnection	519
Description	519
Contents	519
VpcPeeringConnectionStateReason	520
Description	520
Contents	520
VpcPeeringConnectionVpcInfo	521
Description	521
Contents	521
VpnConnection	521
Description	521
Contents	521
VpnConnectionOptions	522
Description	522
Contents	523
VpnConnectionOptionsSpecification	523
Description	523
Contents	523
VpnGateway	523
Description	523
Contents	523
VpnStaticRoute	524
Description	524
Contents	524
Making API Requests	525
Required Knowledge	525
Available APIs for Amazon EC2	525
Query Requests	526
Structure of a GET Request	527
Endpoints	528

Query Parameters	528
Query API Authentication	529
Query Response Structures	529
Troubleshooting API Request Errors	530
Query API Request Rate	530
Eventual Consistency	531
Unauthorized Operation	532
Ensuring Idempotency	532
Idempotency Support	533
Example Idempotent Command	534
Example Idempotent Query	534
SOAP Requests	534
Logging API Calls	535
Amazon EC2 Information in CloudTrail	535
Understanding Amazon EC2 Log File Entries	535
Common Query Parameters	538
Common Query Parameters for Signature Version 2	538
Common Query Parameters for Signature Version 4	539
Permissions	541
Supported Resource-Level Permissions	542
Customer Gateways	542
DHCP Options Sets	542
Instances	542
Internet Gateways	546
Network ACLs	546
Route Tables	546
Security Groups	547
Volumes	548
VPCs	549
VPC Peering Connections	549
Unsupported Resource-Level Permissions	550
Error Codes	554
Common Client Errors	554
Client Errors For Specific Actions	556
Common Causes of Client Errors	570
Server Errors	571
Example Error Response	571
Eventual Consistency	572

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
Learn about using the Query API	Making API Requests (p. 525)
Get the list of API actions by function	List of Actions by Function (p. 2)
Get the alphabetical list of API actions	Actions (p. 8)
Get the alphabetical list of data types	Data Types (p. 419)
Get a list of common query parameters	Common Query Parameters (p. 538)
Get descriptions of the error codes	Common Client Errors (p. 554)

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 \(p. 534\)](#). We no longer publish the latest version of the Amazon EC2 WSDL, but you can download the last version that supports SOAP from the [Amazon EC2 Developer Resources](#) page.

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

Account Attributes

- [DescribeAccountAttributes](#) (p. 166)

AMIs

- [CopyImage](#) (p. 57)
- [CreateImage](#) (p. 66)
- [DeregisterImage](#) (p. 164)
- [DescribeImageAttribute](#) (p. 191)
- [DescribeImages](#) (p. 194)
- [ModifyImageAttribute](#) (p. 338)
- [RegisterImage](#) (p. 364)
- [ResetImageAttribute](#) (p. 388)

AWS Marketplace

- [ConfirmProductInstance](#) (p. 55)

Bundle Tasks

- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 44)
- [DescribeBundleTasks](#) (p. 175)

ClassicLink

- [AttachClassicLinkVpc](#) (p. 25)
- [DescribeClassicLinkInstances](#) (p. 178)
- [DescribeVpcClassicLink](#) (p. 290)
- [DetachClassicLinkVpc](#) (p. 303)
- [DisableVpcClassicLink](#) (p. 315)
- [EnableVpcClassicLink](#) (p. 325)

Customer Gateways (Amazon VPC)

- [CreateCustomerGateway](#) (p. 61)
- [DeleteCustomerGateway](#) (p. 122)
- [DescribeCustomerGateways](#) (p. 183)

DHCP Options (Amazon VPC)

- [AssociateDhcpOptions](#) (p. 21)
- [CreateDhcpOptions](#) (p. 63)
- [DeleteDhcpOptions](#) (p. 124)
- [DescribeDhcpOptions](#) (p. 186)

Elastic Block Store

- [AttachVolume](#) (p. 31)
- [CopySnapshot](#) (p. 59)
- [CreateSnapshot](#) (p. 98)
- [CreateVolume](#) (p. 106)
- [DeleteSnapshot](#) (p. 144)
- [DeleteVolume](#) (p. 152)
- [DescribeSnapshotAttribute](#) (p. 255)
- [DescribeSnapshots](#) (p. 257)
- [DescribeVolumeAttribute](#) (p. 279)
- [DescribeVolumes](#) (p. 285)
- [DescribeVolumeStatus](#) (p. 281)
- [DetachVolume](#) (p. 309)
- [EnableVolumeIO](#) (p. 323)
- [ModifySnapshotAttribute](#) (p. 349)
- [ModifyVolumeAttribute](#) (p. 354)
- [ResetSnapshotAttribute](#) (p. 394)

Elastic IP Addresses

- [AllocateAddress](#) (p. 14)
- [AssociateAddress](#) (p. 18)
- [DescribeAddresses](#) (p. 170)
- [DisassociateAddress](#) (p. 317)
- [ReleaseAddress](#) (p. 370)

Elastic Network Interfaces (Amazon VPC)

- [AssignPrivateIpAddresses](#) (p. 16)
- [AttachNetworkInterface](#) (p. 29)
- [CreateNetworkInterface](#) (p. 79)
- [DeleteNetworkInterface](#) (p. 134)
- [DescribeNetworkInterfaceAttribute](#) (p. 224)
- [DescribeNetworkInterfaces](#) (p. 226)

- [DetachNetworkInterface](#) (p. 307)
- [ModifyNetworkInterfaceAttribute](#) (p. 345)
- [ResetNetworkInterfaceAttribute](#) (p. 392)
- [UnassignPrivateIpAddresses](#) (p. 415)

Instances

- [DescribeInstanceAttribute](#) (p. 199)
- [DescribeInstances](#) (p. 208)
- [DescribeInstanceStatus](#) (p. 202)
- [GetConsoleOutput](#) (p. 327)
- [GetPasswordData](#) (p. 329)
- [ModifyInstanceAttribute](#) (p. 341)
- [MonitorInstances](#) (p. 358)
- [RebootInstances](#) (p. 362)
- [ReportInstanceStatus](#) (p. 381)
- [ResetInstanceAttribute](#) (p. 390)
- [RunInstances](#) (p. 402)
- [StartInstances](#) (p. 409)
- [StopInstances](#) (p. 411)
- [TerminateInstances](#) (p. 413)
- [UnmonitorInstances](#) (p. 417)

Internet Gateways (Amazon VPC)

- [AttachInternetGateway](#) (p. 27)
- [CreateInternetGateway](#) (p. 70)
- [DeleteInternetGateway](#) (p. 126)
- [DescribeInternetGateways](#) (p. 216)
- [DetachInternetGateway](#) (p. 305)

Key Pairs

- [CreateKeyPair](#) (p. 72)
- [DeleteKeyPair](#) (p. 128)
- [DescribeKeyPairs](#) (p. 218)
- [ImportKeyPair](#) (p. 334)

Network ACLs (Amazon VPC)

- [CreateNetworkAcl](#) (p. 74)
- [CreateNetworkAclEntry](#) (p. 76)
- [DeleteNetworkAcl](#) (p. 130)
- [DeleteNetworkAclEntry](#) (p. 132)
- [DescribeNetworkAcls](#) (p. 220)
- [ReplaceNetworkAclAssociation](#) (p. 372)
- [ReplaceNetworkAclEntry](#) (p. 374)

Placement Groups

- [CreatePlacementGroup](#) (p. 84)
- [DeletePlacementGroup](#) (p. 136)
- [DescribePlacementGroups](#) (p. 230)

Regions and Availability Zones

- [DescribeAvailabilityZones](#) (p. 173)
- [DescribeRegions](#) (p. 232)

Reserved Instances

- [CancelReservedInstancesListing](#) (p. 50)
- [CreateReservedInstancesListing](#) (p. 86)
- [DescribeReservedInstances](#) (p. 234)
- [DescribeReservedInstancesListings](#) (p. 237)
- [DescribeReservedInstancesModifications](#) (p. 240)
- [DescribeReservedInstancesOfferings](#) (p. 242)
- [ModifyReservedInstances](#) (p. 347)
- [PurchaseReservedInstancesOffering](#) (p. 360)

Route Tables (Amazon VPC)

- [AssociateRouteTable](#) (p. 23)
- [CreateRoute](#) (p. 90)
- [CreateRouteTable](#) (p. 93)
- [DeleteRoute](#) (p. 138)
- [DeleteRouteTable](#) (p. 140)
- [DescribeRouteTables](#) (p. 249)
- [DisableVgwRoutePropagation](#) (p. 313)
- [DisassociateRouteTable](#) (p. 319)
- [EnableVgwRoutePropagation](#) (p. 321)
- [ReplaceRoute](#) (p. 377)
- [ReplaceRouteTableAssociation](#) (p. 379)

Security Groups

- [AuthorizeSecurityGroupEgress](#) (p. 35) (EC2-VPC only)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [CreateSecurityGroup](#) (p. 95)
- [DeleteSecurityGroup](#) (p. 142)
- [DescribeSecurityGroups](#) (p. 252)
- [RevokeSecurityGroupEgress](#) (p. 396) (EC2-VPC only)
- [RevokeSecurityGroupIngress](#) (p. 399)

Spot Instances

- [CancelSpotInstanceRequests](#) (p. 53)
- [CreateSpotDatafeedSubscription](#) (p. 100)
- [DeleteSpotDatafeedSubscription](#) (p. 146)
- [DescribeSpotDatafeedSubscription](#) (p. 261)
- [DescribeSpotInstanceRequests](#) (p. 263)
- [DescribeSpotPriceHistory](#) (p. 267)
- [RequestSpotInstances](#) (p. 384)

Subnets (Amazon VPC)

- [CreateSubnet](#) (p. 102)
- [DeleteSubnet](#) (p. 147)
- [DescribeSubnets](#) (p. 270)
- [ModifySubnetAttribute](#) (p. 352)

Tags

- [CreateTags](#) (p. 104)
- [DeleteTags](#) (p. 149)
- [DescribeTags](#) (p. 273)

VM Import

- [CancelConversionTask](#) (p. 46)
- [DescribeConversionTasks](#) (p. 181)
- [ImportInstance](#) (p. 331)
- [ImportVolume](#) (p. 336)

VM Export

- [CancelExportTask](#) (p. 48)
- [CreateInstanceExportTask](#) (p. 68)
- [DescribeExportTasks](#) (p. 189)

VPCs (Amazon VPC)

- [CreateVpc](#) (p. 109)
- [DeleteVpc](#) (p. 154)
- [DescribeVpcAttribute](#) (p. 288)
- [DescribeVpcs](#) (p. 295)
- [ModifyVpcAttribute](#) (p. 356)

VPC Peering Connections (Amazon VPC)

- [AcceptVpcPeeringConnection](#) (p. 12)
- [CreateVpcPeeringConnection](#) (p. 112)
- [DeleteVpcPeeringConnection](#) (p. 156)

- [DescribeVpcPeeringConnections](#) (p. 292)
- [RejectVpcPeeringConnection](#) (p. 368)

VPN Connections (Amazon VPC)

- [CreateVpnConnection](#) (p. 115)
- [CreateVpnConnectionRoute](#) (p. 118)
- [DeleteVpnConnection](#) (p. 158)
- [DeleteVpnConnectionRoute](#) (p. 160)
- [DescribeVpnConnections](#) (p. 297)

Virtual Private Gateways (Amazon VPC)

- [AttachVpnGateway](#) (p. 33)
- [CreateVpnGateway](#) (p. 120)
- [DeleteVpnGateway](#) (p. 162)
- [DescribeVpnGateways](#) (p. 300)
- [DetachVpnGateway](#) (p. 311)

Actions

The following actions are supported:

- [AcceptVpcPeeringConnection](#) (p. 12)
- [AllocateAddress](#) (p. 14)
- [AssignPrivateIpAddresses](#) (p. 16)
- [AssociateAddress](#) (p. 18)
- [AssociateDhcpOptions](#) (p. 21)
- [AssociateRouteTable](#) (p. 23)
- [AttachClassicLinkVpc](#) (p. 25)
- [AttachInternetGateway](#) (p. 27)
- [AttachNetworkInterface](#) (p. 29)
- [AttachVolume](#) (p. 31)
- [AttachVpnGateway](#) (p. 33)
- [AuthorizeSecurityGroupEgress](#) (p. 35)
- [AuthorizeSecurityGroupIngress](#) (p. 38)
- [BundleInstance](#) (p. 42)
- [CancelBundleTask](#) (p. 44)
- [CancelConversionTask](#) (p. 46)
- [CancelExportTask](#) (p. 48)
- [CancelReservedInstancesListing](#) (p. 50)
- [CancelSpotInstanceRequests](#) (p. 53)
- [ConfirmProductInstance](#) (p. 55)
- [CopyImage](#) (p. 57)
- [CopySnapshot](#) (p. 59)
- [CreateCustomerGateway](#) (p. 61)
- [CreateDhcpOptions](#) (p. 63)
- [CreateImage](#) (p. 66)
- [CreateInstanceExportTask](#) (p. 68)
- [CreateInternetGateway](#) (p. 70)
- [CreateKeyPair](#) (p. 72)
- [CreateNetworkAcl](#) (p. 74)
- [CreateNetworkAclEntry](#) (p. 76)

- [CreateNetworkInterface](#) (p. 79)
- [CreatePlacementGroup](#) (p. 84)
- [CreateReservedInstancesListing](#) (p. 86)
- [CreateRoute](#) (p. 90)
- [CreateRouteTable](#) (p. 93)
- [CreateSecurityGroup](#) (p. 95)
- [CreateSnapshot](#) (p. 98)
- [CreateSpotDatafeedSubscription](#) (p. 100)
- [CreateSubnet](#) (p. 102)
- [CreateTags](#) (p. 104)
- [CreateVolume](#) (p. 106)
- [CreateVpc](#) (p. 109)
- [CreateVpcPeeringConnection](#) (p. 112)
- [CreateVpnConnection](#) (p. 115)
- [CreateVpnConnectionRoute](#) (p. 118)
- [CreateVpnGateway](#) (p. 120)
- [DeleteCustomerGateway](#) (p. 122)
- [DeleteDhcpOptions](#) (p. 124)
- [DeleteInternetGateway](#) (p. 126)
- [DeleteKeyPair](#) (p. 128)
- [DeleteNetworkAcl](#) (p. 130)
- [DeleteNetworkAclEntry](#) (p. 132)
- [DeleteNetworkInterface](#) (p. 134)
- [DeletePlacementGroup](#) (p. 136)
- [DeleteRoute](#) (p. 138)
- [DeleteRouteTable](#) (p. 140)
- [DeleteSecurityGroup](#) (p. 142)
- [DeleteSnapshot](#) (p. 144)
- [DeleteSpotDatafeedSubscription](#) (p. 146)
- [DeleteSubnet](#) (p. 147)
- [DeleteTags](#) (p. 149)
- [DeleteVolume](#) (p. 152)
- [DeleteVpc](#) (p. 154)
- [DeleteVpcPeeringConnection](#) (p. 156)
- [DeleteVpnConnection](#) (p. 158)
- [DeleteVpnConnectionRoute](#) (p. 160)
- [DeleteVpnGateway](#) (p. 162)
- [DeregisterImage](#) (p. 164)
- [DescribeAccountAttributes](#) (p. 166)
- [DescribeAddresses](#) (p. 170)
- [DescribeAvailabilityZones](#) (p. 173)
- [DescribeBundleTasks](#) (p. 175)
- [DescribeClassicLinkInstances](#) (p. 178)
- [DescribeConversionTasks](#) (p. 181)
- [DescribeCustomerGateways](#) (p. 183)
- [DescribeDhcpOptions](#) (p. 186)

- [DescribeExportTasks](#) (p. 189)
- [DescribeImageAttribute](#) (p. 191)
- [DescribeImages](#) (p. 194)
- [DescribeInstanceAttribute](#) (p. 199)
- [DescribeInstanceState](#) (p. 202)
- [DescribeInstances](#) (p. 208)
- [DescribeInternetGateways](#) (p. 216)
- [DescribeKeyPairs](#) (p. 218)
- [DescribeNetworkAcls](#) (p. 220)
- [DescribeNetworkInterfaceAttribute](#) (p. 224)
- [DescribeNetworkInterfaces](#) (p. 226)
- [DescribePlacementGroups](#) (p. 230)
- [DescribeRegions](#) (p. 232)
- [DescribeReservedInstances](#) (p. 234)
- [DescribeReservedInstancesListings](#) (p. 237)
- [DescribeReservedInstancesModifications](#) (p. 240)
- [DescribeReservedInstancesOfferings](#) (p. 242)
- [DescribeRouteTables](#) (p. 249)
- [DescribeSecurityGroups](#) (p. 252)
- [DescribeSnapshotAttribute](#) (p. 255)
- [DescribeSnapshots](#) (p. 257)
- [DescribeSpotDatafeedSubscription](#) (p. 261)
- [DescribeSpotInstanceRequests](#) (p. 263)
- [DescribeSpotPriceHistory](#) (p. 267)
- [DescribeSubnets](#) (p. 270)
- [DescribeTags](#) (p. 273)
- [DescribeVolumeAttribute](#) (p. 279)
- [DescribeVolumeStatus](#) (p. 281)
- [DescribeVolumes](#) (p. 285)
- [DescribeVpcAttribute](#) (p. 288)
- [DescribeVpcClassicLink](#) (p. 290)
- [DescribeVpcPeeringConnections](#) (p. 292)
- [DescribeVpcs](#) (p. 295)
- [DescribeVpnConnections](#) (p. 297)
- [DescribeVpnGateways](#) (p. 300)
- [DetachClassicLinkVpc](#) (p. 303)
- [DetachInternetGateway](#) (p. 305)
- [DetachNetworkInterface](#) (p. 307)
- [DetachVolume](#) (p. 309)
- [DetachVpnGateway](#) (p. 311)
- [DisableVgwRoutePropagation](#) (p. 313)
- [DisableVpcClassicLink](#) (p. 315)
- [DisassociateAddress](#) (p. 317)
- [DisassociateRouteTable](#) (p. 319)
- [EnableVgwRoutePropagation](#) (p. 321)
- [EnableVolumeIO](#) (p. 323)

- [EnableVpcClassicLink](#) (p. 325)
- [GetConsoleOutput](#) (p. 327)
- [GetPasswordData](#) (p. 329)
- [ImportInstance](#) (p. 331)
- [ImportKeyPair](#) (p. 334)
- [ImportVolume](#) (p. 336)
- [ModifyImageAttribute](#) (p. 338)
- [ModifyInstanceAttribute](#) (p. 341)
- [ModifyNetworkInterfaceAttribute](#) (p. 345)
- [ModifyReservedInstances](#) (p. 347)
- [ModifySnapshotAttribute](#) (p. 349)
- [ModifySubnetAttribute](#) (p. 352)
- [ModifyVolumeAttribute](#) (p. 354)
- [ModifyVpcAttribute](#) (p. 356)
- [MonitorInstances](#) (p. 358)
- [PurchaseReservedInstancesOffering](#) (p. 360)
- [RebootInstances](#) (p. 362)
- [RegisterImage](#) (p. 364)
- [RejectVpcPeeringConnection](#) (p. 368)
- [ReleaseAddress](#) (p. 370)
- [ReplaceNetworkAclAssociation](#) (p. 372)
- [ReplaceNetworkAclEntry](#) (p. 374)
- [ReplaceRoute](#) (p. 377)
- [ReplaceRouteTableAssociation](#) (p. 379)
- [ReportInstanceStatus](#) (p. 381)
- [RequestSpotInstances](#) (p. 384)
- [ResetImageAttribute](#) (p. 388)
- [ResetInstanceAttribute](#) (p. 390)
- [ResetNetworkInterfaceAttribute](#) (p. 392)
- [ResetSnapshotAttribute](#) (p. 394)
- [RevokeSecurityGroupEgress](#) (p. 396)
- [RevokeSecurityGroupIngress](#) (p. 399)
- [RunInstances](#) (p. 402)
- [StartInstances](#) (p. 409)
- [StopInstances](#) (p. 411)
- [TerminateInstances](#) (p. 413)
- [UnassignPrivateIpAddresses](#) (p. 415)
- [UnmonitorInstances](#) (p. 417)

AcceptVpcPeeringConnection

Accept 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` 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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpcPeeringConnection

Information about the VPC peering connection.

Type: [VpcPeeringConnection \(p. 519\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example accepts the specified VPC peering connection request.

Sample Request

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

Sample Response

```
<AcceptVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

AllocateAddress

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 Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Domain

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

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

Type: String

Valid Values: `vpc` | `standard`

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

allocationId

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

Type: String

domain

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

Type: String

publicIp

The Elastic IP address.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example for EC2-Classic

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

Sample Request

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

Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>192.0.2.1</publicIp>
  <domain>standard</domain>
</AllocateAddressResponse>
```

Example for EC2-VPC

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

Sample Request

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

Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>198.51.100.1</publicIp>
  <domain>vpc</domain>
  <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

AssignPrivateIpAddresses

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 information about instance types, see [Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Elastic IP addresses, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

AssignPrivateIpAddresses is available only in EC2-VPC.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

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

Required: No

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

PrivateIpAddress.N

One or more IP addresses to be assigned as a secondary private IP address to the network interface. You can't specify this parameter when also specifying a number of secondary IP addresses.

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

Type: String list

Required: No

SecondaryPrivateIpAddressCount

The number of secondary IP addresses to assign to the network interface. You can't specify this parameter when also specifying private IP addresses.

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

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

Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.1=10.0.2.1
&PrivateIpAddress.2=10.0.2.11
&AUTHPARAMS
```

Sample Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

Example 2

This example 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.

Sample Request

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

Sample Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

AssociateAddress

Associates an Elastic IP address with an instance or a network interface.

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 Elastic Compute Cloud User Guide*.

[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 allow reassociation.

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 \(p. 538\)](#).

AllocationId

[EC2-VPC] The allocation ID. This is required for EC2-VPC.

Type: String

Required: No

InstanceId

The ID of the instance. This is required for EC2-Classic. For EC2-VPC, you can specify either the instance ID or the network interface ID, but not both. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Required: Yes

PublicIp

The Elastic IP address. This is required for EC2-Classic.

Type: String

Required: Yes

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.

Default: `false`

Type: Boolean

Required: No

DryRun

Type: Boolean

Required: No

NetworkInterfaceId

[EC2-VPC] The ID of the network interface. If the instance has more than one network interface, you must specify a network interface ID.

Type: String

Required: No

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

Required: No

Response Elements

The following elements are returned.

associationId

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

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example for EC2-Classic

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

Sample Request

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

Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</AssociateAddressResponse>
```

Example for EC2-VPC

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.

Sample Request

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

Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
  <associationId>eipassoc-fc5ca095</associationId>  
</AssociateAddressResponse>
```

AssociateDhcpOptions

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DhcpOptionsId

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

Type: String

Required: Yes

VpcId

The ID of the VPC.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

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

Sample Request

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

Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

Example 2

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

Sample Request

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

Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

AssociateRouteTable

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

RouteTableId

The ID of the route table.

Type: String

Required: Yes

SubnetId

The ID of the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

associationId

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

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```


AttachClassicLinkVpc

Links an EC2-Classic instance to a ClassicLink-enabled VPC through one or more of the VPC's security groups. You cannot link an EC2-Classic instance to more than one VPC at a time. You can only link an instance that's in the `running` state. An instance is automatically unlinked from a VPC when it's stopped - you can link it to the VPC again when you restart it.

After you've linked an instance, you cannot change the VPC security groups that are associated with it. To change the security groups, you must first unlink the instance, and then link it again.

Linking your instance to a VPC is sometimes referred to as *attaching* your instance.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

SecurityGroupIds

The ID of one or more of the VPC's security groups. You cannot specify security groups from a different VPC.

Type: String list

Required: Yes

InstanceId

The ID of an EC2-Classic instance to link to the ClassicLink-enabled VPC.

Type: String

Required: Yes

VpcId

The ID of a ClassicLink-enabled VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example links instance i-1a2b3c4d to VPC vpc-88888888 through the VPC's security group sg-12312312.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1a2b3c4d
&GroupId.1=sg-12312312
&AUTHPARAMS
```

Sample Response

```
<AttachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachClassicLinkVpcResponse>
```

Example

This example links instance i-1a2b3c4d to VPC vpc-88888888 through the VPC's security groups sg-12312312 and sg-44455566.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1a2b3c4d
&GroupId.1=sg-12312312
&GroupId.2=sg-44455566
&AUTHPARAMS
```

AttachInternetGateway

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 Virtual Private Cloud User Guide](#).

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

InternetGatewayId

The ID of the Internet gateway.

Type: String

Required: Yes

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachInternetGatewayResponse>
```

AttachNetworkInterface

Attaches a network interface to an instance.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DeviceIndex

The index of the device for the network interface attachment.

Type: Integer

Required: Yes

DryRun

Type: Boolean

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachmentId

The ID of the network interface attachment.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

AttachVolume

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 may only be attached to instances that support Amazon EBS encryption. For more information, see [Amazon EBS Encryption](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

For a list of supported device names, see [Attaching an Amazon EBS 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 Elastic Compute Cloud User Guide for Linux*.

If a volume has an AWS Marketplace product code:

- The volume can be attached only to 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](#).

For more information about Amazon EBS volumes, see [Attaching Amazon EBS Volumes](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Device

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

Type: String

Required: Yes

InstanceId

The ID of the instance.

Type: String

Required: Yes

VolumeId

The ID of the Amazon EBS volume. The volume and instance must be within the same Availability Zone.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

attachment

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

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

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.

Sample Request

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

Sample Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```


AttachVpnGateway

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

VpcId

The ID of the VPC.

Type: String

Required: Yes

VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

attachment

Information about the attachment.

Type: [VpcAttachment \(p. 518\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>attaching</state>
  </attachment>
</AttachVpnGatewayResponse>
```

AuthorizeSecurityGroupEgress

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 Virtual Private Cloud 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 \(p. 538\)](#).

CidrIp

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

Type: String

Required: No

DryRun

Type: Boolean

Required: No

FromPort

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

Type: Integer

Required: No

GroupId

The ID of the security group.

Type: String

Required: Yes

IpPermissions.N

A set of IP permissions. You can't specify a destination security group and a CIDR IP address range.

Type: [IpPermission \(p. 467\)](#) list

Required: No

IpProtocol

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see [Protocol Numbers](#)). Use -1 to specify all.

Type: String

Required: No

SourceSecurityGroupName

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

Type: String

Required: No

SourceSecurityGroupOwnerId

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

Type: String

Required: No

ToPort

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

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

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.

Sample Request

```
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
```

Sample Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

Example 2

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

Sample Request

```
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
```

Sample Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

AuthorizeSecurityGroupIngress

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.

[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 \(p. 538\)](#).

CidrIp

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

Type: String

Required: No

FromPort

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

Type: Integer

Required: No

GroupId

The ID of the security group. Required for a nondefault VPC.

Type: String

Required: No

GroupName

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

Type: String

Required: No

IpPermissions.N

A set of IP permissions. Can be used to specify multiple rules in a single command.

Type: [IpPermission \(p. 467\)](#) list

Required: No

IpProtocol

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see [Protocol Numbers](#)). (VPC only) Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName

[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

Required: No

SourceSecurityGroupOwnerId

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

Type: String

Required: No

ToPort

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

Type: Integer

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

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.

Sample Request

```
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 2

This example request grants TCP port 80 access from the source group for EC2-Classic named OtherAccountGroup (in AWS account 123456789012) to the security group for EC2-Classic named webserv.

Sample Request

```
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=123456789012
&AUTHPARAMS
```

Example 3

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 123456789012.

Sample Request

```
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=123456789012
&AUTHPARAMS
```


Example 4

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.

Sample Request

```
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=<i>your-local-system's-public-ip-ad  
dress</i>/32  
&AUTHPARAMS
```

Example 5

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.

Sample Request

```
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=<i>your-local-system's-public-ip-ad  
dress</i>/32
```

BundleInstance

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 is not applicable for Linux/Unix instances or Windows instances that are backed by Amazon EBS.

For more information, see [Creating an Instance Store-Backed Windows AMI](#).

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceId

The ID of the instance to bundle.

Type: String

Default: None

Required: Yes

Type: String

Required: Yes

Storage

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: [Storage \(p. 507\)](#)

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

bundleInstanceTask

Information about the bundle task.

Type: [BundleTask \(p. 426\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example request bundles the specified instance. Before you specify a value for your access key ID, review and follow the guidance in [Best Practices for Managing AWS Access Keys](#).

Sample Request

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MD
laIiwuY29uZGl0aW9ucyI6IjE7ImJlY2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgI
iRrZXkiLCAibXktbmV3LWltYWdlIi10seyJhY2wiOiAiZWMyLWJlbnRsZS1yZWFKIn1dfEXAMPLE
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3nlGNEXAMPLE
&AUTHPARAMS
```

Sample Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CancelBundleTask

Cancel 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 \(p. 538\)](#).

BundleId

The ID of the bundle task.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

bundleInstanceTask

The bundle task.

Type: [BundleTask \(p. 426\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request cancels the specified bundle task.

Sample Request

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

Sample Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CancelConversionTask

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 [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ConversionTaskId

The ID of the conversion task.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

ReasonMessage

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```

CancelExportTask

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 \(p. 538\)](#).

ExportTaskId

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

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```



```
<return>true</return>  
</CancelExportTask>
```

CancelReservedInstancesListing

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

For more information, see [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ReservedInstancesListingId

The ID of the Reserved Instance listing.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservedInstancesListingsSet

The Reserved Instance listing.

Type: [ReservedInstancesListing \(p. 490\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request cancels a Reserved Instance listing in the Reserved Instance Marketplace. The response shows that the status is cancelled.

Sample Request

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

Sample Response

```
<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>
          <active>false</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

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

CancelSpotInstanceRequests

Cancels one or more Spot Instance requests. Spot Instances are instances that Amazon EC2 starts on your behalf when the bid 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, see [Spot Instance Requests](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

SpotInstanceRequestId.N

One or more Spot Instance request IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

spotInstanceRequestSet

One or more Spot Instance requests.

Type: [CancelledSpotInstanceRequest \(p. 428\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example cancels the specified Spot Instance request.

Sample Request

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

Sample Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

ConfirmProductInstance

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 \(p. 538\)](#).

InstanceId

The ID of the instance.

Type: String

Required: Yes

ProductCode

The product code. This must be a product code that you own.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

ownerId

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

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```


CopyImage

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. AMIs that use encrypted Amazon EBS snapshots cannot be copied with this method.

For more information, see [Copying AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ClientToken

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

Type: String

Required: No

Description

A description for the new AMI in the destination region.

Type: String

Required: No

Name

The name of the new AMI in the destination region.

Type: String

Required: Yes

SourceImageId

The ID of the AMI to copy.

Type: String

Required: Yes

SourceRegion

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

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

imageId

The ID of the new AMI.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

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

Sample Request

```
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
```

Sample Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

CopySnapshot

Copies a point-in-time snapshot of an Amazon EBS volume and stores it in Amazon S3. You can copy the snapshot within the same region or from one region to another. You can use the snapshot to create Amazon EBS volumes or Amazon Machine Images (AMIs). The snapshot is copied to the regional endpoint that you send the HTTP request to.

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

Note

Copying snapshots that were encrypted with non-default AWS Key Management Service (KMS) master keys is not supported at this time.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Description

A description for the new Amazon EBS snapshot.

Type: String

Required: No

DestinationRegion

The destination region to use in the `PresignedUrl` parameter of a snapshot copy operation. This parameter is only valid for specifying the destination region in a `PresignedUrl` parameter, where it is required.

Note

CopySnapshot sends the snapshot copy to the regional endpoint that you send the HTTP request to, such as `ec2.us-east-1.amazonaws.com` (in the AWS CLI, this is specified with the `--region` parameter or the default region in your AWS configuration file).

Type: String

Required: No

PresignedUrl

The pre-signed URL that facilitates copying an encrypted snapshot. This parameter is only required when copying an encrypted snapshot with the Amazon EC2 Query API; it is available as an optional parameter in all other cases. 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

Required: No

SourceRegion

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

Type: String

Required: Yes

SourceSnapshotId

The ID of the Amazon EBS snapshot to copy.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

snapshotId

The ID of the new snapshot.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>
```

CreateCustomerGateway

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-1 region, and 9059, which is reserved in the eu-west-1 region.

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

Important

You cannot create more than one customer gateway with the same VPN type, IP address, and BGP ASN parameter values. If you run an identical request more than one time, the first request creates the customer gateway, and subsequent requests return information about the existing customer gateway. The subsequent requests do not create new customer gateway resources.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

BgpAsn

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

Default: 65000

Type: Integer

Required: Yes

IpAddress

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

Type: String

Required: Yes

Type

The type of VPN connection that this customer gateway supports (`ipsec.1`).

Type: String

Valid Values: `ipsec.1`

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

customerGateway

Information about the customer gateway.

Type: [CustomerGateway](#) (p. 431)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

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

Sample Request

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

Sample Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateDhcpOptions

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](#).

- `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, specify the IP addresses in a single parameter, separated by commas.
- `domain-name` - If you're using `AmazonProvidedDNS` in `us-east-1`, specify `ec2.internal`. If you're using `AmazonProvidedDNS` in another region, specify `region.compute.internal` (for example, `ap-northeast-1.compute.internal`). Otherwise, specify a domain name (for example, `MyCompany.com`). **Important:** Some Linux operating systems accept multiple domain names separated by spaces. However, Windows and other Linux operating systems treat the value as a single domain, which results in unexpected behavior. If your DHCP options set is associated with a VPC that has instances with multiple operating systems, specify only one domain name.
- `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 [RFC 2132](#).

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 `AmazonProvidedDNS` or to a domain name server of your choice. For more information about DHCP options, see [DHCP Options Sets](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DhcpConfiguration.N

A DHCP configuration option.

Type: [DhcpConfiguration \(p. 431\)](#) list

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

dhcpOptions

A set of DHCP options.

Type: [DhcpOptions \(p. 432\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example 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.

Sample Request

```
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
```

Sample Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
```



```
<tagSet />  
</dhcpOptions>  
</CreateDhcpOptionsResponse>
```

CreateImage

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

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 Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

BlockDeviceMapping.N

Information about one or more block device mappings.

Type: [BlockDeviceMapping \(p. 425\)](#) list

Required: No

Description

A description for the new image.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

Name

A name for the new image.

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

Type: String

Required: Yes

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

Required: No

Response Elements

The following elements are returned.

imageId

The ID of the new AMI.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example request creates an AMI from the specified instance.

Sample Request

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

Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

CreateInstanceExportTask

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 Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Description

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

Type: String

Required: No

ExportToS3

Type: [ExportToS3TaskSpecification \(p. 439\)](#)

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

TargetEnvironment

The target virtualization environment.

Type: String

Valid Values: `citrix` | `vmware` | `microsoft`

Required: No

Response Elements

The following elements are returned.

exportTask

Type: [ExportTask \(p. 437\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

```
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
```

Sample Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateInternetGateway

Creates an Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using [AttachInternetGateway](#) (p. 27).

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

internetGateway

Information about the Internet gateway.

Type: [InternetGateway](#) (p. 466)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example creates an Internet gateway.

Sample Request

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

Sample Response

```
<CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

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

CreateKeyPair

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.

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. 334).

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

KeyName

A unique name for the key pair.

Constraints: Up to 255 ASCII characters

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

keyPair

Information about the key pair.

Type: [KeyPair](#) (p. 468)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

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

Sample Request

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

Sample Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 -----
MIICiTCcAfICcQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAGTAldBMRwDgYDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAStC0lBTsBDb25zb2x1MRIwEAYDVQQDEw1UZXR0Q21sYWMxH2Ad
BgkqhkiG9w0BCQEWEG5vb25lQGFTYXpvi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI1MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRwDgYD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAStC0lBTsBDb25z
b2x1MRIwEAYDVQQDEw1UZXR0Q21sYWMxH2AdBgkqhkiG9w0BCQEWEG5vb25lQGFT
YXpvi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rdHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpe
Ibb3OhjZncvQAaRHhdlQWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJIlJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----</keyMaterial>
</CreateKeyPairResponse>
```

Saving the File

Create a file named my-key-pair.pem and paste the entire key from the response into this file. 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.

Sample Request

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

CreateNetworkAcl

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

networkAcl

Information about the network ACL.

Type: [NetworkAcl \(p. 473\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example 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.

Sample Request

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

Sample Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateNetworkAclEntry

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.

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CidrBlock

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

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Egress

Indicates whether this is an egress rule (rule is applied to traffic leaving the subnet).

Type: Boolean

Required: Yes

Icmp

ICMP protocol: The ICMP type and code. Required if specifying ICMP for the protocol.

Type: [IcmpTypeCode \(p. 441\)](#)

Required: No

NetworkAclId

The ID of the network ACL.

Type: String

Required: Yes

PortRange

TCP or UDP protocols: The range of ports the rule applies to.

Type: [PortRange \(p. 481\)](#)

Required: No

Protocol

The protocol. A value of -1 means all protocols.

Type: String

Required: Yes

RuleAction

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow` | `deny`

Required: Yes

RuleNumber

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

Constraints: Positive integer from 1 to 32766

Type: Integer

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example 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.

Sample Request

```
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
```

Sample Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateNetworkAclEntryResponse>
```

CreateNetworkInterface

Creates a network interface in the specified subnet.

For more information about network interfaces, see [Elastic Network Interfaces](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Description

A description for the network interface.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

SecurityGroupIds

The IDs of one or more security groups.

Type: String list

Required: No

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. If you specify an IP address, you cannot indicate any IP addresses specified in `privateIpAddresses` as primary (only one IP address can be designated as primary).

Type: String

Required: No

PrivateIpAddresses

One or more private IP addresses.

Type: [PrivateIpAddressSpecification \(p. 483\)](#) list

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. You can't specify this option and specify more than one private IP address using `privateIpAddresses`.

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 Elastic Compute Cloud User Guide*.

Type: Integer

Required: No

SubnetId

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

Type: String

Required: Yes

Response Elements

The following elements are returned.

networkInterface

Information about the network interface.

Type: [NetworkInterface](#) (p. 475)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

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

Sample Request

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

Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
  </networkInterface>
</CreateNetworkInterfaceResponse>
```



```
<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 2

This example 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.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 3

This example 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.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.3.Primary=false
&PrivateIpAddresses.3.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreatePlacementGroup

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 Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

GroupName

A name for the placement group.

Constraints: Up to 255 ASCII characters

Type: String

Required: Yes

Strategy

The placement strategy.

Type: String

Valid Values: `cluster`

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example creates a placement group named XYZ-cluster.

Sample Request

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

Sample Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</CreatePlacementGroupResponse>
```

CreateReservedInstancesListing

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. To get a list of your Reserved Instances, you can use the [DescribeReservedInstances](#) (p. 234) operation.

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. To view the details of your Reserved Instance listing, you can use the [DescribeReservedInstancesListings](#) (p. 237) operation.

For more information, see [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

ClientToken

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see [Ensuring Idempotency](#).

Type: String

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

Required: Yes

PriceSchedules.N

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

Type: [PriceScheduleSpecification](#) (p. 482) list

Required: Yes

ReservedInstancesId

The ID of the active Reserved Instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservedInstancesListingsSet

Information about the Reserved Instances listing.

Type: [ReservedInstancesListing](#) (p. 490) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example creates a Reserved Instance Marketplace listing from the specified Reserved Instance, 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.

Sample Request

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

Sample 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>
  <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>
  </item>
</priceSchedules>
```



```
        <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>
```

CreateRoute

Creates a route in a route table within a VPC.

You must specify one of the following targets: Internet gateway or virtual private gateway, NAT instance, VPC peering connection, or network interface.

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DestinationCidrBlock

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

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

GatewayId

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

Type: String

Required: No

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

Required: No

NetworkInterfaceId

The ID of a network interface.

Type: String

Required: No

RouteTableId

The ID of the route table for the route.

Type: String

Required: Yes

VpcPeeringConnectionId

The ID of a VPC peering connection.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example 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`.

Sample Request

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

Example 2

This example 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`.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
```

```
&DestinationCidrBlock=0.0.0.0/0  
&InstanceId=i-1a2b3c4d  
&AUTHPARAMS
```

Example 3

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 other peered VPC in the VPC peering connection.

Sample Request

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

CreateRouteTable

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

routeTable

Information about the route table.

Type: [RouteTable \(p. 496\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example creates a route table for the VPC with the ID vpc-11ad4878. By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

Sample Request

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

Sample Response

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateSecurityGroup

Creates a security group.

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 Elastic Compute Cloud User Guide for Linux* and [Security Groups for Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Important

EC2-Classic: You can have up to 500 security groups. EC2-VPC: You can create up to 100 security groups per VPC.

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](#) (p. 38), [AuthorizeSecurityGroupEgress](#) (p. 35), [RevokeSecurityGroupIngress](#) (p. 399), and [RevokeSecurityGroupEgress](#) (p. 396).

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

GroupDescription

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

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 `._-:/()#,@[]+=&:{}!$*`

Type: String

Required: Yes

GroupName

The name of the security group.

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 `._-:/()#,@[]+=&:{}!$*`

Type: String

Required: Yes

VpcId

[EC2-VPC] The ID of the VPC. Required for EC2-VPC.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

groupId

The ID of the security group.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example for EC2-Classic

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

Sample Request

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

Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

Example for EC2-VPC

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

Sample Request

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

Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-0a42d66a</groupId>
</CreateSecurityGroupResponse>
```

CreateSnapshot

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

When a snapshot is created, any AWS Marketplace product codes that are associated with the source volume are 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 may exclude any data that has been cached by any applications or the operating system. If you can pause any file systems on the volume long enough to take a snapshot, your snapshot should be complete. However, if you cannot 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 may 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 Elastic Block Store](#) and [Amazon EBS Encryption](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Description

A description for the snapshot.

Type: String

Required: No

VolumeId

The ID of the Amazon EBS volume.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

snapshot

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

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

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

Sample Request

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

Sample Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
```

CreateSpotDatafeedSubscription

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Bucket

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

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Prefix

A prefix for the data feed file names.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

spotDatafeedSubscription

The Spot Instance data feed subscription.

Type: [SpotDatafeedSubscription \(p. 501\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example creates a Spot Instance data feed for the account.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=my-s3-bucket
&AUTHPARAMS
```

Sample Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
    <bucket>my-s3-bucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

CreateSubnet

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.

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 subnets, see [Your VPC and Subnets](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AvailabilityZone

The Availability Zone for the subnet.

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

Type: String

Required: No

CidrBlock

The network range for the subnet, in CIDR notation. For example, 10.0.0.0/24.

Type: String

Required: Yes

VpcId

The ID of the VPC.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

subnet

Information about the subnet.

Type: [Subnet \(p. 507\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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

Sample Request

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

Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateTags

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 Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

ResourceId.N

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

Type: String list

Required: Yes

Tag.N

One or more tags. The `value` parameter is required, but 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: [Tag \(p. 509\)](#) list

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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).

Sample Request

```
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
```

Sample Response

```
<CreateTagsResponse
xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>
```

CreateVolume

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. For more information, see [Amazon EBS Encryption](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

For more information, see [Creating or Restoring an Amazon EBS Volume](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AvailabilityZone

The Availability Zone in which to create the volume. Use [DescribeAvailabilityZones \(p. 173\)](#) to list the Availability Zones that are currently available to you.

Type: String

Required: Yes

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 Elastic Compute Cloud User Guide for Linux*.

Type: Boolean

Required: No

Iops

Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume, with a maximum ratio of 30 IOPS/GiB.

Constraint: Range is 100 to 20000 for Provisioned IOPS (SSD) volumes

Type: Integer

Required: No

KmsKeyId

The full ARN of the AWS Key Management Service (KMS) master key to use when creating the encrypted volume. This parameter is only required if you want to use a non-default master key; if this parameter is not specified, the default master key is used. The ARN contains the `arn:aws:kms` namespace, followed by the region of the master key, the AWS account ID of the master key owner, the `key` namespace, and then the master key ID. For example, `arn:aws:kms:us-east-1:012345678910:key/abcd1234-a123-456a-a12b-a123b4cd56ef`.

Type: String

Required: No

Size

The size of the volume, in GiBs.

Constraints: 1-1024 for `standard` volumes, 1-16384 for `gp2` volumes, and 4-16384 for `io1` volumes. If you specify a snapshot, the volume size must be equal to or larger than the snapshot size.

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

Type: Integer

Required: No

SnapshotId

The snapshot from which to create the volume.

Type: String

Required: No

VolumeType

The volume type. This can be `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, or `standard` for Magnetic volumes.

Default: `standard`

Type: String

Valid Values: `standard` | `io1` | `gp2`

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

volume

Type: [Volume](#) (p. 511)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

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

Sample Request

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

Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateVpc

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 Virtual Private Cloud 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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CidrBlock

The network range for the VPC, in CIDR notation. For example, 10.0.0.0/16.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

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 run on single-tenant hardware.

Default: `default`

Type: String

Valid Values: `default` | `dedicated`

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpc

Information about the VPC.

Type: [Vpc \(p. 517\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

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

Sample Request

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

Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

This example creates a VPC with the dedicated tenancy option.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.32.0.0/16
&InstanceTenancy=dedicated
&AUTHPARAMS
```

Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

```
</vpc>  
</CreateVpcResponse>
```

CreateVpcPeeringConnection

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`.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

PeerOwnerId

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

Default: Your AWS account ID

Type: String

Required: No

PeerVpcId

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

Type: String

Required: No

VpcId

The ID of the requester VPC.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpcPeeringConnection

Information about the VPC peering connection.

Type: [VpcPeeringConnection \(p. 519\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

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

Sample Request

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

Sample Response

```
<CreateVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

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

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
```

```
&PeerVpcId=vpc-11122233  
&AUTHPARAMS
```

CreateVpnConnection

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.

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CustomerGatewayId

The ID of the customer gateway.

Type: String

Required: Yes

Type

The type of VPN connection (`ipsec.1`).

Type: String

Required: Yes

VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Options

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`.

Default: `false`

Type: [VpnConnectionOptionsSpecification \(p. 523\)](#)

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpnConnection

Information about the VPN connection.

Type: [VpnConnection](#) (p. 521)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example 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 Virtual Private Cloud Network Administrator Guide.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

Sample Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
```

```
<tagSet/>
</vpnConnection>
</CreateVpnConnectionResponse>
```

Example 2

This example 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.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.StaticRoutesOnly=true
&AUTHPARAMS
```

Sample Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

CreateVpnConnectionRoute

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DestinationCidrBlock

The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

VpnConnectionId

The ID of the VPN connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example 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"`.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

Sample Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```

CreateVpnGateway

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AvailabilityZone

The Availability Zone for the virtual private gateway.

Type: String

Required: No

Type

The type of VPN connection this virtual private gateway supports.

Type: String

Valid Values: `ipsec.1`

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpnGateway

Information about the virtual private gateway.

Type: [VpnGateway \(p. 523\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example creates a virtual private gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
&AUTHPARAMS
```

Sample Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DeleteCustomerGateway

Deletes the specified customer gateway. You must delete the VPN connection before you can delete the customer gateway.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CustomerGatewayId

The ID of the customer gateway.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified customer gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteCustomerGateway
&CustomerGatewayId=cgw-b4dc3961
&AUTHPARAMS
```

Sample Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteCustomerGatewayResponse>
```

DeleteDhcpOptions

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.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DhcpOptionsId

The ID of the DHCP options set.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified set of DHCP options.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&AUTHPARAMS
```

Sample Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteDhcpOptionsResponse>
```

DeleteInternetGateway

Deletes the specified Internet gateway. You must detach the Internet gateway from the VPC before you can delete it.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

InternetGatewayId

The ID of the Internet gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified Internet gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteInternetGateway
&InternetGatewayId=igw-eaad4883
&AUTHPARAMS
```

Sample Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteInternetGatewayResponse>
```

DeleteKeyPair

Deletes the specified key pair, by removing the public key from Amazon EC2.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

KeyName

The name of the key pair.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request deletes the key pair named my-key-pair.

Sample Request

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


Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteKeyPairResponse>
```

DeleteNetworkAcl

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.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

NetworkAclId

The ID of the network ACL.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified network ACL.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAcl
&NetworkAclId=acl-2cb85d45
&AUTHPARAMS
```

Sample Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteNetworkAclResponse>
```

DeleteNetworkAclEntry

Deletes the specified ingress or egress entry (rule) from the specified network ACL.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Egress

Indicates whether the rule is an egress rule.

Type: Boolean

Required: Yes

NetworkAclId

The ID of the network ACL.

Type: String

Required: Yes

RuleNumber

The rule number of the entry to delete.

Type: Integer

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes ingress rule number 100 from the specified network ACL.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=100
&AUTHPARAMS
```

Sample Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

DeleteNetworkInterface

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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterface
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

Sample Response

```
<DeleteNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>  
  <return>true</return>  
</DeleteNetworkInterfaceResponse>
```

DeletePlacementGroup

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 Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

GroupName

The name of the placement group.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the placement group named XYZ-cluster.

Sample Request

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


Sample Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>  
  <return>true</return>  
</DeletePlacementGroupResponse>
```

DeleteRoute

Deletes the specified route from the specified route table.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DestinationCidrBlock

The CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

RouteTableId

The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the route with destination CIDR 172.16.1.0/24 from the specified route table.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRoute  
&RouteTableId=rtb-e4ad488d  
&DestinationCidrBlock=172.16.1.0/24  
&AUTHPARMS
```

Sample Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteRouteResponse>
```

DeleteRouteTable

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.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

RouteTableId

The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified route table.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRouteTable
&RouteTableId=rtb-e4ad488d
&AUTHPARAMS
```

Sample Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteRouteTableResponse>
```

DeleteSecurityGroup

Deletes a security group.

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-VPCC.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

GroupId

The ID of the security group. Required for a nondefault VPC.

Type: String

Required: No

GroupName

[EC2-Classic, default VPC] The name of the security group. You can specify either the security group name or the security group ID.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example for EC2-Classic

This example deletes the specified security group for EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupName=websrv
&AUTHPARAMS
```

Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</DeleteSecurityGroupResponse>
```

Example for EC2-VPC

This example deletes the specified security group for EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</DeleteSecurityGroupResponse>
```

DeleteSnapshot

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.

You cannot delete a snapshot of the root device of an Amazon EBS volume used by a registered AMI. You must first de-register the AMI before you can delete the snapshot.

For more information, see [Deleting an Amazon EBS Snapshot](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

SnapshotId

The ID of the Amazon EBS snapshot.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request deletes the snapshot with the ID snap-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot  
  
&SnapshotId.1=snap-1a2b3c4d  
&AUTHPARAMS
```

Sample Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteSnapshotResponse>
```

DeleteSpotDatafeedSubscription

Deletes the data feed for Spot Instances. For more information, see [Spot Instance Data Feed](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example request deletes the data feed for the AWS account.

Sample Request

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

Sample Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

DeleteSubnet

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 \(p. 538\)](#).

SubnetId

The ID of the subnet.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified subnet.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS
```

Sample Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteSubnetResponse>
```

DeleteTags

Deletes the specified set of tags from the specified set of resources. This call is designed to follow a `DescribeTags` request.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

ResourceId.N

The ID of the resource. For example, `ami-1a2b3c4d`. You can specify more than one resource ID.

Type: String list

Required: Yes

Tag.N

One or more tags to delete. If you omit the `value` 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.

Type: [Tag \(p. 509\)](#) list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the tags for the AMI with the ID ami-1a2b3c4d. First, get a list of the tags by using the DescribeTags request, then delete them.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=ami-1a2b3c4d
&Tag.1.Key=webserver
&Tag.2.Key=stack
&AUTHPARAMS
```

Sample Response

```
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteTagsResponse>
```

Example

This example deletes the stack and webserver tags for two particular instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&ResourceId.2=i-5f4e3d2a
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS
```

Example

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 that have a key of Purpose, regardless of the tag value.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=Purpose
&AUTHPARAMS
```

Example

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.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags  
&ResourceId.1=i-5f4e3d2a  
&Tag.1.Key=Purpose  
&Tag.2.Value=  
&AUTHPARAMS
```

DeleteVolume

Deletes the specified Amazon EBS volume. The volume must be in the `available` state (not attached to an instance).

Note

The volume may remain in the deleting state for several minutes.

For more information, see [Deleting an Amazon EBS Volume](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Volumeld

The ID of the volume.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request deletes the volume with the ID `vol-1a2b3c4d`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVolume  
&VolumeId=vol-1a2b3c4d  
&AUTHPARAMS
```

Sample Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteVolumeResponse>
```

DeleteVpc

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 \(p. 538\)](#).

VpcId

The ID of the VPC.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified VPC.

Sample Request

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

Sample Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteVpcResponse>
```

DeleteVpcPeeringConnection

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.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified VPC peering connection.

Sample Request

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

Sample Response

```
<DeleteVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcPeeringConnectionResponse>
```

DeleteVpnConnection

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. If you believe that the tunnel credentials for your VPN connection have been compromised, 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.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

VpnConnectionId

The ID of the VPN connection.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified VPN connection.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&vpnConnectionId=vpn-44a8938f
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

DeleteVpnConnectionRoute

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 \(p. 538\)](#).

DestinationCidrBlock

The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

VpnConnectionId

The ID of the VPN connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example 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".

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
```



```
&VpnConnectionId=vpn-83ad48ea  
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>4f35alb2-c2c3-4093-b51f-abb9d7311990</requestId>  
  <return>true</return>  
</DeleteVpnConnectionRouteResponse>
```

DeleteVpnGateway

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 \(p. 538\)](#).

VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example deletes the specified virtual private gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnGatewayResponse>
```

DeregisterImage

Deregisters the specified AMI. After you deregister an AMI, it can't be used to launch new instances.

This command does not delete the AMI.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ImageId

The ID of the AMI.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request deregisters the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeregisterImage
&ImageId=ami-4fa54026
&AUTHPARAMS
```

Sample Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeregisterImageResponse>
```

DescribeAccountAttributes

Describes attributes 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.
- `default-vpc`: The ID of the default VPC for your account, or `none`.
- `max-instances`: The maximum number of On-Demand instances that you can run.
- `vpc-max-security-groups-per-interface`: The maximum number of security groups that you can assign to a network interface.
- `max-elastic-ips`: The maximum number of Elastic IP addresses that you can allocate for use with EC2-Classic.
- `vpc-max-elastic-ips`: The maximum number of Elastic IP addresses that you can allocate for use with EC2-VPC.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AttributeName.N

One or more account attribute names.

Type: String list

Valid Values: `supported-platforms` | `default-vpc`

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

accountAttributeSet

Information about one or more account attributes.

Type: [AccountAttribute \(p. 422\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes your account attributes. The response is for an account that supports EC2-Classic and EC2-VPC.

Sample Request

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

Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>vpc-max-security-groups-per-interface</attributeName>

      <attributeValueSet>
        <item>
          <attributeValue>5</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>max-instances</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>20</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>EC2</attributeValue>
        </item>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>none</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

```
<attributeName>max-elastic-ips</attributeName>
<attributeValueSet>
  <item>
    <attributeValue>5</attributeValue>
  </item>
</attributeValueSet>
</item>
<item>
  <attributeName>vpc-max-elastic-ips</attributeName>
  <attributeValueSet>
    <item>
      <attributeValue>5</attributeValue>
    </item>
  </attributeValueSet>
</item>
</accountAttributeSet>
</DescribeAccountAttributesResponse>
```

Example 2

This example describes the ID of your default VPC. The first response is for an account that supports only EC2-VPC. The second response is for an account that supports both EC2-Classic and EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=default-vpc
&AUTHPARAMS
```

Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>vpc-xxxxxxx</attributeValue>?????
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse> <DescribeAccountAttributesResponse xmlns="ht
tp://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>none</attributeValue>?????
        </item>
      </attributeValueSet>
```



```
</item>  
</accountAttributeSet>  
</DescribeAccountAttributesResponse>
```

DescribeAddresses

Describes one or more of your Elastic IP addresses.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

PublicIp.N

[EC2-Classical] One or more Elastic IP addresses.

Default: Describes all your Elastic IP addresses.

Type: String list

Required: No

AllocationId.N

[EC2-VPC] One or more allocation IDs.

Default: Describes all your Elastic IP addresses.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters. Filter names and values are case-sensitive.

- `allocation-id` - [EC2-VPC] The allocation ID for the address.
- `association-id` - [EC2-VPC] The association ID for the address.
- `domain` - Indicates whether the address is for use in EC2-Classical (`standard`) or in a VPC (`vpc`).
- `instance-id` - The ID of the instance the address is associated with, if any.
- `network-interface-id` - [EC2-VPC] The ID of the network interface that the address is associated with, if any.
- `network-interface-owner-id` - The AWS account ID of the owner.
- `private-ip-address` - [EC2-VPC] The private IP address associated with the Elastic IP address.
- `public-ip` - The Elastic IP address.

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

addressesSet

Information about one or more Elastic IP addresses.

Type: [Address \(p. 423\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example for EC2-Classic

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 isn't assigned to an instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&PublicIp.1=192.0.2.1
&PublicIp.2=198.51.100.2
&AUTHPARAMS
```

Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 1 for EC2-VPC

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.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1= eipalloc-08229861
&AUTHPARAMS
```

Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.228</privateIpAddress>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

Example 2 for EC2-VPC

This example describes your Elastic IP addresses for EC2-VPC only.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&Filter.1.Name=domain
&Filter.1.Value.1=vpc
&AUTHPARAMS
```

DescribeAvailabilityZones

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.

For more information, see [Regions and Availability Zones](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ZoneName.N

The names of one or more Availability Zones.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `message` - Information about the Availability Zone.
- `region-name` - The name of the region for the Availability Zone (for example, `us-east-1`).
- `state` - The state of the Availability Zone (`available` | `impaired` | `unavailable`).
- `zone-name` - The name of the Availability Zone (for example, `us-east-1a`).

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

availabilityZoneInfo

Information about one or more Availability Zones.

Type: [AvailabilityZone \(p. 424\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example request describes the Availability Zones that are available to you. The response includes Availability Zones only for the current region.

Sample Request

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

Sample Response

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DescribeBundleTasks

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 `RegisterImage` 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 \(p. 538\)](#).

BundleId.N

One or more bundle task IDs.

Default: Describes all your bundle tasks.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `bundle-id` - The ID of the bundle task.
- `error-code` - If the task failed, the error code returned.
- `error-message` - If the task failed, the error message returned.
- `instance-id` - The ID of the instance.
- `progress` - The level of task completion, as a percentage (for example, 20%).
- `s3-bucket` - The Amazon S3 bucket to store the AMI.
- `s3-prefix` - The beginning of the AMI name.
- `start-time` - The time the task started (for example, 2013-09-15T17:15:20.000Z).
- `state` - The state of the task (`pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling` | `complete` | `failed`).
- `update-time` - The time of the most recent update for the task.

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

bundleInstanceTasksSet

Information about one or more bundle tasks.

Type: [BundleTask \(p. 426\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example describes the status of the specified bundle task.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-cla540a8
&AUTHPARAMS
```

Sample Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

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.

Sample Request

```
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
```

DescribeClassicLinkInstances

Describes one or more of your linked EC2-Classic instances. This request only returns information about EC2-Classic instances linked to a VPC through ClassicLink; you cannot use this request to return information about other instances.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `group-id` - The ID of a VPC security group that's associated with the instance.
- `instance-id` - The ID of the instance.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC that the instance is linked to.

Type: [Filter \(p. 439\)](#) list

Required: No

InstanceIds.N

One or more instance IDs. Must be instances linked to a VPC through ClassicLink.

Type: String list

Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another 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. You cannot specify this parameter and the instance IDs parameter in the same request.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

instancesSet

Information about one or more linked EC2-Classic instances.

Type: [ClassicLinkInstance](#) (p. 428) list

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example lists all of your linked EC2-Classic instances.

Sample Request

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

Sample Response

```
<DescribeClassicLinkInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-12345678</instanceId>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <groupSet>
        <item>
          <groupId>sg-alalalal</groupId>
        </item>
      </groupSet>
      <tagSet/>
    </item>
```

```
</instancesSet>  
</DescribeClassicLinkInstancesResponse>
```

Example

This example lists all linked EC2-Classic instances, and filters the response to include only instances that are linked to VPC vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances  
&Filter.1.Name=vpc-id  
&Filter.1.Value.1=vpc-1a2b3c4d  
&AUTHPARAMS
```

DescribeConversionTasks

Describes one or more of your conversion tasks. For more information, see [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ConversionTaskId.N

One or more conversion task IDs.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

conversionTasks

Type: [ConversionTask \(p. 429\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes all your conversion tasks.

Sample Request

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

Sample Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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?AWSAccessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
            </importManifestUrl>
          </image>
          <volume>
            <size>8</size>
            <id>vol-34d8a2ff</id>
          </volume>
        </importVolume>
        <state>active</state>
        <statusMessage/>
      </conversionTask>
    </item>
  </conversionTasks>
</DescribeConversionTasksResponse>
```

DescribeCustomerGateways

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CustomerGatewayId.N

One or more customer gateway IDs.

Default: Describes all your customer gateways.

Type: String list

Required: No

Filter.N

One or more filters.

- `bgp-asn` - The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).
- `customer-gateway-id` - The ID of the customer gateway.
- `ip-address` - The IP address of the customer gateway's Internet-routable external interface.
- `state` - The state of the customer gateway (`pending` | `available` | `deleting` | `deleted`).
- `type` - The type of customer gateway. Currently, the only supported type is `ipsec.1`.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: [Filter \(p. 439\)](#) list

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

customerGatewaySet

Information about one or more customer gateways.

Type: [CustomerGateway \(p. 431\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example request describes the specified customer gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

Sample Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

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.

Sample Request

```
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
```

DescribeDhcpOptions

Describes one or more of your DHCP options sets.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DhcpOptionsId.N

The IDs of one or more DHCP options sets.

Default: Describes all your DHCP options sets.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `dhcp-options-id` - The ID of a set of DHCP options.
- `key` - The key for one of the options (for example, `domain-name`).
- `value` - The value for one of the options.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

dhcpOptionsSet

Information about one or more DHCP options sets.

Type: [DhcpOptions \(p. 432\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example describes the specified DHCP options set.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&DhcpOptionsId.1=dopt-7a8b9c2d
&AUTHPARAMS
```

Sample Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

This example uses filters to describe any DHCP options set that includes a domain-name option whose value includes the string example.

Sample Request

```
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
```

DescribeExportTasks

Describes one or more of your export tasks.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ExportTaskId.N

One or more export task IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

exportTaskSet

Type: [ExportTask \(p. 437\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes a single export task.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeExportTasks
&exportTaskId.1=export-i-1234wxyz
&AUTHPARAMS
```

Sample Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DescribeImageAttribute

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 \(p. 538\)](#).

Attribute

The AMI attribute.

Note: Depending on your account privileges, the `blockDeviceMapping` attribute may return a `Client.AuthFailure` error. If this happens, use [DescribeImages \(p. 194\)](#) to get information about the block device mapping for the AMI.

Type: String

Valid Values: `description` | `kernel` | `ramdisk` | `launchPermission` | `productCodes`
| `blockDeviceMapping`

Required: Yes

ImageId

The ID of the AMI.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

imageAttribute

Information about the image attribute.

Type: [ImageAttribute \(p. 444\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example lists the launch permissions for the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

This example lists the product codes for the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
&Attribute=productCodes
&AUTHPARAMS
```

Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
```



```
</productCodes>  
</DescribeImageAttributeResponse>
```

DescribeImages

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.

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 \(p. 538\)](#).

ExecutableBy.N

Scopes 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 list

Required: No

ImageId.N

One or more image IDs.

Default: Describes all images available to you.

Type: String list

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). Omitting this option returns all images for which you have launch permissions, regardless of ownership.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `architecture` - The image architecture (`i386` | `x86_64`).
- `block-device-mapping.delete-on-termination` - A Boolean value that indicates whether the Amazon EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name for the Amazon EBS volume (for example, `/dev/sdh`).
- `block-device-mapping.snapshot-id` - The ID of the snapshot used for the Amazon EBS volume.
- `block-device-mapping.volume-size` - The volume size of the Amazon EBS volume, in GiB.
- `block-device-mapping.volume-type` - The volume type of the Amazon EBS volume (`gp2` | `standard` | `io1`).
- `description` - The description of the image (provided during image creation).
- `hypervisor` - The hypervisor type (`ovm` | `xen`).

- `image-id` - The ID of the image.
- `image-type` - The image type (`machine` | `kernel` | `ramdisk`).
- `is-public` - A Boolean that indicates whether the image is public.
- `kernel-id` - The kernel ID.
- `manifest-location` - The location of the image manifest.
- `name` - The name of the AMI (provided during image creation).
- `owner-alias` - The AWS account alias (for example, `amazon`).
- `owner-id` - The AWS account ID of the image owner.
- `platform` - The platform. To only list Windows-based AMIs, use `windows`.
- `product-code` - The product code.
- `product-code.type` - The type of the product code (`devpay` | `marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `root-device-name` - The name of the root device volume (for example, `/dev/sda1`).
- `root-device-type` - The type of the root device volume (`ebs` | `instance-store`).
- `state` - The state of the image (`available` | `pending` | `failed`).
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - The message for the state change.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `virtualization-type` - The virtualization type (`paravirtual` | `hvm`).

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

imagesSet

Information about one or more images.

Type: [Image \(p. 441\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example describes the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&ImageId.1=ami-be3adfd7
&AUTHPARAMS
```

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789012</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <ramdiskId>ari-1a2b3c4d</ramdiskId>
      <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 2

This example filters the response to include only public Windows images with an x86_64 architecture.

Sample Request

```
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
```

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>123456789012</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 3

This example returns the results to display images where the owner is aws-marketplace.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.1=aws-marketplace
&AUTHPARAMS
```

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
```

```
<imageId>ami-1a2b3c4d</imageId>
<imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</im
ageLocation>
<imageState>available</imageState>
<imageOwnerId>123456789012</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>
```

DescribeInstanceAttribute

Describes the specified attribute of the specified instance. You can specify only one attribute at a time. Valid attribute values are: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport`

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The instance attribute.

Type: String

Valid Values: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport`

Required: Yes

DryRun

Type: Boolean

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

instanceAttribute

Type: [InstanceAttribute \(p. 453\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example lists the instance type of the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=instanceType
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <instanceType>
    <value>t1.micro</value>
  </instanceType>
</DescribeInstanceAttributeResponse>
```

Example 2

This example lists the current value of the InstanceInitiatedShutdownBehavior attribute for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=instanceInitiatedShutdownBehavior
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <instanceInitiatedShutdownBehavior>
    <value>stop</value>
  </instanceInitiatedShutdownBehavior>
</DescribeInstanceAttributeResponse>
```

Example 3

This example lists the current value of the DisableApiTermination attribute for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=disableApiTermination
&AUTHPARAMS
```


Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <disableApiTermination>
    <value>>false</value>
  </disableApiTermination>
</DescribeInstanceAttributeResponse>
```

DescribeInstanceStatus

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. This call reports such problems as impaired reachability.
- Instance Status reports impaired functionality that arises from problems internal to the instance. This call reports 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 status is the event code `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 status is the event code `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 Elastic Compute Cloud User Guide*. For more information about working with scheduled events, see [Working with an Instance That Has a Scheduled Event](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceIds.N

One or more instance IDs.

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Type: String list

Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another 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. You cannot specify this parameter and the instance IDs parameter in the same request.

Type: Integer

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `availability-zone` - The Availability Zone of the instance.
- `event.code` - The code identifying the type of event (`instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`).
- `event.description` - A description of the event.
- `event.not-after` - The latest end time for the scheduled event, for example: `2010-09-15T17:15:20.000Z`.
- `event.not-before` - The earliest start time for the scheduled event, for example: `2010-09-15T17:15:20.000Z`.
- `instance-state-code` - A code representing the state of the instance, as a 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. The valid values are 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-status.reachability` - Filters on instance status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).
- `instance-status.status` - The status of the instance (`ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).
- `system-status.reachability` - Filters on system status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).
- `system-status.status` - The system status of the instance (`ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).

Type: [Filter \(p. 439\)](#) list

Required: No

IncludeAllInstances

When `true`, includes the health status for all instances. When `false`, includes the health status for running instances only.

Default: `false`

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instanceStatusSet

One or more instance status descriptions.

Type: [InstanceStatus \(p. 464\)](#) list

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example returns instance status descriptions for all instances.

Sample Request

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

Example 2

This example returns instance status descriptions for the specified instances.

Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.1=i-1a2b3c4d
&InstanceId.2=i-2a2b3c4d
&AUTHPARAMS
```

Example 3

This example returns instance status descriptions for all instances specified by supported DescribeInstanceStatus filters.

Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.1.Name=system-status.reachability
&Filter.1.Value.failed
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
  </instanceStatusSet>
  <status>impaired</status>
  <details>
    <item>
      <name>reachability</name>
      <status>failed</status>
      <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
    </item>
  </details>
</DescribeInstanceStatusResponse>
```

```

        </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>
      <item>
        <instanceId>i-2a2b3c4d</instanceId>
        <availabilityZone>us-east-1d</availabilityZone>
        <instanceState>
          <code>16</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-1d</availabilityZone>
        <instanceState>
          <code>16</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>
</item>
<item>
  <instanceId>i-4a2b3c4d</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>insufficient-data</status>
    <details>
      <item>
        <name>reachability</name>
        <status>insufficient-data</status>
      </item>
    </details>
  </instanceStatus>
</item>
</instanceStatusSet>
</DescribeInstanceStatusResponse>
```

DescribeInstances

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, Amazon EC2 returns information for all relevant instances. If you specify an instance ID that is not valid, an error is returned. If you specify an instance that you do not own, it is not included in the returned 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 \(p. 538\)](#).

InstanceId.N

One or more instance IDs.

Default: Describes all your instances.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `architecture` - The instance architecture (`i386` | `x86_64`).
- `availability-zone` - The Availability Zone of the instance.
- `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`.
- `block-device-mapping.delete-on-termination` - A Boolean that indicates whether the Amazon EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name for the Amazon EBS volume (for example, `/dev/sdh` or `xvdh`).
- `block-device-mapping.status` - The status for the Amazon EBS volume (`attaching` | `attached` | `detaching` | `detached`).
- `block-device-mapping.volume-id` - The volume ID of the Amazon EBS volume.
- `client-token` - The idempotency token you provided when you launched the instance.
- `dns-name` - The public DNS name of the instance.
- `group-id` - The ID of the security group for the instance. EC2-Classic only.
- `group-name` - The name of the security group for the instance. EC2-Classic only.
- `hypervisor` - The hypervisor type of the instance (`ovm` | `xen`).
- `iam-instance-profile.arn` - The instance profile associated with the instance. Specified as an ARN.
- `image-id` - The ID of the image used to launch the instance.
- `instance-id` - The ID of the instance.
- `instance-lifecycle` - Indicates whether this is a Spot Instance (`spot`).

- `instance-state-code` - The state of the instance, as a 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. The valid values are: 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-type` - The type of instance (for example, `t2.micro`).
- `instance.group-id` - The ID of the security group for the instance.
- `instance.group-name` - The name of the security group for the instance.
- `ip-address` - The public IP address of the instance.
- `kernel-id` - The kernel ID.
- `key-name` - The name of the key pair used when the instance was launched.
- `launch-index` - When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).
- `launch-time` - The time when the instance was launched.
- `monitoring-state` - Indicates whether monitoring is enabled for the instance (`disabled` | `enabled`).
- `owner-id` - The AWS account ID of the instance owner.
- `placement-group-name` - The name of the placement group for the instance.
- `platform` - The platform. Use `windows` if you have Windows instances; otherwise, leave blank.
- `private-dns-name` - The private DNS name of the instance.
- `private-ip-address` - The private IP address of the instance.
- `product-code` - The product code associated with the AMI used to launch the instance.
- `product-code.type` - The type of product code (`devpay` | `marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `reason` - 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 `state-reason-code` filter.
- `requester-id` - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
- `reservation-id` - 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.
- `root-device-name` - The name of the root device for the instance (for example, `/dev/sda1` or `/dev/xvda`).
- `root-device-type` - The type of root device that the instance uses (`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.
- `spot-instance-request-id` - The ID of the Spot Instance request.
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - A message that describes the state change.
- `subnet-id` - The ID of the subnet for the instance.
- `tag:key=value` - The key/value combination of a tag assigned to the resource, where `tag:key` is the tag's key.
- `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.

- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `tenancy` - The tenancy of an instance (`dedicated` | `default`).
- `virtualization-type` - The virtualization type of the instance (`paravirtual` | `hvm`).
- `vpc-id` - The ID of the VPC that the instance is running in.
- `network-interface.description` - The description of the network interface.
- `network-interface.subnet-id` - The ID of the subnet for the network interface.
- `network-interface.vpc-id` - The ID of the VPC for the network interface.
- `network-interface.network-interface.id` - The ID of the network interface.
- `network-interface.owner-id` - The ID of the owner of the network interface.
- `network-interface.availability-zone` - The Availability Zone for the network interface.
- `network-interface.requester-id` - The requester ID for the network interface.
- `network-interface.requester-managed` - Indicates whether the network interface is being managed by AWS.
- `network-interface.status` - The status of the network interface (`available`) | `in-use`).
- `network-interface.mac-address` - The MAC address of the network interface.
- `network-interface-private-dns-name` - The private DNS name of the network interface.
- `network-interface.source-dest-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.
- `network-interface.group-id` - The ID of a security group associated with the network interface.
- `network-interface.group-name` - The name of a security group associated with the network interface.
- `network-interface.attachment.attachment-id` - The ID of the interface attachment.
- `network-interface.attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `network-interface.attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `network-interface.addresses.private-ip-address` - The private IP address associated with the network interface.
- `network-interface.attachment.device-index` - The device index to which the network interface is attached.
- `network-interface.attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `network-interface.attachment.attach-time` - The time that the network interface was attached to an instance.
- `network-interface.attachment.delete-on-termination` - Specifies whether the attachment is deleted when an instance is terminated.
- `network-interface.addresses.primary` - Specifies whether the IP address of the network interface is the primary private IP address.
- `network-interface.addresses.association.public-ip` - The ID of the association of an Elastic IP address with a network interface.
- `network-interface.addresses.association.ip-owner-id` - The owner ID of the private IP address associated with the network interface.
- `association.public-ip` - The address of the Elastic IP address bound to the network interface.

- `association.ip-owner-id` - The owner of the Elastic IP address associated with the network interface.
- `association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address for your network interface.
- `association.association-id` - The association ID returned when the network interface was associated with an IP address.

Type: [Filter \(p. 439\)](#) list

Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another 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. You cannot specify this parameter and the instance IDs parameter in the same request.

Type: Integer

Required: No

NextToken

The token to request the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

reservationSet

One or more reservations.

Type: [Reservation \(p. 485\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example describes all instances owned by your AWS account. The example response shows information for one instance.

Sample Request

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

Sample Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>123456789012</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>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
<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>123456789012</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>123456789012</ipOwnerId>
    </association>
  </item>
</networkInterfaceSet>
```

```
</association>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <primary>>true</primary>
    <association>
      <publicIp>198.51.100.63</publicIp>
      <ipOwnerId>123456789012</ipOwnerId>
    </association>
  </item>
  <item>
    <privateIpAddress>10.0.0.14</privateIpAddress>
    <primary>>false</primary>
    <association>
      <publicIp>198.51.100.177</publicIp>
      <ipOwnerId>123456789012</ipOwnerId>
    </association>
  </item>
</privateIpAddressesSet>
</item>
</networkInterfaceSet>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

Example 2

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.

Sample Request

```
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 3

This example describes all instances that are running in a VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=*
&AUTHPARAMS
```

Example 4

This example describes any instances that have a tag with the key Owner, regardless of the value of the tag.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag-key
&Filter.1.Value.1=Owner
&AUTHPARAMS
```

Example

This example lists only the instances that have a tag with the key Owner and the value DbAdmin.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag:Owner
&Filter.1.Value.1=DbAdmin
&AUTHPARAMS
```

DescribeInternetGateways

Describes one or more of your Internet gateways.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `attachment.state` - The current state of the attachment between the gateway and the VPC (`available`). Present only if a VPC is attached.
- `attachment.vpc-id` - The ID of an attached VPC.
- `internet-gateway-id` - The ID of the Internet gateway.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: [Filter \(p. 439\)](#) list

Required: No

InternetGatewayId.N

One or more Internet gateway IDs.

Default: Describes all your Internet gateways.

Type: String list

Required: No

Response Elements

The following elements are returned.

internetGatewaySet

Information about one or more Internet gateways.

Type: [InternetGateway \(p. 466\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example describes all your Internet gateways.

Sample Request

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

Sample Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DescribeKeyPairs

Describes one or more of your key pairs.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

KeyName.N

One or more key pair names.

Default: Describes all your key pairs.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `fingerprint` - The fingerprint of the key pair.
- `key-name` - The name of the key pair.

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

keySet

Information about one or more key pairs.

Type: [KeyPairInfo \(p. 469\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes the keypair with name my-key-pair.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS
```

Sample Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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

This example filters the response to include only key pairs whose names include the string Dave.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS
```

DescribeNetworkAcls

Describes one or more of your network ACLs.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `association.association-id` - The ID of an association ID for the ACL.
- `association.network-acl-id` - The ID of the network ACL involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `default` - Indicates whether the ACL is the default network ACL for the VPC.
- `entry.cidr` - The CIDR range specified in the entry.
- `entry.egress` - Indicates whether the entry applies to egress traffic.
- `entry.icmp.code` - The ICMP code specified in the entry, if any.
- `entry.icmp.type` - The ICMP type specified in the entry, if any.
- `entry.port-range.from` - The start of the port range specified in the entry.
- `entry.port-range.to` - The end of the port range specified in the entry.
- `entry.protocol` - The protocol specified in the entry (`tcp` | `udp` | `icmp` or a protocol number).
- `entry.rule-action` - Allows or denies the matching traffic (`allow` | `deny`).
- `entry.rule-number` - The number of an entry (in other words, rule) in the ACL's set of entries.
- `network-acl-id` - The ID of the network ACL.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the network ACL.

Type: [Filter \(p. 439\)](#) list

Required: No

NetworkAclId.N

One or more network ACL IDs.

Default: Describes all your network ACLs.

Type: String list

Required: No

Response Elements

The following elements are returned.

networkAclSet

Information about one or more network ACLs.

Type: [NetworkAcl](#) (p. 473) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example describes all your network ACLs.

Sample Request

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

Sample Response

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
        </item>
      </entrySet>
    </item>
  </networkAclSet>
</DescribeNetworkAclsResponse>
```

```
    <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>
    <item>
      <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>
```

DescribeNetworkInterfaceAttribute

Describes 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 \(p. 538\)](#).

Attribute

The attribute of the network interface.

Type: String

Valid Values: `description` | `groupSet` | `sourceDestCheck` | `attachment`

Required: No

DryRun

Type: Boolean

Required: No

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachment

The attachment (if any) of the network interface.

Type: [NetworkInterfaceAttachment \(p. 478\)](#)

description

The description of the network interface.

Type: [AttributeValue \(p. 424\)](#)

groupSet

The security groups associated with the network interface.

Type: [GroupIdentifier \(p. 440\)](#) list

networkInterfaceId

The ID of the network interface.

Type: String

requestId

The ID of the request.

Type: String

sourceDestCheck

Indicates whether source/destination checking is enabled.

Type: [AttributeBooleanValue \(p. 424\)](#)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example describes the `sourceDestCheck` attribute of the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<DescribeNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2014-10-01/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```

DescribeNetworkInterfaces

Describes one or more of your network interfaces.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `addresses.private-ip-address` - The private IP addresses associated with the network interface.
- `addresses.primary` - Whether the private IP address is the primary IP address associated with the network interface.
- `addresses.association.public-ip` - The association ID returned when the network interface was associated with the Elastic IP address.
- `addresses.association.owner-id` - The owner ID of the addresses associated with the network interface.
- `association.association-id` - The association ID returned when the network interface was associated with an IP address.
- `association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address for your network interface.
- `association.ip-owner-id` - The owner of the Elastic IP address associated with the network interface.
- `association.public-ip` - The address of the Elastic IP address bound to the network interface.
- `association.public-dns-name` - The public DNS name for the network interface.
- `attachment.attachment-id` - The ID of the interface attachment.
- `attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `attachment.device-index` - The device index to which the network interface is attached.
- `attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `attachment.attach.time` - The time that the network interface was attached to an instance.
- `attachment.delete-on-termination` - Indicates whether the attachment is deleted when an instance is terminated.
- `availability-zone` - The Availability Zone of the network interface.
- `description` - The description of the network interface.
- `group-id` - The ID of a security group associated with the network interface.
- `group-name` - The name of a security group associated with the network interface.
- `mac-address` - The MAC address of the network interface.
- `network-interface-id` - The ID of the network interface.
- `owner-id` - The AWS account ID of the network interface owner.
- `private-ip-address` - The private IP address or addresses of the network interface.
- `private-dns-name` - The private DNS name of the network interface.

- `requester-id` - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
- `requester-managed` - Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).
- `source-desk-check` - Indicates 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.
- `status` - The status of the network interface. If the network interface is not attached to an instance, the status is `available`; if a network interface is attached to an instance the status is `in-use`.
- `subnet-id` - The ID of the subnet for the network interface.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the network interface.

Type: [Filter \(p. 439\)](#) list

Required: No

NetworkInterfaceId.N

One or more network interface IDs.

Default: Describes all your network interfaces.

Type: String list

Required: No

Response Elements

The following elements are returned.

networkInterfaceSet

Information about one or more network interfaces.

Type: [NetworkInterface \(p. 475\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes all your network interfaces.

Sample Request

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

Sample Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
  <networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>
      <subnetId>subnet-c53c87ac</subnetId>
      <vpcId>vpc-cc3c87a5</vpcId>
      <availabilityZone>api-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>
      </privateIpAddressesSet>
    </item>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

```
        <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>
    <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>
```

DescribePlacementGroups

Describes one or more of your placement groups. For more information about placement groups and cluster instances, see [Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `group-name` - The name of the placement group.
- `state` - The state of the placement group (`pending` | `available` | `deleting` | `deleted`).
- `strategy` - The strategy of the placement group (`cluster`).

Type: [Filter \(p. 439\)](#) list

Required: No

GroupName.N

One or more placement group names.

Default: Describes all your placement groups, or only those otherwise specified.

Type: String list

Required: No

Response Elements

The following elements are returned.

placementGroupSet

One or more placement groups.

Type: [PlacementGroup \(p. 480\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes the placement group named XYZ-cluster.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=XYZ-cluster
&AUTHPARAMS
```

Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>XYZ-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

Example

This example filters the response to include only placement groups that include the string Project in the name.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

DescribeRegions

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 \(p. 538\)](#).

RegionName.N

The names of one or more regions.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `endpoint` - The endpoint of the region (for example, `ec2.us-east-1.amazonaws.com`).
- `region-name` - The name of the region (for example, `us-east-1`).

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

regionInfo

Information about one or more regions.

Type: [Region \(p. 485\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example displays information about all regions.

Sample Request

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

Example 2

This example displays information about the specified regions only.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1
&AUTHPARAMS
```

Sample Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DescribeReservedInstances

Describes one or more of the Reserved Instances that you purchased.

For more information about Reserved Instances, see [Reserved Instances](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ReservedInstancesId.N

One or more Reserved Instance IDs.

Default: Describes all your Reserved Instances, or only those otherwise specified.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (one year or three years), in seconds (31536000 | 94608000).
- `end` - The time when the Reserved Instance expires (for example, 2014-08-07T11:54:42.000Z).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type on which the Reserved Instance can be used.
- `product-description` - The product description of the Reserved Instance (Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)).
- `reserved-instances-id` - The ID of the Reserved Instance.
- `start` - The time at which the Reserved Instance purchase request was placed (for example, 2014-08-07T11:54:42.000Z).
- `state` - The state of the Reserved Instance (`payment-pending` | `active` | `payment-failed` | `retired`).
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: [Filter \(p. 439\)](#) list

Required: No

OfferingType

The Reserved Instance offering type. 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.

Type: String

Valid Values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization` | `No Upfront` | `Partial Upfront` | `All Upfront`

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservedInstancesSet

A list of Reserved Instances.

Type: [ReservedInstances \(p. 487\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes Reserved Instances owned by your account.

Sample Request

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

Sample Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

Example

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).

Sample Request

```
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
```

DescribeReservedInstancesListings

Describes your account's Reserved Instance listings in 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.

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, see [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Filters.N

One or more filters.

- `reserved-instances-id` - The ID of the Reserved Instances.
- `reserved-instances-listing-id` - The ID of the Reserved Instances listing.
- `status` - The status of the Reserved Instance listing (`pending` | `active` | `cancelled` | `closed`).
- `status-message` - The reason for the status.

Type: [Filter \(p. 439\)](#) list

Required: No

ReservedInstancesId

One or more Reserved Instance IDs.

Type: String

Required: No

ReservedInstancesListingId

One or more Reserved Instance Listing IDs.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservedInstancesListingsSet

Information about the Reserved Instance listing.

Type: [ReservedInstancesListing](#) (p. 490) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example shows all the listings associated with your account.

Sample Request

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

Sample 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>
<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>
```

DescribeReservedInstancesModifications

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 Elastic Compute Cloud User Guide for Linux.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ReservedInstancesModificationId.N

IDs for the submitted modification request.

Type: String list

Required: No

Filter.N

One or more filters.

- `client-token` - The idempotency token for the modification request.
- `create-date` - The time when the modification request was created.
- `effective-date` - The time when the modification becomes effective.
- `modification-result.reserved-instances-id` - The 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.
- `modification-result.target-configuration.availability-zone` - The Availability Zone for the new Reserved Instances.
- `modification-result.target-configuration.instance-count` - The number of new Reserved Instances.
- `modification-result.target-configuration.instance-type` - The instance type of the new Reserved Instances.
- `modification-result.target-configuration.platform` - The network platform of the new Reserved Instances (`EC2-Classic` | `EC2-VPC`).
- `reserved-instances-id` - The ID of the Reserved Instances modified.
- `reserved-instances-modification-id` - The ID of the modification request.
- `status` - The status of the Reserved Instances modification request (`processing` | `fulfilled` | `failed`).
- `status-message` - The reason for the status.
- `update-date` - The time when the modification request was last updated.

Type: [Filter \(p. 439\)](#) list

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

reservedInstancesModificationsSet

The Reserved Instance modification information.

Type: [ReservedInstancesModification](#) (p. 491) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

Sample Request

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

Example 2

This example filters the response to include only Reserved Instances modification requests with status processing.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&Filter.1.Name=status
&Filter.1.Value.1=processing
&AUTHPARAMS
```

DescribeReservedInstancesOfferings

Describes Reserved Instance offerings that are available for purchase. With Reserved Instances, you purchase the right to launch 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.

For more information, see [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AvailabilityZone

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

IncludeMarketplace

Include Marketplace offerings in the response.

Type: Boolean

Required: No

InstanceType

The instance type on which the Reserved Instance can be used. For more information, see [Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Type: String

Valid Values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

MaxDuration

The maximum duration (in seconds) to filter when searching for offerings.

Default: 94608000 (3 years)

Type: Long

Required: No

MaxInstanceCount

The maximum number of instances to filter when searching for offerings.

Default: 20

Type: Integer

Required: No

MinDuration

The minimum duration (in seconds) to filter when searching for offerings.

Default: 2592000 (1 month)

Type: Long

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)

Required: No

ReservedInstancesOfferingId.N

One or more Reserved Instances offering IDs.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (for example, one year or three years), in seconds (31536000 | 94608000).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type on which the Reserved Instance can be used.
- `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.
- `product-description` - The description of the Reserved Instance (Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)).
- `reserved-instances-offering-id` - The Reserved Instances offering ID.
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: [Filter \(p. 439\)](#) list

Required: No

InstanceTenancy

The tenancy of the Reserved Instance offering. A Reserved Instance with `dedicated` tenancy runs on single-tenant hardware and can only be launched within a VPC.

Default: `default`

Type: String

Valid Values: `default` | `dedicated`

Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. The maximum is 100.

Default: 100

Type: Integer

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

OfferingType

The Reserved Instance offering type. 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.

Type: String

Valid Values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization` | `No Upfront` | `Partial Upfront` | `All Upfront`

Required: No

Response Elements

The following elements are returned.

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

reservedInstancesOfferingsSet

A list of Reserved Instances offerings.

Type: [ReservedInstancesOffering \(p. 493\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

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. When using the Query API, all strings must be URL-encoded.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=marketplace
&Filter.1.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2014-10-01
&AUTHPARAMS
```

Sample Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2014-10-01/" >
  <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 Describing AWS Offerings Only

This example lists AWS offerings only.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&AUTHPARAMS
```

Example Using Tokens to Manage Results

You can use pagination support to query the results sequentially and in parts. Specify the maximum number of results that are returned in the response. Then, each paginated response contains a token that can be provided as input to a subsequent DescribeReservedInstancesOfferings call to fetch the next page. (Make sure that you use URL encoding for the token value.)

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&AUTHPARAMS

<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</re
servedInstancesOfferingId>
      <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>Light 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
servedInstancesOfferingId>
  <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>
```

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&NextToken=h%2FC8YKPBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&AUTHPARAMS
```

Example Using Filters

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).

Sample Request

```
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
```


DescribeRouteTables

Describes one or more of your route tables.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `association.route-table-association-id` - The ID of an association ID for the route table.
- `association.route-table-id` - The ID of the route table involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `association.main` - Indicates whether the route table is the main route table for the VPC.
- `route-table-id` - The ID of the route table.
- `route.destination-cidr-block` - The CIDR range specified in a route in the table.
- `route.gateway-id` - The ID of a gateway specified in a route in the table.
- `route.instance-id` - The ID of an instance specified in a route in the table.
- `route.origin` - Describes how the route was created. `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 (`active` | `blackhole`). 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).
- `route.vpc-peering-connection-id` - The ID of a VPC peering connection specified in a route in the table.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the route table.

Type: [Filter \(p. 439\)](#) list

Required: No

RouteTableId.N

One or more route table IDs.

Default: Describes all your route tables.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

routeTableSet

Information about one or more route tables.

Type: [RouteTable](#) (p. 496) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example describes all your route tables. 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.

Sample Request

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

Sample Response

```
<DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DescribeSecurityGroups

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 Elastic Compute Cloud User Guide for Linux* and [Security Groups for Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

GroupId.N

One or more security group IDs. Required for security groups in a nondefault VPC.

Default: Describes all your security groups.

Type: String list

Required: No

GroupName.N

[EC2-Classic and default VPC only] One or more security group names. You can specify either the security group name or the security group ID. For security groups in a nondefault VPC, use the `group-name` filter to describe security groups by name.

Default: Describes all your security groups.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `description` - The description of the security group.
- `group-id` - The ID of the security group.
- `group-name` - The name of the security group.
- `ip-permission.cidr` - A CIDR range that has been granted permission.
- `ip-permission.from-port` - The start of port range for the TCP and UDP protocols, or an ICMP type number.
- `ip-permission.group-id` - The ID of a security group that has been granted permission.
- `ip-permission.group-name` - The name of a security group that has been granted permission.
- `ip-permission.protocol` - The IP protocol for the permission (`tcp` | `udp` | `icmp` or a protocol number).
- `ip-permission.to-port` - The end of port range for the TCP and UDP protocols, or an ICMP code.
- `ip-permission.user-id` - The ID of an AWS account that has been granted permission.
- `owner-id` - The AWS account ID of the owner of the security group.
- `tag-key` - The key of a tag assigned to the security group.
- `tag-value` - The value of a tag assigned to the security group.
- `vpc-id` - The ID of the VPC specified when the security group was created.

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

securityGroupInfo

Information about one or more security groups.

Type: [SecurityGroup \(p. 498\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example returns information about two security groups named `WebServers` and `RangedPortsBySource`. Note that the `GroupName` parameter returns information about security groups in EC2-Classic or a default VPC only. If no security groups are found in either platform, an exception is returned, regardless of whether you have a security group with the specified name in a nondefault VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupName.1=WebServers
&GroupName.2=RangedPortsBySource
&AUTHPARAMS
```

Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>123456789012</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>123456789012</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>123456789012</userId>
            <groupId>sg-3a2b3c4d</groupId>
            <groupName>Group B</groupName>
          </item>
        </groups>
        <ipRanges/>
      </item>
    </ipPermissions>
    <ipPermissionsEgress/>
  </item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

Example 2

This example describes all security groups that grant access over TCP specifically on port 22 from instances associated with `app_server_group` or `database_group`.

Sample Request

```
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
```

DescribeSnapshotAttribute

Describes the specified attribute of the specified snapshot. You can specify only one attribute at a time.

For more information about Amazon EBS snapshots, see [Amazon EBS Snapshots](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The snapshot attribute you would like to view.

Type: String

Valid Values: `productCodes` | `createVolumePermission`

Required: Yes

SnapshotId

The ID of the Amazon EBS snapshot.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

createVolumePermission

A list of permissions for creating volumes from the snapshot.

Type: [CreateVolumePermission \(p. 430\)](#) list

productCodes

A list of product codes.

Type: [ProductCode \(p. 484\)](#) list

requestId

The ID of the request.

Type: String

snapshotId

The ID of the Amazon EBS snapshot.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes permissions for a snapshot with the ID of snap-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute  
  
&SnapshotId=snap-1a2b3c4d  
&Attribute=createVolumePermission  
&AUTHPARAMS
```

Sample Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <snapshotId>snap-1a2b3c4d</snapshotId>  
  <createVolumePermission>  
    <item>  
      <group>all</group>  
    </item>  
  </createVolumePermission>  
</DescribeSnapshotAttributeResponse>
```


DescribeSnapshots

Describes one or more of the Amazon EBS snapshots available to you. Available snapshots include public snapshots available for any AWS account to launch, private snapshots that 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.

If you are describing a long list of snapshots, 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 `DescribeSnapshots` request to retrieve the remaining results.

For more information about Amazon EBS snapshots, see [Amazon EBS Snapshots](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

MaxResults

The maximum number of snapshot results returned by `DescribeSnapshots` in paginated output. When this parameter is used, `DescribeSnapshots` 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 `DescribeSnapshots` 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 `DescribeSnapshots` returns all results. You cannot specify this parameter and the snapshot IDs parameter in the same request.

Type: Integer

Required: No

NextToken

The `NextToken` value returned from a previous paginated `DescribeSnapshots` 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

Required: No

Owner.N

Returns the snapshots owned by the specified owner. Multiple owners can be specified.

Type: String list

Required: No

RestorableBy.N

One or more AWS accounts IDs that can create volumes from the snapshot.

Type: String list

Required: No

SnapshotId.N

One or more snapshot IDs.

Default: Describes snapshots for which you have launch permissions.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `description` - A description of the snapshot.
- `owner-alias` - The AWS account alias (for example, `amazon`) that owns the snapshot.
- `owner-id` - The ID of the AWS account that owns the snapshot.
- `progress` - The progress of the snapshot, as a percentage (for example, 80%).
- `snapshot-id` - The snapshot ID.
- `start-time` - The time stamp when the snapshot was initiated.
- `status` - The status of the snapshot (`pending` | `completed` | `error`).
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `volume-id` - The ID of the volume the snapshot is for.
- `volume-size` - The size of the volume, in GiB.

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

nextToken

The `NextToken` value to include in a future `DescribeSnapshots` request. When the results of a `DescribeSnapshots` 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: String

requestId

The ID of the request.

Type: String

snapshotSet

Type: [Snapshot \(p. 500\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes a snapshot with an ID of `snap-1a2b3c4d`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
      <encrypted>true</encrypted>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

```
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

Example

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_.

Sample Request

```
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
```

Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>true</encrypted>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

DescribeSpotDatafeedSubscription

Describes the data feed for Spot Instances. For more information, see [Spot Instance Data Feed](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

spotDatafeedSubscription

The Spot Instance data feed subscription.

Type: [SpotDatafeedSubscription](#) (p. 501)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example describes the data feed for the account.

Sample Request

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

Sample Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazon
aws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
```

```
<bucket>my-s3-bucket</bucket>  
<prefix>spotdata_</prefix>  
<state>Active</state>  
</spotDatafeedSubscription>  
</DescribeSpotDatafeedSubscriptionResponse>
```

DescribeSpotInstanceRequests

Describes the Spot Instance requests that belong to your account. Spot Instances are instances that Amazon EC2 launches when the bid 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, see [Spot Instance Requests](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

You can use `DescribeSpotInstanceRequests` to find a running Spot Instance by examining the response. If the status of the Spot Instance is `fulfilled`, the instance ID appears in the response and contains the identifier of the instance. Alternatively, you can use [DescribeInstances](#) (p. 208) with a filter to look for instances where the instance lifecycle is `spot`.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `availability-zone-group` - The Availability Zone group.
- `create-time` - The time stamp when the Spot Instance request was created.
- `fault-code` - The fault code related to the request.
- `fault-message` - The fault message related to the request.
- `instance-id` - The ID of the instance that fulfilled the request.
- `launch-group` - The Spot Instance launch group.
- `launch.block-device-mapping.delete-on-termination` - Indicates whether the Amazon EBS volume is deleted on instance termination.
- `launch.block-device-mapping.device-name` - The device name for the Amazon EBS volume (for example, `/dev/sdh`).
- `launch.block-device-mapping.snapshot-id` - The ID of the snapshot used for the Amazon EBS volume.
- `launch.block-device-mapping.volume-size` - The size of the Amazon EBS volume, in GiB.
- `launch.block-device-mapping.volume-type` - The type of the Amazon EBS volume (`gp2` | `standard` | `io1`).
- `launch.group-id` - The security group for the instance.
- `launch.image-id` - The ID of the AMI.
- `launch.instance-type` - The type of instance (for example, `m1.small`).
- `launch.kernel-id` - The kernel ID.
- `launch.key-name` - The name of the key pair the instance launched with.
- `launch.monitoring-enabled` - Whether monitoring is enabled for the Spot Instance.
- `launch.ramdisk-id` - The RAM disk ID.
- `network-interface.network-interface-id` - The ID of the network interface.
- `network-interface.device-index` - The index of the device for the network interface attachment on the instance.
- `network-interface.subnet-id` - The ID of the subnet for the instance.
- `network-interface.description` - A description of the network interface.

- `network-interface.private-ip-address` - The primary private IP address of the network interface.
- `network-interface.delete-on-termination` - Indicates whether the network interface is deleted when the instance is terminated.
- `network-interface.group-id` - The ID of the security group associated with the network interface.
- `network-interface.group-name` - The name of the security group associated with the network interface.
- `network-interface.addresses.primary` - Indicates whether the IP address is the primary private IP address.
- `product-description` - The product description associated with the instance (Linux/UNIX | Windows).
- `spot-instance-request-id` - The Spot Instance request ID.
- `spot-price` - The maximum hourly price for any Spot Instance launched to fulfill the request.
- `state` - The state of the Spot Instance request (`open` | `active` | `closed` | `cancelled` | `failed`). Spot bid status information can help you track your Amazon EC2 Spot Instance requests. For more information, see [Spot Bid Status](#) in the Amazon Elastic Compute Cloud User Guide for Linux.
- `status-code` - The short code describing the most recent evaluation of your Spot Instance request.
- `status-message` - The message explaining the status of the Spot Instance request.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `type` - The type of Spot Instance request (`one-time` | `persistent`).
- `launched-availability-zone` - The Availability Zone in which the bid is launched.
- `valid-from` - The start date of the request.
- `valid-until` - The end date of the request.

Type: [Filter \(p. 439\)](#) list

Required: No

SpotInstanceRequestId.N

One or more Spot Instance request IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

spotInstanceRequestSet

One or more Spot Instance requests.

Type: [SpotInstanceRequest](#) (p. 502) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example for DescribeSpotInstanceRequests

This example returns information about current Spot Instance requests. In the response, if the status of the Spot Instance is fulfilled, the instance ID appears in the response and contains the identifier of the instance.

Sample Request

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

Sample Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>my-key-pair</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>
    </item>
  </spotInstanceRequestSet>
</DescribeSpotInstanceRequestsResponse>
```

```
<launchedAvailabilityZone>us-east-1a</launchedAvailabilityZone>
</item>
<spotInstanceRequestSet/>
<DescribeSpotInstanceRequestsResponse>
```

Example for DescribeSpotInstanceRequests

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.

Sample Request

```
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
```

Example for DescribeInstances

Alternatively, you can use DescribeInstances and use a filter to look for instances where instance lifecycle contains spot.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
```

DescribeSpotPriceHistory

Describes the Spot Price history. The prices returned are listed in chronological order, from the oldest to the most recent, for up to the past 90 days. For more information, see [Spot Instance Pricing History](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

When you specify a start and end time, this operation returns 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 \(p. 538\)](#).

AvailabilityZone

Filters the results by the specified Availability Zone.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

EndTime

The date and time, up to the current date, from which to stop retrieving the price history data.

Type: DateTime

Required: No

Filter.N

One or more filters.

- `availability-zone` - The Availability Zone for which prices should be returned.
- `instance-type` - The type of instance (for example, `m1.small`).
- `product-description` - The product description for the Spot Price (`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).
- `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: [Filter \(p. 439\)](#) list

Required: No

InstanceType.N

Filters the results by the specified instance types.

Type: String list

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large |`

c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge
| g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge
| r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another 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.

Type: Integer

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

ProductDescription.N

Filters the results by the specified basic product descriptions.

Type: String list

Required: No

StartTime

The date and time, up to the past 90 days, from which to start retrieving the price history data.

Type: DateTime

Required: No

Response Elements

The following elements are returned.

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

spotPriceHistorySet

The historical Spot Prices.

Type: [SpotPrice](#) (p. 505) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example gets Spot Price history for the first day in December 2014 for the specified Availability Zone.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2014-12-01T00:00:00.000Z
&EndTime=2014-12-01T23:59:59.000Z
&AvailabilityZone=us-east-1a
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotPriceHistorySet>
    <item>
      <instanceType>m1.small</instanceType>
      <productDescription>Linux/UNIX</productDescription>
      <spotPrice>0.287</spotPrice>
      <timestamp>2014-12-04T20:56:05.000Z</timestamp>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
    <item>
      <instanceType>m1.small</instanceType>
      <productDescription>Windows</productDescription>
      <spotPrice>0.033</spotPrice>
      <timestamp>2014-12-04T22:33:47.000Z</timestamp>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
  </spotPriceHistorySet>
  <nextToken/>
</DescribeSpotPriceHistoryResponse>
```

Example with Filters

This example uses filters to get the same results as the previous example.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1=2014-12-01*
&Filter.2.Name=availability-zone
&Filter.2.Value.1=us-east-1a
&AUTHPARAMS
```

DescribeSubnets

Describes one or more of your subnets.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Filter.N

One or more filters.

- `availabilityZone` - The Availability Zone for the subnet. You can also use `availability-zone` as the filter name.
- `available-ip-address-count` - The number of IP addresses in the subnet that are available.
- `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.
- `defaultForAz` - Indicates whether this is the default subnet for the Availability Zone. You can also use `default-for-az` as the filter name.
- `state` - The state of the subnet (`pending` | `available`).
- `subnet-id` - The ID of the subnet.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the subnet.

Type: [Filter \(p. 439\)](#) list

Required: No

SubnetId.N

One or more subnet IDs.

Default: Describes all your subnets.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

subnetSet

Information about one or more subnets.

Type: [Subnet \(p. 507\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example describes the subnets with the IDs subnet-9d4a7b6c and subnet-6e7f829e.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&SubnetId.1=subnet-9d4a7b6c
&SubnetId.2=subnet-6e7f829e
&AUTHPARAMS
```

Sample Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

```
<subnetSet/>  
</DescribeSubnetsResponse>
```

Example 2

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.

Sample Request

```
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
```


DescribeTags

Describes one or more of the tags for your EC2 resources.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `key` - The tag key.
- `resource-id` - The resource ID.
- `resource-type` - The resource type (`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: [Filter \(p. 439\)](#) list

Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another 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.

Type: Integer

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return..

Type: String

requestId

The ID of the request.

Type: String

tagSet

A list of tags.

Type: [TagDescription \(p. 509\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes all the tags in your account.

Sample Request

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

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
  </tagSet>
</DescribeTagsResponse>
```

```
<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

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-id
&Filter.1.Value.1=ami-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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

This example describes the tags for all your instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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

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 `?bserver` to find tags with the key `webserver` or `Webserver`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/" />
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webservers</key>
      <value/>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

Example

This example describes the tags for all your instances tagged with either `stack=Test` or `stack=Production`.

Sample Request

```
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
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/" />
  <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

This example describes the tags for all your instances tagged with `Purpose=[empty string]`.

Sample Request

```
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
```

DescribeVolumeAttribute

Describes the specified attribute of the specified volume. You can specify only one attribute at a time.

For more information about Amazon EBS volumes, see [Amazon EBS Volumes](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The instance attribute.

Type: String

Valid Values: `autoEnableIO` | `productCodes`

Required: No

Volumeld

The ID of the volume.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

autoEnableIO

The state of `autoEnableIO` attribute.

Type: [AttributeBooleanValue \(p. 424\)](#)

productCodes

A list of product codes.

Type: [ProductCode \(p. 484\)](#) list

requestId

The ID of the request.

Type: String

volumeld

The ID of the volume.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes the autoEnableIO attribute of the volume vol-12345678.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-12345678
&AUTHPARAMS
```

Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <autoEnableIO>
    <value>>false</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>
```

Example

This example describes the productCodes attribute of the volume vol-12345678.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-12345678
&AUTHPARAMS
```

Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <productCodes>
    <item>
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
```


DescribeVolumeStatus

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, after 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 that 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 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. 323) 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. 538).

MaxResults

The maximum number of volume results returned by `DescribeVolumeStatus` in paginated output. When this parameter is used, the request 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 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 `DescribeVolumeStatus` returns all results. You cannot specify this parameter and the `volume IDs` parameter in the same request.

Type: Integer

Required: No

NextToken

The `NextToken` value to include in a future `DescribeVolumeStatus` request. When the results of the 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: String

Required: No

Volumeld.N

One or more volume IDs.

Default: Describes all your volumes.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `action.code` - The action code for the event (for example, `enable-volume-io`).
- `action.description` - A description of the action.
- `action.event-id` - The event ID associated with the action.
- `availability-zone` - The Availability Zone of the instance.
- `event.description` - A description of the event.
- `event.event-id` - The event ID.
- `event.event-type` - The event type (for `io-enabled`: `passed` | `failed`; for `io-performance`: `io-performance:degraded` | `io-performance:severely-degraded` | `io-performance:stalled`).
- `event.not-after` - The latest end time for the event.
- `event.not-before` - The earliest start time for the event.
- `volume-status.details-name` - The cause for `volume-status.status` (`io-enabled` | `io-performance`).
- `volume-status.details-status` - The status of `volume-status.details-name` (for `io-enabled`: `passed` | `failed`; for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`).
- `volume-status.status` - The status of the volume (`ok` | `impaired` | `warning` | `insufficient-data`).

Type: [Filter \(p. 439\)](#) list

Required: No

Response Elements

The following elements are returned.

nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

volumeStatusSet

A list of volumes.

Type: [VolumeStatusItem \(p. 517\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example describes the status of all the volumes associated with your account.

Sample Request

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

Sample Response

```
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
    </item>
  <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>
</DescribeVolumeStatus>
```

```
        </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>
</DescribeVolumesStatusResponse>
```

Example

This example describes all the volumes in the us-east-1d Availability Zone with failed io-enabled status.

Sample Request

```
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
```

DescribeVolumes

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 volumes, see [Amazon EBS Volumes](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

VolumeId.N

One or more volume IDs.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `attachment.attach-time` - The time stamp when the attachment initiated.
- `attachment.delete-on-termination` - Whether the volume is deleted on instance termination.
- `attachment.device` - The device name that is exposed to the instance (for example, `/dev/sda1`).
- `attachment.instance-id` - The ID of the instance the volume is attached to.
- `attachment.status` - The attachment state (`attaching` | `attached` | `detaching` | `detached`).
- `availability-zone` - The Availability Zone in which the volume was created.
- `create-time` - The time stamp when the volume was created.
- `encrypted` - The encryption status of the volume.
- `size` - The size of the volume, in GiB.
- `snapshot-id` - The snapshot from which the volume was created.
- `status` - The status of the volume (`creating` | `available` | `in-use` | `deleting` | `deleted` | `error`).
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `volume-id` - The volume ID.
- `volume-type` - The Amazon EBS volume type. This can be `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, or `standard` for Magnetic volumes.

Type: [Filter \(p. 439\)](#) list

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. You cannot specify this parameter and the volume IDs parameter in the same request.

Type: Integer

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

Required: No

Response Elements

The following elements are returned.

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: String

requestId

The ID of the request.

Type: String

volumeSet

Type: [Volume \(p. 511\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example describes all volumes associated with your account.

Sample Request

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

Sample Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2014-06-15/">
  <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>
      <volumeType>standard</volumeType>
      <encrypted>>true</encrypted>
    </item>
  </volumeSet>
</DescribeVolumesResponse>
```

DescribeVpcAttribute

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 \(p. 538\)](#).

Attribute

The VPC attribute.

Type: String

Valid Values: `enableDnsSupport` | `enableDnsHostnames`

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

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: [AttributeBooleanValue \(p. 424\)](#)

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: [AttributeBooleanValue \(p. 424\)](#)

requestId

The ID of the request.

Type: String

vpcId

The ID of the VPC.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example describes the `enableDnsSupport` attribute of the specified VPC. The sample response indicates that DNS resolution is supported.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  ?? <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

Example 2

This request describes the `enableDnsHostnames` attribute of the specified VPC. The sample response indicates that DNS hostnames are supported.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  ?? <enableDnsHostnames>
    <value>true</value>
  </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

DescribeVpcClassicLink

Describes the ClassicLink status of one or more VPCs.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `is-classic-link-enabled` - Whether the VPC is enabled for ClassicLink (`true` | `false`).
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: [Filter \(p. 439\)](#) list

Required: No

VpcId.N

One or more VPCs for which you want to describe the ClassicLink status.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpcSet

The ClassicLink status of one or more VPCs.

Type: [VpcClassicLink \(p. 519\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example lists the ClassicLink status of vpc-88888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcClassicLink
&VpcId.1=vpc-88888888
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-0441b461</vpcId>
      <classicLinkEnabled>true</classicLinkEnabled>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcClassicLinkResponse>
```

DescribeVpcPeeringConnections

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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

Filter.N

One or more filters.

- `accepter-vpc-info.cidr-block` - The CIDR block of the peer VPC.
- `accepter-vpc-info.owner-id` - The AWS account ID of the owner of the peer VPC.
- `accepter-vpc-info.vpc-id` - The ID of the peer VPC.
- `expiration-time` - The expiration date and time for the VPC peering connection.
- `requester-vpc-info.cidr-block` - The CIDR block of the requester's VPC.
- `requester-vpc-info.owner-id` - The AWS account ID of the owner of the requester VPC.
- `requester-vpc-info.vpc-id` - The ID of the requester VPC.
- `status-code` - The status of the VPC peering connection (`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.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-peering-connection-id` - The ID of the VPC peering connection.

Type: [Filter \(p. 439\)](#) list

Required: No

VpcPeeringConnectionId.N

One or more VPC peering connection IDs.

Default: Describes all your VPC peering connections.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpcPeeringConnectionSet

Information about the VPC peering connections.

Type: [VpcPeeringConnection](#) (p. 519) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example describes all of your VPC peering connections.

Sample Request

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

Sample Response

```
<DescribeVpcPeeringConnectionsResponse xmlns=http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>123456789012</ownerId>
        <vpcId>vpc-aa22cc33</vpcId>
      </accepterVpcInfo>
      <status>
        <code>pending-acceptance</code>
        <message>Pending Acceptance by 123456789012</message>
      </status>
      <expirationTime>2014-02-17T16:00:50.000Z</expirationTime>
      <tagSet/>
    </item>
  </vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```

Example 2

This example describes all of your VPC peering connections that are in the pending-acceptance state.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=status-code
&Filter.1.Value=pending-acceptance
&AUTHPARAMS
```

Example 3

This example describes all of your VPC peering connections that have the tag Name=Finance or Name=Accounts.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=tag:Name
&Filter.1.Value.1=Finance
&Filter.1.Value.2=Accounts
&AUTHPARAMS
```

Example 4

This example describes all of the VPC peering connections for your specified VPC, vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=requester-vpc-info.vpc-id
&Filter.1.Value=vpc-1a2b3c4d
&AUTHPARAMS
```

DescribeVpcs

Describes one or more of your VPCs.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Filter.N

One or more 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. Must contain the slash followed by one or two digits (for example, `/28`).
- `dhcp-options-id` - The ID of a set of DHCP options.
- `isDefault` - Indicates whether the VPC is the default VPC.
- `state` - The state of the VPC (`pending` | `available`).
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC.

Type: [Filter \(p. 439\)](#) list

Required: No

VpcId.N

One or more VPC IDs.

Default: Describes all your VPCs.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpcSet

Information about one or more VPCs.

Type: [Vpc \(p. 517\)](#) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example describes the specified VPC.

Sample Request

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

Sample Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

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.

Sample Request

```
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
```


DescribeVpnConnections

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Filter.N

One or more filters.

- `customer-gateway-configuration` - The configuration information for the customer gateway.
- `customer-gateway-id` - The ID of a customer gateway associated with the VPN connection.
- `state` - The state of the VPN connection (`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).
- `route.destination-cidr-block` - The destination CIDR block. This corresponds to the subnet used in a customer data center.
- `bgp-asn` - The BGP Autonomous System Number (ASN) associated with a BGP device.
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `type` - The type of VPN connection. Currently the only supported type is `ipsec.1`.
- `vpn-connection-id` - The ID of the VPN connection.
- `vpn-gateway-id` - The ID of a virtual private gateway associated with the VPN connection.

Type: [Filter \(p. 439\)](#) list

Required: No

VpnConnectionId.N

One or more VPN connection IDs.

Default: Describes your VPN connections.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpnConnectionSet

Information about one or more VPN connections.

Type: [VpnConnection](#) (p. 521) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example describes the specified VPN connection. The response includes the customer gateway configuration information. 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 Virtual Private Cloud Network Administrator Guide.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-44a8938f
&AUTHPARAMS
```

Sample Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

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.

Sample Request

```
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
```

DescribeVpnGateways

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Filter.N

One or more filters.

- `attachment.state` - The current state of the attachment between the gateway and the VPC (`attaching` | `attached` | `detaching` | `detached`).
- `attachment.vpc-id` - The ID of an attached VPC.
- `availability-zone` - The Availability Zone for the virtual private gateway.
- `state` - The state of the virtual private gateway (`pending` | `available` | `deleting` | `deleted`).
- `tag:key=value` - The key/value combination of a tag assigned to the resource.
- `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.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `type` - The type of virtual private gateway. Currently the only supported type is `ipsec.1`.
- `vpn-gateway-id` - The ID of the virtual private gateway.

Type: [Filter \(p. 439\)](#) list

Required: No

VpnGatewayId.N

One or more virtual private gateway IDs.

Default: Describes all your virtual private gateways.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

vpnGatewaySet

Information about one or more virtual private gateways.

Type: [VpnGateway](#) (p. 523) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example describes the specified virtual private gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

Sample Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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 2

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.

Sample Request

```
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
```

DetachClassicLinkVpc

Unlinks (detaches) a linked EC2-Classic instance from a VPC. After the instance has been unlinked, the VPC security groups are no longer associated with it. An instance is automatically unlinked from a VPC when it's stopped.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

InstanceId

The ID of the instance to unlink from the VPC.

Type: String

Required: Yes

VpcId

The ID of the VPC to which the instance is linked.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example unlinks instance `i-1a2b3c4d` from VPC `vpc-88888888`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DetachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachClassicLinkVpcResponse>
```


DetachInternetGateway

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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

InternetGatewayId

The ID of the Internet gateway.

Type: String

Required: Yes

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

The example detaches the specified Internet gateway from the specified VPC.

Sample Request

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

Sample Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachInternetGatewayResponse>
```

DetachNetworkInterface

Detaches a network interface from an instance.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AttachmentId

The ID of the attachment.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Force

Specifies whether to force a detachment.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example detaches the specified elastic network interface (ENI).

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
```

Sample Response

```
<DetachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

DetachVolume

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.

If an Amazon EBS volume is the root device of an instance, it can't be detached while the instance is running. To detach the root volume, stop the instance first.

When a volume with an AWS Marketplace product code is detached from an instance, the product code is no longer associated with the instance.

For more information, see [Detaching an Amazon EBS Volume](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Device

The device name.

Type: String

Required: No

Force

Forces detachment if the previous detachment attempt did not occur cleanly (for example, 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

Required: No

InstanceId

The ID of the instance.

Type: String

Required: No

VolumeId

The ID of the volume.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

attachment

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

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example detaches volume vol-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

DetachVpnGateway

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 \(p. 538\)](#).

VpcId

The ID of the VPC.

Type: String

Required: Yes

VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example detaches the specified virtual private gateway from the specified VPC.

Sample Request

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

Sample Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DetachVpnGatewayResponse>
```


DisableVgwRoutePropagation

Disables a virtual private gateway (VGW) from propagating routes to a specified route table of a VPC.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

GatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

RouteTableId

The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example disables the virtual private gateway `vgw-d8e09e8a` from automatically propagating routes to the route table with ID `rtb-c98a35a0`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

Sample Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>4f35alb2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DisableVgwRoutePropagationResponse>
```

DisableVpcClassicLink

Disables ClassicLink for a VPC. You cannot disable ClassicLink for a VPC that has EC2-Classic instances linked to it.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example disables ClassicLink for vpc-88888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVpcClassicLink
&VpcId=vpc-88888888
&AUTHPARAMS
```

Sample Response

```
<DisableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DisableVpcClassicLinkResponse>
```

DisassociateAddress

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-Classical platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

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 \(p. 538\)](#).

AssociationId

[EC2-VPC] The association ID. Required for EC2-VPC.

Type: String

Required: No

PublicIp

[EC2-Classical] The Elastic IP address. Required for EC2-Classical.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example for EC2-Classic

This example disassociates the specified Elastic IP address from the instance in EC2-Classic to which it is associated.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress  
&PublicIp=192.0.2.1  
&AUTHPARAMS
```

Example for EC2-VPC

This example disassociates the specified Elastic IP address from the instance in a VPC to which it is associated.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress  
&AssociationId=eipassoc-aa7486c3  
&AUTHPARAMS
```

DisassociateRouteTable

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AssociationId

The association ID representing the current association between the route table and subnet.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example disassociates the specified route table from the subnet it's associated to.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-fdad4894
&AUTHPARAMS
```

Sample Response

```
<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DisassociateRouteTableResponse>
```


EnableVgwRoutePropagation

Enables a virtual private gateway (VGW) to propagate routes to the specified route table of a VPC.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

GatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

RouteTableId

The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example enables the specified virtual private gateway to propagate routes automatically to the route table with the ID `rtb-c98a35a0`.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

Sample Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>4f35alb2-c2c3-4093-b51f-abb9d7311990</requestId>  
  <return>true</return>  
</EnableVgwRoutePropagation>
```

EnableVolumeIO

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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VolumeId

The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example enables the I/O operations of the volume vol-8888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-8888888
&AUTHPARAMS
```

Sample Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</EnableVolumeIOResponse>
```

EnableVpcClassicLink

Enables a VPC for ClassicLink. You can then link EC2-Classic instances to your ClassicLink-enabled VPC to allow communication over private IP addresses. You cannot enable your VPC for ClassicLink if any of your VPC's route tables have existing routes for address ranges within the 10.0.0.0/8 IP address range, excluding local routes for VPCs in the 10.0.0.0/16 and 10.1.0.0/16 IP address ranges. For more information, see [ClassicLink](#) in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example enables vpc-8888888 for ClassicLink.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS
```

Sample Response

```
<EnableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVpcClassicLinkResponse>
```

GetConsoleOutput

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 instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a computer. 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 includes output from the EC2Config service.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceId

The ID of the instance.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instanceId

The ID of the instance.

Type: String

output

The console output, Base64 encoded.

Type: String

requestId

The ID of the request.

Type: String

timestamp

The time the output was last updated.

Type: DateTime

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example retrieves the console output for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lubiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDlwMDUwNzI3IChSZWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDlwMDYKQklPUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFWOgpY
ZW46IDAwMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhdAwMDAwIChlc2FibGUpcjk4ME1CIEhJ
R0hNRU0gYXZhaWxhYmxiLgo3MjdNQiBMTldNRU0gYXZhaWxhYmxiLgpoOWCAoRXhlY3V0ZSBEaXNh
YmxiLKSXBwcm90ZWN0aW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRlY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbGlzdHMKS2VybVVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCBYZXN0b3JlLi4uIGRvbmUuCG==</output>
</GetConsoleOutputResponse>
```


GetPasswordData

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 \(p. 538\)](#).

InstancedId

The ID of the Windows instance.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instancedId

The ID of the Windows instance.

Type: String

passwordData

The password of the instance.

Type: String

requestId

The ID of the request.

Type: String

timestamp

The time the data was last updated.

Type: DateTime

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example returns the encrypted version of the administrator password for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-2574e22a</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
```

ImportInstance

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 in the EC2 command line tools. For more information, see [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Description

A description for the instance being imported.

Type: String

Required: No

DiskImage.N

Type: [DiskImage \(p. 432\)](#) list

Required: No

DryRun

Type: Boolean

Required: No

LaunchSpecification

Type: [ImportInstanceLaunchSpecification \(p. 445\)](#)

Required: No

Platform

The instance operating system.

Type: String

Valid Values: windows

Required: Yes

Response Elements

The following elements are returned.

conversionTask

Type: [ConversionTask \(p. 429\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

Sample Request

```
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&?Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

Sample Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <conversionTask>
    <conversionTaskId>import-i-ffvko9js</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importInstance>
      <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?AWSAccessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signature=5snej01TlTtL0uR7KExtEXAMPLE%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>
```

```
</conversionTask>  
</ImportInstanceResponse>
```

ImportKeyPair

Imports the public key from an RSA key pair that you created with a third-party tool. Compare this with [CreateKeyPair \(p. 72\)](#), 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.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

KeyName

A unique name for the key pair.

Type: String

Required: Yes

PublicKeyMaterial

The public key. You must base64 encode the public key material before sending it to AWS.

Type: String

Required: Yes

Response Elements

The following elements are returned.

keyFingerprint

The MD5 public key fingerprint as specified in section 4 of RFC 4716.

Type: String

keyName

The key pair name you provided.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example imports the public key named my-key-pair.

Sample Request

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAfICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAGTAldBMRAdG9YDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBASTC0lBTSBDb25zb2x1MRIwEAYDVQQDEw1UZXR0Q21sYWVWbWxHZAAd
BgkqhkiG9w0BCQEWEG5vb25lQGFTYXpvi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRAdG9YD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBASTC0lBTSBDb25z
b2x1MRIwEAYDVQQDEw1UZXR0Q21sYWVWbWxHZAAdBgkqhkiG9w0BCQEWEG5vb25lQGFT
YXpvi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLyGVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUsQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZnzcVQAaRHhdlQWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJiLJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
&AUTHPARAMS
```

Sample Response

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

ImportVolume

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 [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AvailabilityZone

The Availability Zone for the resulting Amazon EBS volume.

Type: String

Required: Yes

Description

An optional description for the volume being imported.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Image

Type: [DiskImageDetail \(p. 434\)](#)

Required: Yes

Volume

Type: [VolumeDetail \(p. 514\)](#)

Required: Yes

Response Elements

The following elements are returned.

conversionTask

Type: [ConversionTask \(p. 429\)](#)

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the AWS us-east-1 region.

Sample Request

```
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>
```

Sample Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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?AWSAc
          cessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signa
          ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
        </importManifestUrl>
        <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
      </image>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
    <statusMessage/>
  </conversionTask>
</ImportVolumeResponse>
```

ModifyImageAttribute

Modifies the specified attribute of the specified AMI. You can specify only one attribute at a time.

Note

AWS Marketplace product codes cannot be modified. Images with an AWS Marketplace product code cannot be made public.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The name of the attribute to modify.

Type: String

Required: No

Description

A description for the AMI.

Type: [AttributeValue \(p. 424\)](#)

Required: No

ImageId

The ID of the AMI.

Type: String

Required: Yes

LaunchPermission

A launch permission modification.

Type: [LaunchPermissionModifications \(p. 470\)](#)

Required: No

OperationType

The operation type.

Type: String

Required: No

ProductCode.N

One or more product codes. After you add a product code to an AMI, it can't be removed. This is only valid when modifying the `productCodes` attribute.

Type: String list

Required: No

UserGroup.N

One or more user groups. This is only valid when modifying the `launchPermission` attribute.

Type: String list

Required: No

UserId.N

One or more AWS account IDs. This is only valid when modifying the `launchPermission` attribute.

Type: String list

Required: No

Value

The value of the attribute being modified. This is only valid when modifying the `description` attribute.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

This example makes the AMI public (for example, so any AWS account can use it).

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyImageAttributeResponse>
```

Example 2

This example makes the AMI private (for example, so that only you as the owner can use it).

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

Example 3

This example grants launch permission to the AWS account with ID 111122223333.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=111122223333
&AUTHPARAMS
```

Example 4

This example adds the 774F4FF8 product code to the ami-61a54008 AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&ProductCode.1=774F4FF8
&AUTHPARAMS
```

Example 5

This example changes the description of the AMI to New Description.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&Description.Value=New Description
&AUTHPARAMS
```

ModifyInstanceAttribute

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

To modify some attributes, the instance must be stopped. For more information, see [Modifying Attributes of a Stopped Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

SourceDestCheck

Specifies whether source/destination checking is enabled. A value of `true` means that checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

Attribute

The name of the attribute.

Type: String

Valid Values: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport`

Required: No

BlockDeviceMapping.N

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.

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 Elastic Compute Cloud User Guide*.

Type: [InstanceBlockDeviceMappingSpecification \(p. 456\)](#) list

Required: No

DisableApiTermination

If the value is `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

DryRun

Type: Boolean

Required: No

EbsOptimized

Specifies 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: [AttributeBooleanValue](#) (p. 424)

Required: No

GroupId.N

[EC2-VPC] Changes the security groups of the instance. 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.

Type: String list

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

InstanceInitiatedShutdownBehavior

Specifies whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: [AttributeValue](#) (p. 424)

Required: No

InstanceType

Changes the instance type to the specified value. For more information, see [Instance Types](#). If the instance type is not valid, the error returned is `InvalidInstanceAttributeValue`.

Type: [AttributeValue](#) (p. 424)

Required: No

Kernel

Changes the instance's kernel to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#).

Type: [AttributeValue](#) (p. 424)

Required: No

Ramdisk

Changes the instance's RAM disk to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#).

Type: [AttributeValue](#) (p. 424)

Required: No

SriovNetSupport

Set to `simple` to enable enhanced networking for the instance.

There is no way to disable enhanced networking at this time.

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: [AttributeValue](#) (p. 424)

Required: No

UserData

Changes the instance's user data to the specified value.

Type: [AttributeValue](#) (p. 424)

Required: No

Value

A new value for the attribute. Use only with the `kernel`, `ramdisk`, `userData`, `disableApiTermination`, or `instanceInitiateShutdownBehavior` attribute.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example changes the instance type of the specified instance. The instance must be in the stopped state.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceType.Value=m1.small
&AUTHPARAMS
```

Sample Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

Example 2

This example changes the InstanceInitiatedShutdownBehavior attribute of the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceInitiatedShutdownBehavior.Value=terminate
&AUTHPARAMS
```

Sample Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

Example 3

This example changes the DisableApiTermination attribute of the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&DisableApiTermination.Value=true
&AUTHPARAMS
```

Sample Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```


ModifyNetworkInterfaceAttribute

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 \(p. 538\)](#).

Attachment

Information about the interface attachment. If modifying the 'delete on termination' attribute, you must specify the ID of the interface attachment.

Type: [NetworkInterfaceAttachmentChanges \(p. 479\)](#)

Required: No

Description

A description for the network interface.

Type: [AttributeValue \(p. 424\)](#)

Required: No

DryRun

Type: Boolean

Required: No

SecurityGroupIds

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.

Type: String list

Required: No

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

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. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example sets source/destination checking to false for the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS
```

Sample Response

```
<ModifyNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2014-10-01/">
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

ModifyReservedInstances

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 Elastic Compute Cloud User Guide for Linux.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

ReservedInstancesId.N

The IDs of the Reserved Instances to modify.

Type: String list

Required: Yes

ClientToken

A unique, case-sensitive token you provide to ensure idempotency of your modification request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

ReservedInstancesConfigurationSetItem.N

The configuration settings for the Reserved Instances to modify.

Type: [ReservedInstancesConfiguration \(p. 489\)](#) list

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservedInstancesModificationId

The ID for the modification.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyReservedInstances
&ClientToken=myClientToken
&ReservedInstancesConfigurationSetItemType.1.AvailabilityZone=us-east-1a
&ReservedInstancesConfigurationSetItemType.1.InstanceCount=1
&ReservedInstancesConfigurationSetItemType.1.Platform=EC2-VPC
&ReservedInstancesConfigurationSetItemType.1.InstanceType=m1.small
&ReservedInstancesId.0=d16f7a91-4d0f-4f19-9d7f-a74d26b1ccfa
&AUTHPARAMS
```

Sample Response

```
<ModifyReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>bef729b6-0731-4489-8881-2258746ae163</requestId>
  <reservedInstancesModificationId>rimod-3aae219d-3d63-47a9-a7e9-e764example</re
  servedInstancesModificationId>
</ModifyReservedInstancesResponse>
```

ModifySnapshotAttribute

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.

For more information on modifying snapshot permissions, see [Sharing Snapshots](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Note

Snapshots with AWS Marketplace product codes cannot be made public.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The snapshot attribute to modify.

Type: String

Valid Values: `productCodes` | `createVolumePermission`

Required: No

CreateVolumePermission

A JSON representation of the snapshot attribute modification.

Type: [CreateVolumePermissionModifications \(p. 430\)](#)

Required: No

UserGroup.N

The group to modify for the snapshot.

Type: String list

Required: No

OperationType

The type of operation to perform to the attribute.

Type: String

Required: No

SnapshotId

The ID of the snapshot.

Type: String

Required: Yes

UserId.N

The account ID to modify for the snapshot.

Type: String list

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example makes the `snap-1a2b3c4d` snapshot public, and gives the account with ID `111122223333` permission to create volumes from the snapshot.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

Example

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.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

ModifySubnetAttribute

Modifies a subnet attribute.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

MapPublicIpOnLaunch

Specify `true` to indicate that instances launched into the specified subnet should be assigned public IP address.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

SubnetId

The ID of the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example modifies the attribute for subnet-1a2b3c4d to specify that all instances launched into this subnet are assigned a public IP address.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
```



```
&MapPublicIpOnLaunch.Value=true  
&AUTHPARAMS
```

ModifyVolumeAttribute

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 enabling I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations. We recommend that you change this only for boot volumes or for volumes that are stateless or disposable.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AutoEnableIO

Indicates whether the volume should be auto-enabled for I/O operations.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

VolumeId

The ID of the volume.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example modifies the attribute of the volume vol-12345678.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-12345678
&AutoEnableIO.Value=true
&AUTHPARAMS
```

Sample Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <return>true</return>
</ModifyVolumeAttributeResponse>
```

ModifyVpcAttribute

Modifies the specified attribute of the specified VPC.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

EnableDnsHostnames

Indicates whether the instances launched in the VPC get DNS hostnames. If enabled, instances in the VPC get DNS hostnames; otherwise, they do not.

You can only enable DNS hostnames if you also enable DNS support.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

EnableDnsSupport

Indicates whether the DNS resolution is supported for the VPC. If enabled, 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. If disabled, the Amazon provided DNS service in the VPC that resolves public DNS hostnames to IP addresses is not enabled.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example disables support for DNS hostnames in the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute  
&VpcId=vpc-1a2b3c4d  
&EnableDnsHostnames.Value=false  
&AUTHPARAMS
```

MonitorInstances

Enables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceId.N

One or more instance IDs.

Type: String list

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instancesSet

Monitoring information for one or more instances.

Type: [InstanceMonitoring \(p. 457\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example enables monitoring for two instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

Sample Response

```
<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

PurchaseReservedInstancesOffering

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.

Use [DescribeReservedInstancesOfferings](#) (p. 242) to get a list of Reserved Instance offerings that match your specifications. After you've purchased a Reserved Instance, you can check for your new Reserved Instance with [DescribeReservedInstances](#) (p. 234).

For more information, see [Reserved Instances](#) and [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

InstanceCount

The number of Reserved Instances to purchase.

Type: Integer

Required: Yes

ReservedInstancesOfferingId

The ID of the Reserved Instance offering to purchase.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

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: [ReservedInstanceLimitPrice](#) (p. 486)

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservedInstancesId

The IDs of the purchased Reserved Instances.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example uses a limit price to limit the total purchase order of Reserved Instances from Reserved Instance Marketplace.

Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

Example 2

This example illustrates a purchase of a Reserved Instances offering.

Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS
```

Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

RebootInstances

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.

If a Linux/Unix instance does not cleanly shut down within four minutes, Amazon EC2 performs a hard reboot.

For more information about troubleshooting, see [Getting Console Output and Rebooting Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceIds.N

One or more instance IDs.

Type: String list

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example reboots two instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1a2b3c4d
&InstanceId.2=i-4d3acf62
&AUTHPARAMS
```

Sample Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RebootInstancesResponse>
```

RegisterImage

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 Elastic Compute Cloud User Guide*.

Note

For Amazon EBS-backed instances, `RegisterImage` creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use `RegisterImage` to create an Amazon EBS-backed AMI from a snapshot of a root device volume. For more information, see [Launching an Instance from a Snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

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 where 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 \(p. 538\)](#).

ImageLocation

The full path to your AMI manifest in Amazon S3 storage.

Type: String

Required: No

Architecture

The architecture of the AMI.

Default: For Amazon EBS-backed AMIs, `i386`. For instance store-backed AMIs, the architecture specified in the manifest file.

Type: String

Valid Values: `i386` | `x86_64`

Required: No

BlockDeviceMapping.N

One or more block device mapping entries.

Type: [BlockDeviceMapping \(p. 425\)](#) list

Required: No

Description

A description for your AMI.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

KernelId

The ID of the kernel.

Type: String

Required: No

Name

A name for your AMI.

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

Type: String

Required: Yes

RamdiskId

The ID of the RAM disk.

Type: String

Required: No

RootDeviceName

The name of the root device (for example, `/dev/sda1`, or `/dev/xvda`).

Type: String

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.

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

Required: No

VirtualizationType

The type of virtualization.

Default: `paravirtual`

Type: String

Required: No

Response Elements

The following elements are returned.

imageId

The ID of the newly registered AMI.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example registers the AMI specified in the my-new-image.manifest.xml manifest file, located in the bucket called myawsbucket.

Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

Example 2

This example specifies a snapshot for the root device of an Amazon EBS-backed AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&Name=MyImage
&AUTHPARAMS
```

Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

Example 3

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.

Sample Request

```
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
```

Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

RejectVpcPeeringConnection

Rejects a VPC peering connection request. The VPC peering connection must be in the `pending-acceptance` state. Use the [DescribeVpcPeeringConnections](#) (p. 292) request to view your outstanding VPC peering connection requests. To delete an active VPC peering connection, or to delete a VPC peering connection request that you initiated, use [DeleteVpcPeeringConnection](#) (p. 156).

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

DryRun

Type: Boolean

Required: No

VpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example rejects the specified VPC peering connection request.

Sample Request

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


Sample Response

```
<RejectVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</RejectVpcPeeringConnectionResponse>
```

ReleaseAddress

Releases the specified Elastic IP address.

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.

[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](#) (p. 317).

[Nondefault VPC] You must use [DisassociateAddress](#) (p. 317) 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. 538).

AllocationId

[EC2-VPC] The allocation ID. Required for EC2-VPC.

Type: String

Required: No

PublicIp

[EC2-Classic] The Elastic IP address. Required for EC2-Classic.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example for EC2-Classic

This example releases the specified Elastic IP address for EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress  
&PublicIp=192.0.2.1  
&AUTHPARAMS
```

Example for EC2-VPC

This example releases the specified Elastic IP address for EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress  
&AllocationId=eipalloc-5723d13e  
&AUTHPARAMS
```

ReplaceNetworkAclAssociation

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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AssociationId

The ID of the current association between the original network ACL and the subnet.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

NetworkAclId

The ID of the new network ACL to associate with the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

newAssociationId

The ID of the new association.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```

Sample Response

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

ReplaceNetworkAclEntry

Replaces an entry (rule) in a network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CidrBlock

The network range to allow or deny, in CIDR notation.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Egress

Indicates whether to replace the egress rule.

Default: If no value is specified, we replace the ingress rule.

Type: Boolean

Required: Yes

Icmp

ICMP protocol: The ICMP type and code. Required if specifying 1 (ICMP) for the protocol.

Type: [IcmpTypeCode \(p. 441\)](#)

Required: No

NetworkAclId

The ID of the ACL.

Type: String

Required: Yes

PortRange

TCP or UDP protocols: The range of ports the rule applies to. Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

Type: [PortRange \(p. 481\)](#)

Required: No

Protocol

The IP protocol. You can specify `all` or `-1` to mean all protocols.

Type: String

Required: Yes

RuleAction

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: allow | deny

Required: Yes

RuleNumber

The rule number of the entry to replace.

Type: Integer

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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.

Sample Request

```
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
```

Sample Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<return>>true</return>  
</ReplaceNetworkAclEntryResponse>
```


ReplaceRoute

Replaces an existing route within a route table in a VPC. You must provide only one of the following: Internet gateway or virtual private gateway, NAT instance, VPC peering connection, or network interface.

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

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

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

Required: Yes

DryRun

Type: Boolean

Required: No

GatewayId

The ID of an Internet gateway or virtual private gateway.

Type: String

Required: No

InstanceId

The ID of a NAT instance in your VPC.

Type: String

Required: No

NetworkInterfaceId

The ID of a network interface.

Type: String

Required: No

RouteTableId

The ID of the route table.

Type: String

Required: Yes

VpcPeeringConnectionId

The ID of a VPC peering connection.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

Sample Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
```

ReplaceRouteTableAssociation

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 Virtual Private Cloud User Guide*.

You can also use `ReplaceRouteTableAssociation` 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 \(p. 538\)](#).

AssociationId

The association ID.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

RouteTableId

The ID of the new route table to associate with the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

newAssociationId

The ID of the new association.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example starts with a route table associated with a subnet, and a corresponding association ID `rtbassoc-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.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-f8ad4891
&RouteTableId=rtb-f9ad4890
&AUTHPARAMS
```

Sample Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

ReportInstanceStatus

Submits feedback about the status of an instance. The instance must be in the `running` state. If your experience with the instance differs from the instance status returned by [DescribeInstanceStatus](#) (p. 202), use [ReportInstanceStatus](#) (p. 381) to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

Use of this action does not change the value returned by [DescribeInstanceStatus](#) (p. 202).

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

Description

Descriptive text about the health state of your instance.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

EndTime

The time at which the reported instance health state ended.

Type: DateTime

Required: No

InstanceId.N

One or more instances.

Type: String list

Required: Yes

ReasonCode.N

One or more reason codes that describes the health state of your instance.

- `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`: [explain using the description parameter]

Type: String list

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

StartTime

The time at which the reported instance health state began.

Type: `DateTime`

Required: No

Status

The status of all instances listed.

Type: `String`

Valid Values: `ok` | `impaired`

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: `String`

return

Is `true` if the request succeeds, and an error otherwise.

Type: `Boolean`

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example 1

This example reports instance health state for two instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.1=i-9440effb
&InstanceId.2=i-0cf27c63
&AUTHPARAMS
```

Example 2

This example reports instance health state for two instances with reason codes.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
&Status=impaired
&InstanceId.1=i-9440effb
&InstanceId.2=i-0cf27c63
&ReasonCode.1=instance-performance-network
&ReasonCode.2=instance-performance-disk
&AUTHPARAMS
```

RequestSpotInstances

Creates a Spot Instance request. Spot Instances are instances that Amazon EC2 launches when the bid 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, see [Spot Instance Requests](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

AvailabilityZoneGroup

The user-specified name for a logical grouping of bids.

When you specify an Availability Zone group 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 the choice of Availability Zone is not. The group applies only to bids for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same Availability Zone group 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 (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 you specified the same Availability Zone group.

Default: Instances are launched in any available Availability Zone.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

InstanceCount

The maximum number of Spot Instances to launch.

Default: 1

Type: Integer

Required: No

LaunchGroup

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Default: Instances are launched and terminated individually

Type: String

Required: No

LaunchSpecification

The launch specification.

Type: [LaunchSpecification \(p. 470\)](#)

Required: No

SpotPrice

The maximum hourly price (bid) for any Spot Instance launched to fulfill the request.

Type: String

Required: Yes

Type

The Spot Instance request type.

Default: `one-time`

Type: String

Valid Values: `one-time` | `persistent`

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.

Default: The request is effective indefinitely.

Type: DateTime

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.

Default: The request is effective indefinitely.

Type: DateTime

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

spotInstanceRequestSet

One or more Spot Instance requests.

Type: [SpotInstanceRequest](#) (p. 502) list

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example creates a Spot Instance request for two m1.small instances and associates an IAM instance profile called s3access with them.

Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroup.1=webserv
&LaunchSpecification.InstanceType=m1.small
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

Sample Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.5</spotPrice>
      <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>my-key-pair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>webserv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <blockDeviceMapping/>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
        <ebsOptimized>>false</ebsOptimized>
      </launchSpecification>
    </item>
  </spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

```
<createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>  
<productDescription>Linux/UNIX</productDescription>  
</item>  
</spotInstanceRequestSet>  
</RequestSpotInstancesResponse>
```

ResetImageAttribute

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 \(p. 538\)](#).

Attribute

The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Valid Values: `launchPermission`

Required: Yes

ImageId

The ID of the AMI.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example resets the `launchPermission` attribute for the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

Sample Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</ResetImageAttributeResponse>
```

ResetInstanceAttribute

Resets an attribute of an instance to its default value. To reset the `kernel` or `ramdisk`, 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 Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The attribute to reset.

Type: String

Valid Values: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport`

Required: Yes

DryRun

Type: Boolean

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example resets the sourceDestCheck attribute.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1a2b3c4d
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

ResetNetworkInterfaceAttribute

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 \(p. 538\)](#).

DryRun

Type: Boolean

Required: No

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

SourceDestCheck

The source/destination checking attribute. Resets the value to `true`.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example resets the `sourceDestCheck` attribute for the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<ResetNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-
10-01/">
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
  <return>true</return>
</ResetNetworkInterfaceAttributeResponse>
```

ResetSnapshotAttribute

Resets permission settings for the specified snapshot.

For more information on modifying snapshot permissions, see [Sharing Snapshots](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

Attribute

The attribute to reset (currently only the attribute for permission to create volumes can be reset).

Type: String

Valid Values: `productCodes` | `createVolumePermission`

Required: Yes

SnapshotId

The ID of the snapshot.

Type: String

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example resets the permissions for snap-1a2b3c4d, making it a private snapshot that can only be used by the account that created it.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=createVolumePermission
&AUTHPARAMS
```

Sample Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

RevokeSecurityGroupEgress

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 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, a small delay might occur.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CidrIp

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

Type: String

Required: No

DryRun

Type: Boolean

Required: No

FromPort

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

Type: Integer

Required: No

GroupId

The ID of the security group.

Type: String

Required: Yes

IpPermissions.N

A set of IP permissions. You can't specify a destination security group and a CIDR IP address range.

Type: [IpPermission \(p. 467\)](#) list

Required: No

IpProtocol

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see [Protocol Numbers](#)). Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName

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

Type: String

Required: No

SourceSecurityGroupOwnerId

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

Type: String

Required: No

ToPort

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

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example 1

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.

Sample Request

```
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 2

This example revokes the access that the specified security group has to the security group with the ID sg-9a8d7f5c on TCP port 1433.

Sample Request

```
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
```

RevokeSecurityGroupIngress

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.

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, a small delay might occur.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

CidrIp

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

Type: String

Required: No

FromPort

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

Type: Integer

Required: No

GroupId

The ID of the security group.

Type: String

Required: No

GroupName

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

Type: String

Required: No

IpPermissions.N

A set of IP permissions. You can't specify a source security group and a CIDR IP address range.

Type: [IpPermission \(p. 467\)](#) list

Required: No

IpProtocol

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see [Protocol Numbers](#)). Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName

[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

Required: No

SourceSecurityGroupOwnerId

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

Type: String

Required: No

ToPort

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

Type: Integer

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

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.

Sample Request

```
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
```

Sample Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</RevokeSecurityGroupIngressResponse>
```

RunInstances

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. 208).

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 Elastic Compute Cloud User Guide*.

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 Elastic Compute Cloud User Guide*.

You can provide optional user data when launching an instance. For more information, see [Instance Metadata](#) in the *Amazon Elastic Compute Cloud User Guide*.

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 Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters](#) (p. 538).

BlockDeviceMapping.N

The block device mapping.

Type: [BlockDeviceMapping](#) (p. 425) list

Required: No

ImageId

The ID of the AMI, which you can get by calling [DescribeImages](#) (p. 194).

Type: String

Required: Yes

InstanceType

The instance type. For more information, see [Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*.

Default: `m1.small`

Type: String

Valid Values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `t2.micro` | `t2.small` | `t2.medium` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `hi1.4xlarge` | `hs1.8xlarge` | `c1.medium` | `c1.xlarge` | `c3.large` | `c3.xlarge` | `c3.2xlarge` | `c3.4xlarge` | `c3.8xlarge` | `c4.large` | `c4.xlarge` | `c4.2xlarge` | `c4.4xlarge` | `c4.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge`

| g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge
| r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

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 Elastic Compute Cloud User Guide.

Type: String

Required: No

KeyName

The name of the key pair. You can create a key pair using [CreateKeyPair \(p. 72\)](#) or [ImportKeyPair \(p. 334\)](#).

Important

If you launch an instance without specifying a key pair, you can't connect to the instance.

Type: String

Required: No

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`.

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.

Type: Integer

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.

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.

Type: Integer

Required: Yes

Monitoring

The monitoring for the instance.

Type: [RunInstancesMonitoringEnabled \(p. 497\)](#)

Required: No

Placement

The placement for the instance.

Type: [Placement \(p. 480\)](#)

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 Elastic Compute Cloud User Guide.

Type: String

Required: No

SecurityGroupIds

One or more security group IDs. You can create a security group using [CreateSecurityGroup](#) (p. 95).

Default: Amazon EC2 uses the default security group.

Type: String list

Required: No

SecurityGroup.N

[EC2-Classic, default VPC] One or more security group names. For a nondefault VPC, you must use security group IDs instead.

Default: Amazon EC2 uses the default security group.

Type: String list

Required: No

SubnetId

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Required: No

UserData

The Base64-encoded MIME user data for the instances.

Type: String

Required: No

AdditionalInfo

Reserved.

Type: String

Required: No

ClientToken

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Constraints: Maximum 64 ASCII characters

Type: String

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](#) (p. 341). Alternatively, if you set

`InstanceInitiatedShutdownBehavior` to `terminate`, you can terminate the instance by running the shutdown command from the instance.

Default: `false`

Type: Boolean

Required: No

DryRun

Type: Boolean

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.

Default: `false`

Type: Boolean

Required: No

IamInstanceProfile

The IAM instance profile.

Type: [IamInstanceProfileSpecification](#) (p. 440)

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).

Default: `stop`

Type: String

Valid Values: `stop` | `terminate`

Required: No

NetworkInterface.N

One or more network interfaces.

Type: [InstanceNetworkInterfaceSpecification](#) (p. 461) list

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.

Default: We select an IP address from the IP address range of the subnet.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

reservation

One or more reservations.

Type: [Reservation](#) (p. 485)

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

This example launches three instances using the AMI with the ID ami-60a54009.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS
```

This example launches an m1.small instance into a subnet. Because no network interface is specified, the default network interface is used.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

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).

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.PrivateIpAddresses.1.Primary=true
&NetworkInterface.1.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.106
&NetworkInterface.1.PrivateIpAddresses.2.Primary=false
&NetworkInterface.1.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.107
&NetworkInterface.1.PrivateIpAddresses.3.Primary=false
&NetworkInterface.1.PrivateIpAddresses.3.PrivateIpAddress=10.0.2.108
&NetworkInterface.1.SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

This example launches a Dedicated Instance into the specified subnet.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2alfec43
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&AUTHPARAMS
```

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.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&MaxCount=1
&MinCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.AssociatePublicIpAddress=true
&NetworkInterface.1.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

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 GB Amazon EBS volume mapped to /dev/sdf.

Sample Request

```
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
```


StartInstances

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 [Stopping Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceIds.N

One or more instance IDs.

Type: String list

Required: Yes

AdditionalInfo

Reserved.

Type: String

Required: No

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instancesSet

Information about one or more started instances.

Type: [InstanceStateChange \(p. 463\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example starts the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

StopInstances

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 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, the root device and any other devices attached to the instance persist. When you terminate an instance, the root device and any other devices attached during the instance launch are automatically deleted. For more information about the differences between stopping and terminating instances, see [Instance Lifecycle](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information about troubleshooting, see [Troubleshooting Stopping Your Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceIds.N

One or more instance IDs.

Type: String list

Required: Yes

DryRun

Type: Boolean

Required: No

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.

Default: `false`

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instancesSet

Information about one or more stopped instances.

Type: [InstanceStateChange](#) (p. 463) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 554).

Examples

Example

This example stops the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

TerminateInstances

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).

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 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, the root device and any other devices attached to the instance persist. When you terminate an instance, the root device and any other devices attached during the instance launch are automatically deleted. For more information about the differences between stopping and terminating instances, see [Instance Lifecycle](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information about troubleshooting, see [Troubleshooting Terminating Your Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceIds.N

One or more instance IDs.

Type: String list

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instancesSet

Information about one or more terminated instances.

Type: [InstanceStateChange \(p. 463\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example terminates the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-3ea74257
&AUTHPARAMS
```

Sample Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

UnassignPrivateIpAddresses

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 \(p. 538\)](#).

NetworkInterfaceId

The ID of the network interface.

Type: String

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: String list

Required: Yes

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

The following example unassigns two secondary private IP addresses from the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.1=10.0.2.60
```

```
&PrivateIpAddress.2=10.0.2.65  
&AUTHPARAMS
```

Sample Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</UnassignPrivateIpAddresses>
```


UnmonitorInstances

Disables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see [Common Query Parameters \(p. 538\)](#).

InstanceId.N

One or more instance IDs.

Type: String list

Required: Yes

DryRun

Type: Boolean

Required: No

Response Elements

The following elements are returned.

instancesSet

Monitoring information for one or more instances.

Type: [InstanceMonitoring \(p. 457\)](#) list

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Client Errors \(p. 554\)](#).

Examples

Example

This example disables monitoring for the specified instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

Sample Response

```
<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2014-10-01/">
  <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>
```

Data Types

The Amazon Elastic Compute Cloud API contains several data types that various actions use. This section describes each data type in detail.

Note

The order of each element in the response is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [AccountAttribute](#) (p. 422)
- [AccountAttributeValue](#) (p. 422)
- [Address](#) (p. 423)
- [AttributeBooleanValue](#) (p. 424)
- [AttributeValue](#) (p. 424)
- [AvailabilityZone](#) (p. 424)
- [AvailabilityZoneMessage](#) (p. 425)
- [BlockDeviceMapping](#) (p. 425)
- [BundleTask](#) (p. 426)
- [BundleTaskError](#) (p. 427)
- [CancelledSpotInstanceRequest](#) (p. 428)
- [ClassicLinkInstance](#) (p. 428)
- [ConversionTask](#) (p. 429)
- [CreateVolumePermission](#) (p. 430)
- [CreateVolumePermissionModifications](#) (p. 430)
- [CustomerGateway](#) (p. 431)
- [DhcpConfiguration](#) (p. 431)
- [DhcpOptions](#) (p. 432)
- [DiskImage](#) (p. 432)
- [DiskImageDescription](#) (p. 433)
- [DiskImageDetail](#) (p. 434)
- [DiskImageVolumeDescription](#) (p. 434)
- [EbsBlockDevice](#) (p. 435)
- [EbsInstanceBlockDevice](#) (p. 436)

- [EbsInstanceBlockDeviceSpecification](#) (p. 437)
- [ExportTask](#) (p. 437)
- [ExportToS3Task](#) (p. 438)
- [ExportToS3TaskSpecification](#) (p. 439)
- [Filter](#) (p. 439)
- [GroupIdentifier](#) (p. 440)
- [IamInstanceProfile](#) (p. 440)
- [IamInstanceProfileSpecification](#) (p. 440)
- [IcmpTypeCode](#) (p. 441)
- [Image](#) (p. 441)
- [ImageAttribute](#) (p. 444)
- [ImportInstanceLaunchSpecification](#) (p. 445)
- [ImportInstanceTaskDetails](#) (p. 447)
- [ImportInstanceVolumeDetailItem](#) (p. 447)
- [ImportVolumeTaskDetails](#) (p. 448)
- [Instance](#) (p. 449)
- [InstanceAttribute](#) (p. 453)
- [InstanceBlockDeviceMapping](#) (p. 455)
- [InstanceBlockDeviceMappingSpecification](#) (p. 456)
- [InstanceCount](#) (p. 456)
- [InstanceExportDetails](#) (p. 457)
- [InstanceMonitoring](#) (p. 457)
- [InstanceNetworkInterface](#) (p. 458)
- [InstanceNetworkInterfaceAssociation](#) (p. 459)
- [InstanceNetworkInterfaceAttachment](#) (p. 460)
- [InstanceNetworkInterfaceSpecification](#) (p. 461)
- [InstancePrivateIpAddress](#) (p. 462)
- [InstanceState](#) (p. 463)
- [InstanceStateChange](#) (p. 463)
- [InstanceStatus](#) (p. 464)
- [InstanceStatusDetails](#) (p. 465)
- [InstanceStatusEvent](#) (p. 465)
- [InstanceStatusSummary](#) (p. 466)
- [InternetGateway](#) (p. 466)
- [InternetGatewayAttachment](#) (p. 467)
- [IpPermission](#) (p. 467)
- [IpRange](#) (p. 468)
- [KeyPair](#) (p. 468)
- [KeyPairInfo](#) (p. 469)
- [LaunchPermission](#) (p. 469)
- [LaunchPermissionModifications](#) (p. 470)
- [LaunchSpecification](#) (p. 470)
- [Monitoring](#) (p. 472)
- [NetworkAcl](#) (p. 473)
- [NetworkAclAssociation](#) (p. 474)
- [NetworkAclEntry](#) (p. 474)

- [NetworkInterface](#) (p. 475)
- [NetworkInterfaceAssociation](#) (p. 477)
- [NetworkInterfaceAttachment](#) (p. 478)
- [NetworkInterfaceAttachmentChanges](#) (p. 479)
- [NetworkInterfacePrivateIpAddress](#) (p. 479)
- [Placement](#) (p. 480)
- [PlacementGroup](#) (p. 480)
- [PortRange](#) (p. 481)
- [PriceSchedule](#) (p. 481)
- [PriceScheduleSpecification](#) (p. 482)
- [PricingDetail](#) (p. 483)
- [PrivateIpAddressSpecification](#) (p. 483)
- [ProductCode](#) (p. 484)
- [PropagatingVgw](#) (p. 484)
- [RecurringCharge](#) (p. 484)
- [Region](#) (p. 485)
- [Reservation](#) (p. 485)
- [ReservedInstanceLimitPrice](#) (p. 486)
- [ReservedInstances](#) (p. 487)
- [ReservedInstancesConfiguration](#) (p. 489)
- [ReservedInstancesId](#) (p. 490)
- [ReservedInstancesListing](#) (p. 490)
- [ReservedInstancesModification](#) (p. 491)
- [ReservedInstancesModificationResult](#) (p. 492)
- [ReservedInstancesOffering](#) (p. 493)
- [Route](#) (p. 495)
- [RouteTable](#) (p. 496)
- [RouteTableAssociation](#) (p. 497)
- [RunInstancesMonitoringEnabled](#) (p. 497)
- [S3Storage](#) (p. 498)
- [SecurityGroup](#) (p. 498)
- [Snapshot](#) (p. 500)
- [SpotDatafeedSubscription](#) (p. 501)
- [SpotInstanceRequest](#) (p. 502)
- [SpotInstanceStateFault](#) (p. 504)
- [SpotInstanceStatus](#) (p. 504)
- [SpotPlacement](#) (p. 505)
- [SpotPrice](#) (p. 505)
- [StateReason](#) (p. 506)
- [Storage](#) (p. 507)
- [Subnet](#) (p. 507)
- [Tag](#) (p. 509)
- [TagDescription](#) (p. 509)
- [UserData](#) (p. 510)
- [UserIdGroupPair](#) (p. 510)
- [VgwTelemetry](#) (p. 511)

- [Volume](#) (p. 511)
- [VolumeAttachment](#) (p. 513)
- [VolumeDetail](#) (p. 514)
- [VolumeStatusAction](#) (p. 514)
- [VolumeStatusDetails](#) (p. 515)
- [VolumeStatusEvent](#) (p. 515)
- [VolumeStatusInfo](#) (p. 516)
- [VolumeStatusItem](#) (p. 517)
- [Vpc](#) (p. 517)
- [VpcAttachment](#) (p. 518)
- [VpcClassicLink](#) (p. 519)
- [VpcPeeringConnection](#) (p. 519)
- [VpcPeeringConnectionStateReason](#) (p. 520)
- [VpcPeeringConnectionVpcInfo](#) (p. 521)
- [VpnConnection](#) (p. 521)
- [VpnConnectionOptions](#) (p. 522)
- [VpnConnectionOptionsSpecification](#) (p. 523)
- [VpnGateway](#) (p. 523)
- [VpnStaticRoute](#) (p. 524)

AccountAttribute

Description

Describes an account attribute.

Contents

attributeName

The name of the account attribute.

Type: String

Required: No

attributeValues

One or more values for the account attribute.

Type: [AccountAttributeValue](#) (p. 422) list

Required: No

AccountAttributeValue

Description

Describes a value of an account attribute.

Contents

attributeValue

The value of the attribute.

Type: String

Required: No

Address

Description

Describes an Elastic IP address.

Contents

instanceId

The ID of the instance the address is associated with (if any).

Type: String

Required: No

publicIp

The Elastic IP address.

Type: String

Required: No

allocationId

The ID representing the allocation of the address for use with EC2-VPC.

Type: String

Required: No

associationId

The ID representing the association of the address with an instance in a VPC.

Type: String

Required: No

domain

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

Type: String

Valid Values: `vpc` | `standard`

Required: No

networkInterfaceId

The ID of the network interface.

Type: String

Required: No

networkInterfaceOwnerId

The ID of the AWS account that owns the network interface.

Type: String

Required: No

privateIpAddress

The private IP address associated with the Elastic IP address.

Type: String

Required: No

AttributeBooleanValue

Description

The value to use when a resource attribute accepts a Boolean value.

Contents

Value (request), **value** (response)

Valid values are `true` or `false`.

Type: Boolean

Required: No

AttributeValue

Description

The value to use for a resource attribute.

Contents

Value (request), **value** (response)

Valid values are case-sensitive and vary by action.

Type: String

Required: No

AvailabilityZone

Description

Describes an Availability Zone.

Contents

state

The state of the Availability Zone (`available` | `impaired` | `unavailable`).

Type: String

Valid Values: `available`

Required: No

messages

Any messages about the Availability Zone.

Type: [AvailabilityZoneMessage](#) (p. 425) list

Required: No

regionName

The name of the region.

Type: String

Required: No

zoneName

The name of the Availability Zone.

Type: String

Required: No

AvailabilityZoneMessage

Description

Describes a message about an Availability Zone.

Contents

message

The message about the Availability Zone.

Type: String

Required: No

BlockDeviceMapping

Description

Describes a block device mapping.

Contents

DeviceName (request), **deviceName** (response)

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

Type: String

Required: No

VirtualName (request), **virtualName** (response)

The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Constraints: 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.

Type: String

Required: No

Ebs (request), **ebs** (response)

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsBlockDevice \(p. 435\)](#)

Required: No

NoDevice (request), **noDevice** (response)

Suppresses the specified device included in the block device mapping of the AMI.

Type: String

Required: No

BundleTask

Description

Describes a bundle task.

Contents

bundleId

The ID of the bundle task.

Type: String

Required: No

bundleTaskError

If the task fails, a description of the error.

Type: [BundleTaskError \(p. 427\)](#)

Required: No

instanceld

The ID of the instance associated with this bundle task.

Type: String

Required: No

progress

The level of task completion, as a percent (for example, 20%).

Type: String

Required: No

startTime

The time this task started.

Type: DateTime

Required: No

state

The state of the task.

Type: String

Valid Values: `pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling`
| `complete` | `failed`

Required: No

storage

The Amazon S3 storage locations.

Type: [Storage \(p. 507\)](#)

Required: No

updateTime

The time of the most recent update for the task.

Type: DateTime

Required: No

BundleTaskError

Description

Describes an error for [BundleInstance \(p. 42\)](#).

Contents

code

The error code.

Type: String

Required: No

message

The error message.

Type: String

Required: No

CancelledSpotInstanceRequest

Description

Describes a request to cancel a Spot Instance.

Contents

spotInstanceRequestId

The ID of the Spot Instance request.

Type: String

Required: No

state

The state of the Spot Instance request.

Type: String

Valid Values: `active` | `open` | `closed` | `cancelled` | `completed`

Required: No

ClassicLinkInstance

Description

Describes a linked EC2-Classic instance.

Contents

groups

A list of security groups.

Type: [GroupIdentifier \(p. 440\)](#) list

Required: No

instanceId

The ID of the instance.

Type: String

Required: No

tags

Any tags assigned to the instance.

Type: [Tag \(p. 509\)](#) list

Required: No

vpcid

The ID of the VPC.

Type: String

Required: No

ConversionTask

Description

Describes a conversion task.

Contents

conversionTaskId

The ID of the conversion task.

Type: String

Required: Yes

expirationTime

The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.

Type: String

Required: No

importInstance

If the task is for importing an instance, this contains information about the import instance task.

Type: [ImportInstanceTaskDetails \(p. 447\)](#)

Required: No

importVolume

If the task is for importing a volume, this contains information about the import volume task.

Type: [ImportVolumeTaskDetails \(p. 448\)](#)

Required: No

state

The state of the conversion task.

Type: String

Valid Values: `active` | `cancelling` | `cancelled` | `completed`

Required: Yes

statusMessage

The status message related to the conversion task.

Type: String

Required: No

tags

Type: [Tag \(p. 509\)](#) list

Required: No

CreateVolumePermission

Description

Contents

Group (request), **group** (response)

The specific group that is to be added or removed from a volume's list of create volume permissions.

Type: String

Valid Values: `all`

Required: No

UserId (request), **userId** (response)

The specific AWS account ID that is to be added or removed from a volume's list of create volume permissions.

Type: String

Required: No

CreateVolumePermissionModifications

Description

Contents

Add

Adds a specific AWS account ID or group to a volume's list of create volume permissions.

Type: [CreateVolumePermission \(p. 430\)](#) list

Required: No

Remove

Removes a specific AWS account ID or group from a volume's list of create volume permissions.

Type: [CreateVolumePermission \(p. 430\)](#) list

Required: No

CustomerGateway

Description

Describes a customer gateway.

Contents

bgpAsn

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: String

Required: No

customerGatewayId

The ID of the customer gateway.

Type: String

Required: No

ipAddress

The Internet-routable IP address of the customer gateway's outside interface.

Type: String

Required: No

state

The current state of the customer gateway (`pending` | `available` | `deleting` | `deleted`).

Type: String

Required: No

type

The type of VPN connection the customer gateway supports (`ipsec.1`).

Type: String

Required: No

tags

Any tags assigned to the customer gateway.

Type: [Tag \(p. 509\)](#) list

Required: No

DhcpConfiguration

Description

Describes a DHCP configuration option.

Contents

Key (request), **key** (response)
The name of a DHCP option.

Type: String

Required: No

Values (request), **values** (response)
One or more values for the DHCP option.

Type: String list

Required: No

DhcpOptions

Description

Describes a set of DHCP options.

Contents

dhcpConfigurations
One or more DHCP options in the set.

Type: [DhcpConfiguration \(p. 431\)](#) list

Required: No

dhcpOptionsId
The ID of the set of DHCP options.

Type: String

Required: No

tags
Any tags assigned to the DHCP options set.

Type: [Tag \(p. 509\)](#) list

Required: No

DiskImage

Description

Describes a disk image.

Contents

Description

Type: String

Required: No

Image

Type: [DiskImageDetail](#) (p. 434)

Required: No

Volume

Type: [VolumeDetail](#) (p. 514)

Required: No

DiskImageDescription

Description

Contents

checksum

The checksum computed for the disk image.

Type: String

Required: No

format

The disk image format.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

Required: Yes

importManifestUrl

A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Required: Yes

size

The size of the disk image.

Type: Long

Required: Yes

DiskImageDetail

Description

Contents

Bytes

Type: Long

Required: Yes

Format

The disk image format.

Type: String

Valid Values: VMDK | RAW | VHD

Required: Yes

ImportManifestUrl

A presigned URL for the import manifest 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 "Query String Request Authentication Alternative" section of the [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Required: Yes

DiskImageVolumeDescription

Description

Contents

id

The volume identifier.

Type: String

Required: Yes

size

The size of the volume.

Type: Long

Required: No

EbsBlockDevice

Description

Describes an Amazon EBS block device.

Contents

Encrypted (request), **encrypted** (response)

Indicates whether the Amazon EBS volume is encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption.

Type: Boolean

Required: No

DeleteOnTermination (request), **deleteOnTermination** (response)

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

Required: No

Iops (request), **iops** (response)

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 are 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 Elastic Compute Cloud User Guide*.

Constraint: Range is 100 to 20000 for Provisioned IOPS (SSD) volumes and 3 to 10000 for General Purpose (SSD) volumes.

Condition: This parameter is required for requests to create `io1` volumes; it is not used in requests to create `standard` or `gp2` volumes.

Type: Integer

Required: No

SnapshotId (request), **snapshotId** (response)

The ID of the snapshot.

Type: String

Required: No

VolumeSize (request), **volumeSize** (response)

The size of the volume, in GiB.

Constraints: 1-1024 for `standard` volumes, 1-16384 for `gp2` volumes, and 4-16384 for `io1` volumes. If you specify a snapshot, the volume size must be equal to or larger than the snapshot size.

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

Type: Integer

Required: No

VolumeType (request), **volumeType** (response)

The volume type. `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Type: String

Valid Values: `standard` | `io1` | `gp2`

Required: No

EbsInstanceBlockDevice

Description

Describes a parameter used to set up an Amazon EBS volume in a block device mapping.

Contents

attachTime

The time stamp when the attachment initiated.

Type: DateTime

Required: No

deleteOnTermination

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

status

The attachment state.

Type: String

Valid Values: `attaching` | `attached` | `detaching` | `detached`

Required: No

volumeId

The ID of the Amazon EBS volume.

Type: String

Required: No

EbsInstanceBlockDeviceSpecification

Description

Contents

DeleteOnTermination

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

VolumeId

The ID of the Amazon EBS volume.

Type: String

Required: No

ExportTask

Description

Describes an export task.

Contents

description

A description of the resource being exported.

Type: String

Required: No

exportTaskId

The ID of the export task.

Type: String

Required: No

exportToS3Task

Type: [ExportToS3Task](#) (p. 438)

Required: No

instanceExportDetails

The instance being exported.

Type: [InstanceExportDetails](#) (p. 457)

Required: No

state

The state of the conversion task.

Type: String

Valid Values: `active` | `cancelling` | `cancelled` | `completed`

Required: No

statusMessage

The status message related to the export task.

Type: String

Required: No

ExportToS3Task

Description

Contents

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`

Required: No

diskImageFormat

The format for the exported image.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

Required: No

s3Bucket

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

Type: String

Required: No

s3Key

Type: String

Required: No

ExportToS3TaskSpecification

Description

Contents

ContainerFormat

Type: String

Valid Values: ova

Required: No

DiskImageFormat

Type: String

Valid Values: VMDK | RAW | VHD

Required: No

S3Bucket

Type: String

Required: No

S3Prefix

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

Type: String

Required: No

Filter

Description

A filter name and value pair that is used to return a more specific list of results. Filters can be used to match a set of resources by various criteria, such as tags, attributes, or IDs.

Contents

Name

The name of the filter. Filter names are case-sensitive.

Type: String

Required: No

Values

One or more filter values. Filter values are case-sensitive.

Type: String list

Required: No

GroupIdentifier

Description

Describes a security group.

Contents

GroupName (request), **groupName** (response)
The name of the security group.

Type: String

Required: No

GroupId (request), **groupid** (response)
The ID of the security group.

Type: String

Required: No

IamInstanceProfile

Description

Describes an IAM instance profile.

Contents

arn
The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

id
The ID of the instance profile.

Type: String

Required: No

IamInstanceProfileSpecification

Description

Describes an IAM instance profile.

Contents

Arn (request), **arn** (response)

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

Name (request), **name** (response)

The name of the instance profile.

Type: String

Required: No

IcmpTypeCode

Description

Describes the ICMP type and code.

Contents

Code (request), **code** (response)

The ICMP type. A value of -1 means all types.

Type: Integer

Required: No

Type (request), **type** (response)

The ICMP code. A value of -1 means all codes for the specified ICMP type.

Type: Integer

Required: No

Image

Description

Describes an image.

Contents

architecture

The architecture of the image.

Type: String

Valid Values: i386 | x86_64

Required: No

creationDate

The date and time the image was created.

Type: String

Required: No

imageId

The ID of the AMI.

Type: String

Required: No

imageLocation

The location of the AMI.

Type: String

Required: No

imageType

The type of image.

Type: String

Valid Values: `machine` | `kernel` | `ramdisk`

Required: No

kernelId

The kernel associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

ownerId

The AWS account ID of the image owner.

Type: String

Required: No

platform

The value is `windows` for Windows AMIs; otherwise blank.

Type: String

Valid Values: `windows`

Required: No

productCodes

Any product codes associated with the AMI.

Type: [ProductCode \(p. 484\)](#) list

Required: No

public

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

Required: No

ramdiskId

The RAM disk associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

state

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` | `deregistered`

Required: No

blockDeviceMappings

Any block device mapping entries.

Type: [BlockDeviceMapping \(p. 425\)](#) list

Required: No

description

The description of the AMI that was provided during image creation.

Type: String

Required: No

hypervisor

The hypervisor type of the image.

Type: String

Valid Values: `ovm` | `xen`

Required: No

imageOwnerAlias

The AWS account alias (for example, `amazon`, `self`) or the AWS account ID of the AMI owner.

Type: String

Required: No

name

The name of the AMI that was provided during image creation.

Type: String

Required: No

rootDeviceName

The device name of the root device (for example, `/dev/sda1` or `/dev/xvda`).

Type: String

Required: No

rootDeviceType

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: `ebs` | `instance-store`

Required: No

sriovNetSupport

Specifies whether enhanced networking is enabled.

Type: String

Required: No

stateReason

The reason for the state change.

Type: [StateReason](#) (p. 506)

Required: No

tags

Any tags assigned to the image.

Type: [Tag](#) (p. 509) list

Required: No

virtualizationType

The type of virtualization of the AMI.

Type: String

Valid Values: `hvm` | `paravirtual`

Required: No

ImageAttribute

Description

Describes an image attribute.

Contents

blockDeviceMappings

One or more block device mapping entries.

Type: [BlockDeviceMapping](#) (p. 425) list

Required: No

imageId

The ID of the AMI.

Type: String

Required: No

launchPermissions

One or more launch permissions.

Type: [LaunchPermission](#) (p. 469) list

Required: No

productCodes

One or more product codes.

Type: [ProductCode](#) (p. 484) list

Required: No

description

A description for the AMI.

Type: [AttributeValue](#) (p. 424)

Required: No

kernelId

The kernel ID.

Type: [AttributeValue](#) (p. 424)

Required: No

ramdiskId

The RAM disk ID.

Type: [AttributeValue](#) (p. 424)

Required: No

sriovNetSupport

The value to use for a resource attribute.

Type: [AttributeValue](#) (p. 424)

Required: No

ImportInstanceLaunchSpecification

Description

Contents

AdditionalInfo

Type: String

Required: No

Architecture

The architecture of the instance.

Type: String

Valid Values: `i386` | `x86_64`

Required: No

GroupIds

One or more security group IDs.

Type: String list

Required: No

GroupNames

One or more security group names.

Type: String list

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`

Required: No

InstanceType

The instance type. 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. For more information, see [Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*. For more information about the Linux instance types you can import, see [Before You Get Started](#) in the Amazon Elastic Compute Cloud User Guide for Linux.

Type: String

Valid Values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `t2.micro` | `t2.small` | `t2.medium` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `hi1.4xlarge` | `hs1.8xlarge` | `c1.medium` | `c1.xlarge` | `c3.large` | `c3.xlarge` | `c3.2xlarge` | `c3.4xlarge` | `c3.8xlarge` | `c4.large` | `c4.xlarge` | `c4.2xlarge` | `c4.4xlarge` | `c4.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `g2.2xlarge` | `cg1.4xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `d2.xlarge` | `d2.2xlarge` | `d2.4xlarge` | `d2.8xlarge`

Required: No

Monitoring

Type: Boolean

Required: No

Placement

Type: [Placement](#) (p. 480)

Required: No

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

Required: No

SubnetId

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Required: No

UserData

User data to be made available to the instance.

Type: [UserData](#) (p. 510)

Required: No

ImportInstanceTaskDetails

Description

Contents

description

Type: String

Required: No

instancetype

Type: String

Required: No

platform

The instance operating system.

Type: String

Valid Values: windows

Required: No

volumes

Type: [ImportInstanceVolumeDetailItem](#) (p. 447) list

Required: Yes

ImportInstanceVolumeDetailItem

Description

Describes an import volume task.

Contents

availabilityZone

The Availability Zone where the resulting instance will reside.

Type: String

Required: Yes

bytesConverted

The number of bytes converted so far.

Type: Long

Required: Yes

description

Type: String

Required: No

image

The image.

Type: [DiskImageDescription](#) (p. 433)

Required: Yes

status

The status of the import of this particular disk image.

Type: String

Required: Yes

statusMessage

The status information or errors related to the disk image.

Type: String

Required: No

volume

The volume.

Type: [DiskImageVolumeDescription](#) (p. 434)

Required: Yes

ImportVolumeTaskDetails

Description

Describes an import volume task.

Contents

availabilityZone

The Availability Zone where the resulting volume will reside.

Type: String

Required: Yes

bytesConverted

The number of bytes converted so far.

Type: Long

Required: Yes

description

The description you provided when starting the import volume task.

Type: String

Required: No

image

The image.

Type: [DiskImageDescription](#) (p. 433)

Required: Yes

volume

The volume.

Type: [DiskImageVolumeDescription](#) (p. 434)

Required: Yes

Instance

Description

Describes an instance.

Contents

amiLaunchIndex

The AMI launch index, which can be used to find this instance in the launch group.

Type: Integer

Required: No

imageId

The ID of the AMI used to launch the instance.

Type: String

Required: No

instanceId

The ID of the instance.

Type: String

Required: No

instanceType

The instance type.

Type: String

Valid Values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

kernelId

The kernel associated with this instance.

Type: String

Required: No

keyName

The name of the key pair, if this instance was launched with an associated key pair.

Type: String

Required: No

launchTime

The time the instance was launched.

Type: DateTime

Required: No

monitoring

The monitoring information for the instance.

Type: [Monitoring](#) (p. 472)

Required: No

placement

The location where the instance launched.

Type: [Placement](#) (p. 480)

Required: No

platform

The value is `windows` for Windows instances; otherwise blank.

Type: String

Valid Values: `windows`

Required: No

privateDnsName

The private DNS name assigned to the instance. This DNS name can only be used inside the Amazon EC2 network. This name is not available until the instance enters the `running` state.

Type: String

Required: No

privateIpAddress

The private IP address assigned to the instance.

Type: String

Required: No

productCodes

The product codes attached to this instance.

Type: [ProductCode](#) (p. 484) list

Required: No

publicDnsName

The public DNS name assigned to the instance. This name is not available until the instance enters the `running` state.

Type: String

Required: No

publicIpAddress

The public IP address assigned to the instance.

Type: String

Required: No

ramdiskId

The RAM disk associated with this instance.

Type: String

Required: No

state

The current state of the instance.

Type: [InstanceState](#) (p. 463)

Required: No

stateTransitionReason

The reason for the most recent state transition. This might be an empty string.

Type: String

Required: No

subnetId

The ID of the subnet in which the instance is running.

Type: String

Required: No

vpId

The ID of the VPC in which the instance is running.

Type: String

Required: No

architecture

The architecture of the image.

Type: String

Valid Values: `i386` | `x86_64`

Required: No

blockDeviceMappings

Any block device mapping entries for the instance.

Type: [InstanceBlockDeviceMapping](#) (p. 455) list

Required: No

clientToken

The idempotency token you provided when you launched the instance.

Type: String

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 I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Required: No

hypervisor

The hypervisor type of the instance.

Type: String

Valid Values: `ovm` | `xen`

Required: No

iamInstanceProfile

The IAM instance profile associated with the instance.

Type: [IamInstanceProfile \(p. 440\)](#)

Required: No

instanceLifecycle

Indicates whether this is a Spot Instance.

Type: String

Valid Values: `spot`

Required: No

networkInterfaces

[EC2-VPC] One or more network interfaces for the instance.

Type: [InstanceNetworkInterface \(p. 458\)](#) list

Required: No

rootDeviceName

The root device name (for example, `/dev/sda1` or `/dev/xvda`).

Type: String

Required: No

rootDeviceType

The root device type used by the AMI. The AMI can use an Amazon EBS volume or an instance store volume.

Type: String

Valid Values: `ebs` | `instance-store`

Required: No

securityGroups

One or more security groups for the instance.

Type: [GroupIdentifier \(p. 440\)](#) list

Required: No

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 Virtual Private Cloud User Guide*.

Type: Boolean

Required: No

spotInstanceRequestId

The ID of the Spot Instance request.

Type: String

Required: No

sriovNetSupport

Specifies whether enhanced networking is enabled.

Type: String

Required: No

stateReason

The reason for the most recent state transition.

Type: [StateReason \(p. 506\)](#)

Required: No

tags

Any tags assigned to the instance.

Type: [Tag \(p. 509\)](#) list

Required: No

virtualizationType

The virtualization type of the instance.

Type: String

Valid Values: `hvm` | `paravirtual`

Required: No

InstanceAttribute

Description

Describes an instance attribute.

Contents

groups

The security groups associated with the instance.

Type: [GroupIdentifier \(p. 440\)](#) list

Required: No

blockDeviceMappings

The block device mapping of the instance.

Type: [InstanceBlockDeviceMapping \(p. 455\)](#) list

Required: No

disableApiTermination

If the value is `true`, you can't terminate the instance through the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

ebsOptimized

Indicates whether the instance is optimized for EBS I/O.

Type: [AttributeBooleanValue \(p. 424\)](#)

Required: No

instanceId

The ID of the instance.

Type: String

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: [AttributeValue \(p. 424\)](#)

Required: No

instanceType

The instance type.

Type: [AttributeValue \(p. 424\)](#)

Required: No

kernelId

The kernel ID.

Type: [AttributeValue \(p. 424\)](#)

Required: No

productCodes

A list of product codes.

Type: [ProductCode \(p. 484\)](#) list

Required: No

ramdiskId

The RAM disk ID.

Type: [AttributeValue](#) (p. 424)

Required: No

rootDeviceName

The name of the root device (for example, `/dev/sda1` or `/dev/xvda`).

Type: [AttributeValue](#) (p. 424)

Required: No

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: [AttributeBooleanValue](#) (p. 424)

Required: No

sriovNetSupport

The value to use for a resource attribute.

Type: [AttributeValue](#) (p. 424)

Required: No

userData

The Base64-encoded MIME user data.

Type: [AttributeValue](#) (p. 424)

Required: No

InstanceBlockDeviceMapping

Description

Describes a block device mapping.

Contents

deviceName

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

Type: String

Required: No

ebs

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsInstanceBlockDevice](#) (p. 436)

Required: No

InstanceBlockDeviceMappingSpecification

Description

Describes a block device mapping entry.

Contents

DeviceName

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

Type: String

Required: No

Ebs

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsInstanceBlockDeviceSpecification](#) (p. 437)

Required: No

NoDevice

suppress the specified device included in the block device mapping.

Type: String

Required: No

VirtualName

The virtual device name.

Type: String

Required: No

InstanceCount

Description

Describes a Reserved Instance listing state.

Contents

instanceCount

The number of listed Reserved Instances in the state specified by the `state`.

Type: Integer

Required: No

state

The states of the listed Reserved Instances.

Type: String

Valid Values: `available` | `sold` | `cancelled` | `pending`

Required: No

InstanceExportDetails

Description

Describes an instance export task.

Contents

instancetype

The ID of the resource being exported.

Type: String

Required: No

targetEnvironment

The target virtualization environment.

Type: String

Valid Values: `citrix` | `vmware` | `microsoft`

Required: No

InstanceMonitoring

Description

Describes the monitoring information of the instance.

Contents

instancetype

The ID of the instance.

Type: String

Required: No

monitoring

The monitoring information.

Type: [Monitoring](#) (p. 472)

Required: No

InstanceNetworkInterface

Description

Describes a network interface.

Contents

association

The association information for an Elastic IP associated with the network interface.

Type: [InstanceNetworkInterfaceAssociation](#) (p. 459)

Required: No

attachment

The network interface attachment.

Type: [InstanceNetworkInterfaceAttachment](#) (p. 460)

Required: No

description

The description.

Type: String

Required: No

groups

One or more security groups.

Type: [GroupIdentifier](#) (p. 440) list

Required: No

macAddress

The MAC address.

Type: String

Required: No

networkInterfaceId

The ID of the network interface.

Type: String

Required: No

ownerId

The ID of the AWS account that created the network interface.

Type: String

Required: No

privateDnsName

The private DNS name.

Type: String

Required: No

privateIpAddress

The IP address of the network interface within the subnet.

Type: String

Required: No

privateIpAddresses

The private IP addresses associated with the network interface.

Type: [InstancePrivateIpAddress](#) (p. 462) list

Required: No

sourceDestCheck

Indicates whether to validate network traffic to or from this network interface.

Type: Boolean

Required: No

status

The status of the network interface.

Type: String

Valid Values: `available` | `attaching` | `in-use` | `detaching`

Required: No

subnetId

The ID of the subnet.

Type: String

Required: No

vpcId

The ID of the VPC.

Type: String

Required: No

InstanceNetworkInterfaceAssociation

Description

Describes association information for an Elastic IP address.

Contents

ipOwnerId

The ID of the owner of the Elastic IP address.

Type: String

Required: No

publicDnsName

The public DNS name.

Type: String

Required: No

publicIp

The public IP address or Elastic IP address bound to the network interface.

Type: String

Required: No

InstanceNetworkInterfaceAttachment

Description

Describes a network interface attachment.

Contents

attachTime

The time stamp when the attachment initiated.

Type: DateTime

Required: No

attachmentId

The ID of the network interface attachment.

Type: String

Required: No

deleteOnTermination

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

deviceIndex

The index of the device on the instance for the network interface attachment.

Type: Integer

Required: No

status

The attachment state.

Type: String

Valid Values: `attaching` | `attached` | `detaching` | `detached`

Required: No

InstanceNetworkInterfaceSpecification

Description

Describes a network interface.

Contents

AssociatePublicIpAddress (request), **associatePublicIpAddress** (response)

Indicates whether to assign a public IP address to an instance you launch in a VPC. The public IP address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.

Type: Boolean

Required: No

DeleteOnTermination (request), **deleteOnTermination** (response)

If set to `true`, the interface is deleted when the instance is terminated. You can specify `true` only if creating a new network interface when launching an instance.

Type: Boolean

Required: No

Description (request), **description** (response)

The description of the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

DeviceIndex (request), **deviceIndex** (response)

The index of the device on the instance for the network interface attachment. If you are specifying a network interface in a [RunInstances](#) (p. 402) request, you must provide the device index.

Type: Integer

Required: No

Groups (request), **groups** (response)

The IDs of the security groups for the network interface. Applies only if creating a network interface when launching an instance.

Type: String list

Required: No

NetworkInterfaceId (request), **networkInterfaceId** (response)

The ID of the network interface.

Type: String

Required: No

PrivateIpAddress (request), **privateIpAddress** (response)

The private IP address of the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

PrivateIpAddresses (request), **privateIpAddresses** (response)

One or more private IP addresses to assign to the network interface. Only one private IP address can be designated as primary.

Type: [PrivateIpAddressSpecification](#) (p. 483) list

Required: No

SecondaryPrivateIpAddressCount (request), **secondaryPrivateIpAddressCount** (response)

The number of secondary private IP addresses. You can't specify this option and specify more than one private IP address using the private IP addresses option.

Type: Integer

Required: No

SubnetId (request), **subnetId** (response)

The ID of the subnet associated with the network string. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

InstancePrivateIpAddress

Description

Describes a private IP address.

Contents

association

The association information for an Elastic IP address for the network interface.

Type: [InstanceNetworkInterfaceAssociation](#) (p. 459)

Required: No

primary

Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

Required: No

privateDnsName

The private DNS name.

Type: String

Required: No

privateIpAddress

The private IP address of the network interface.

Type: String

Required: No

InstanceState

Description

Describes the current state of the instance.

Contents

code

The low byte represents the state. The high byte is an opaque internal value and should be ignored.

- 0 : pending
- 16 : running
- 32 : shutting-down
- 48 : terminated
- 64 : stopping
- 80 : stopped

Type: Integer

Required: No

name

The current state of the instance.

Type: String

Valid Values: pending | running | shutting-down | terminated | stopping | stopped

Required: No

InstanceStateChange

Description

Describes an instance state change.

Contents

currentState

The current state of the instance.

Type: [InstanceState](#) (p. 463)

Required: No

instanceId

The ID of the instance.

Type: String

Required: No

previousState

The previous state of the instance.

Type: [InstanceState](#) (p. 463)

Required: No

InstanceStatus

Description

Describes the status of an instance.

Contents

availabilityZone

The Availability Zone of the instance.

Type: String

Required: No

events

Extra information regarding events associated with the instance.

Type: [InstanceStateEvent](#) (p. 465) list

Required: No

instanceId

The ID of the instance.

Type: String

Required: No

instanceState

The intended state of the instance. [DescribeInstanceState](#) (p. 202) requires that an instance be in the `running` state.

Type: [InstanceState](#) (p. 463)

Required: No

instanceStatus

Reports impaired functionality that stems from issues internal to the instance, such as impaired reachability.

Type: [InstanceStatusSummary](#) (p. 466)

Required: No

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: [InstanceStatusSummary](#) (p. 466)

Required: No

InstanceStatusDetails

Description

Describes the instance status.

Contents

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

Required: No

name

The type of instance status.

Type: String

Valid Values: `reachability`

Required: No

status

The status.

Type: String

Valid Values: `passed` | `failed` | `insufficient-data`

Required: No

InstanceStatusEvent

Description

Describes an instance event.

Contents

code

The associated code of the event.

Type: String

Valid Values: `instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`

Required: No

description

A description of the event.

Type: String

Required: No

notAfter

The latest scheduled end time for the event.

Type: DateTime

Required: No

notBefore

The earliest scheduled start time for the event.

Type: DateTime

Required: No

InstanceStatusSummary

Description

Describes the status of an instance.

Contents

details

The system instance health or application instance health.

Type: [InstanceStatusDetails](#) (p. 465) list

Required: No

status

The status.

Type: String

Valid Values: `ok` | `impaired` | `insufficient-data` | `not-applicable`

Required: No

InternetGateway

Description

Describes an Internet gateway.

Contents

attachments

Any VPCs attached to the Internet gateway.

Type: [InternetGatewayAttachment](#) (p. 467) list

Required: No

internetGatewayId

The ID of the Internet gateway.

Type: String

Required: No

tags

Any tags assigned to the Internet gateway.

Type: [Tag \(p. 509\)](#) list

Required: No

InternetGatewayAttachment

Description

Describes the attachment of a VPC to an Internet gateway.

Contents

state

The current state of the attachment.

Type: String

Valid Values: `attaching` | `attached` | `detaching` | `detached`

Required: No

vpclId

The ID of the VPC.

Type: String

Required: No

IpPermission

Description

Describes a security group rule.

Contents

FromPort (request), **fromPort** (response)

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

Required: No

IpProtocol (request), **ipProtocol** (response)

The protocol.

When you call [DescribeSecurityGroups](#) (p. 252), 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 a list of protocol numbers, see [Protocol Numbers](#). (VPC only) When you call [AuthorizeSecurityGroupIngress](#) (p. 38), you can use `-1` to specify all.

Type: String

Required: No

IpRanges (request), **ipRanges** (response)

One or more IP ranges.

Type: [IpRange](#) (p. 468) list

Required: No

ToPort (request), **toPort** (response)

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

Required: No

UserIdGroupPairs (request), **userIdGroupPairs** (response)

One or more security group and AWS account ID pairs.

Type: [UserIdGroupPair](#) (p. 510) list

Required: No

IpRange

Description

Describes an IP range.

Contents

CidrIp (request), **cidrIp** (response)

The CIDR range. You can either specify a CIDR range or a source security group, not both.

Type: String

Required: No

KeyPair

Description

Describes a key pair.

Contents

keyFingerprint

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

Type: String

Required: No

keyMaterial

An unencrypted PEM encoded RSA private key.

Type: String

Required: No

keyName

The name of the key pair.

Type: String

Required: No

KeyPairInfo

Description

Describes a key pair.

Contents

keyFingerprint

If you used [CreateKeyPair \(p. 72\)](#) to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used [ImportKeyPair \(p. 334\)](#) to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of RFC4716.

Type: String

Required: No

keyName

The name of the key pair.

Type: String

Required: No

LaunchPermission

Description

Describes a launch permission.

Contents

Group (request), **group** (response)

The name of the group.

Type: String

Valid Values: all

Required: No

UserId (request), **userId** (response)

The AWS account ID.

Type: String

Required: No

LaunchPermissionModifications

Description

Describes a launch permission modification.

Contents

Add

The AWS account ID to add to the list of launch permissions for the AMI.

Type: [LaunchPermission](#) (p. 469) list

Required: No

Remove

The AWS account ID to remove from the list of launch permissions for the AMI.

Type: [LaunchPermission](#) (p. 469) list

Required: No

LaunchSpecification

Description

Describes the launch specification for an instance.

Contents

SecurityGroups (request), **securityGroups** (response)

One or more security groups. To request an instance in a nondefault VPC, you must specify the ID of the security group. To request an instance in EC2-Classic or a default VPC, you can specify the name or the ID of the security group.

Type: [GroupIdentifier](#) (p. 440) list

Required: No

AddressingType (request), **addressingType** (response)
Deprecated.

Type: String

Required: No

BlockDeviceMappings (request), **blockDeviceMappings** (response)
One or more block device mapping entries.

Type: [BlockDeviceMapping](#) (p. 425) list

Required: No

EbsOptimized (request), **ebsOptimized** (response)

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.

Default: `false`

Type: Boolean

Required: No

IamInstanceProfile (request), **iamInstanceProfile** (response)
The IAM instance profile.

Type: [IamInstanceProfileSpecification](#) (p. 440)

Required: No

ImageId (request), **imageId** (response)
The ID of the AMI.

Type: String

Required: No

InstanceType (request), **instanceType** (response)
The instance type.

Type: String

Valid Values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `t2.micro` | `t2.small` | `t2.medium` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `hi1.4xlarge` | `hs1.8xlarge` | `c1.medium` | `c1.xlarge` | `c3.large` | `c3.xlarge` | `c3.2xlarge` | `c3.4xlarge` | `c3.8xlarge` | `c4.large` | `c4.xlarge` | `c4.2xlarge` | `c4.4xlarge` | `c4.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `g2.2xlarge` | `cg1.4xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `d2.xlarge` | `d2.2xlarge` | `d2.4xlarge` | `d2.8xlarge`

Required: No

KernelId (request), **kernelId** (response)
The ID of the kernel.

Type: String

Required: No

KeyName (request), **keyName** (response)

The name of the key pair.

Type: String

Required: No

MonitoringEnabled (request), **monitoringEnabled** (response)

Enables monitoring for the instance.

Default: Disabled

Type: Boolean

Required: No

NetworkInterfaces (request), **networkInterfaces** (response)

One or more network interfaces.

Type: [InstanceNetworkInterfaceSpecification \(p. 461\)](#) list

Required: No

Placement (request), **placement** (response)

The placement information for the instance.

Type: [SpotPlacement \(p. 505\)](#)

Required: No

RamdiskId (request), **ramdiskId** (response)

The ID of the RAM disk.

Type: String

Required: No

SubnetId (request), **subnetId** (response)

The ID of the subnet in which to launch the instance.

Type: String

Required: No

UserData (request), **userData** (response)

The Base64-encoded MIME user data to make available to the instances.

Type: String

Required: No

Monitoring

Description

Describes the monitoring for the instance.

Contents

state

Indicates whether monitoring is enabled for the instance.

Type: String

Valid Values: `disabled` | `enabled` | `pending`

Required: No

NetworkAcl

Description

Describes a network ACL.

Contents

associations

Any associations between the network ACL and one or more subnets

Type: [NetworkAclAssociation \(p. 474\)](#) list

Required: No

entries

One or more entries (rules) in the network ACL.

Type: [NetworkAclEntry \(p. 474\)](#) list

Required: No

isDefault

Indicates whether this is the default network ACL for the VPC.

Type: Boolean

Required: No

networkAclId

The ID of the network ACL.

Type: String

Required: No

tags

Any tags assigned to the network ACL.

Type: [Tag \(p. 509\)](#) list

Required: No

vpclId

The ID of the VPC for the network ACL.

Type: String

Required: No

NetworkAclAssociation

Description

Describes an association between a network ACL and a subnet.

Contents

networkAclAssociationId

The ID of the association between a network ACL and a subnet.

Type: String

Required: No

networkAclId

The ID of the network ACL.

Type: String

Required: No

subnetId

The ID of the subnet.

Type: String

Required: No

NetworkAclEntry

Description

Describes an entry in a network ACL.

Contents

cidrBlock

The network range to allow or deny, in CIDR notation.

Type: String

Required: No

egress

Indicates whether the rule is an egress rule (applied to traffic leaving the subnet).

Type: Boolean

Required: No

icmpTypeCode

ICMP protocol: The ICMP type and code.

Type: [IcmpTypeCode](#) (p. 441)

Required: No

portRange

TCP or UDP protocols: The range of ports the rule applies to.

Type: [PortRange](#) (p. 481)

Required: No

protocol

The protocol. A value of -1 means all protocols.

Type: String

Required: No

ruleAction

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow` | `deny`

Required: No

ruleNumber

The rule number for the entry. ACL entries are processed in ascending order by rule number.

Type: Integer

Required: No

NetworkInterface

Description

Describes a network interface.

Contents

association

The association information for an Elastic IP associated with the network interface.

Type: [NetworkInterfaceAssociation](#) (p. 477)

Required: No

attachment

The network interface attachment.

Type: [NetworkInterfaceAttachment](#) (p. 478)

Required: No

availabilityZone

The Availability Zone.

Type: String

Required: No

description

A description.

Type: String

Required: No

groups

Any security groups for the network interface.

Type: [GroupIdentifier \(p. 440\)](#) list

Required: No

macAddress

The MAC address.

Type: String

Required: No

networkInterfaceId

The ID of the network interface.

Type: String

Required: No

ownerId

The AWS account ID of the owner of the network interface.

Type: String

Required: No

privateDnsName

The private DNS name.

Type: String

Required: No

privateIpAddress

The IP address of the network interface within the subnet.

Type: String

Required: No

privateIpAddresses

The private IP addresses associated with the network interface.

Type: [NetworkInterfacePrivateIpAddress \(p. 479\)](#) list

Required: No

requesterId

The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

Required: No

requesterManaged

Indicates whether the network interface is being managed by AWS.

Type: Boolean

Required: No

sourceDestCheck

Indicates whether traffic to or from the instance is validated.

Type: Boolean

Required: No

status

The status of the network interface.

Type: String

Valid Values: `available` | `attaching` | `in-use` | `detaching`

Required: No

subnetId

The ID of the subnet.

Type: String

Required: No

tagSet

Any tags assigned to the network interface.

Type: [Tag \(p. 509\)](#) list

Required: No

vpclId

The ID of the VPC.

Type: String

Required: No

NetworkInterfaceAssociation

Description

Describes association information for an Elastic IP address.

Contents

allocationId

The allocation ID.

Type: String

Required: No

associationId

The association ID.

Type: String

Required: No

ipOwnerId

The ID of the Elastic IP address owner.

Type: String

Required: No

publicDnsName

The public DNS name.

Type: String

Required: No

publicIp

The address of the Elastic IP address bound to the network interface.

Type: String

Required: No

NetworkInterfaceAttachment

Description

Describes a network interface attachment.

Contents

attachTime

The timestamp indicating when the attachment initiated.

Type: DateTime

Required: No

attachmentId

The ID of the network interface attachment.

Type: String

Required: No

deleteOnTermination

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

deviceIndex

The device index of the network interface attachment on the instance.

Type: Integer

Required: No

instanceId

The ID of the instance.

Type: String

Required: No

instanceOwnerId

The AWS account ID of the owner of the instance.

Type: String

Required: No

status

The attachment state.

Type: String

Valid Values: `attaching` | `attached` | `detaching` | `detached`

Required: No

NetworkInterfaceAttachmentChanges

Description

Describes an attachment change.

Contents

AttachmentId

The ID of the network interface attachment.

Type: String

Required: No

DeleteOnTermination

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

NetworkInterfacePrivateIpAddress

Description

Describes the private IP address of a network interface.

Contents

association

The association information for an Elastic IP address associated with the network interface.

Type: [NetworkInterfaceAssociation](#) (p. 477)

Required: No

primary

Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

Required: No

privateDnsName

The private DNS name.

Type: String

Required: No

privateIpAddress

The private IP address.

Type: String

Required: No

Placement

Description

Describes the placement for the instance.

Contents

AvailabilityZone (request), **availabilityZone** (response)

The Availability Zone of the instance.

Type: String

Required: No

GroupName (request), **groupName** (response)

The name of the placement group the instance is in (for cluster compute instances).

Type: String

Required: No

Tenancy (request), **tenancy** (response)

The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of `dedicated` runs on single-tenant hardware.

Type: String

Valid Values: `default` | `dedicated`

Required: No

PlacementGroup

Description

Describes a placement group.

Contents

groupName

The name of the placement group.

Type: String

Required: No

state

The state of the placement group.

Type: String

Valid Values: `pending` | `available` | `deleting` | `deleted`

Required: No

strategy

The placement strategy.

Type: String

Valid Values: `cluster`

Required: No

PortRange

Description

Describes a range of ports.

Contents

From (request), **from** (response)

The first port in the range.

Type: Integer

Required: No

To (request), **to** (response)

The last port in the range.

Type: Integer

Required: No

PriceSchedule

Description

Describes the price for a Reserved Instance.

Contents

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

Required: No

currencyCode

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

price

The fixed price for the term.

Type: Double

Required: No

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

Required: No

PriceScheduleSpecification

Description

Describes the price for a Reserved Instance.

Contents

CurrencyCode

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

Price

The fixed price for the term.

Type: Double

Required: No

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

Required: No

PricingDetail

Description

Describes a Reserved Instance offering.

Contents

count

The number of instances available for the price.

Type: Integer

Required: No

price

The price per instance.

Type: Double

Required: No

PrivateIpAddressSpecification

Description

Describes a secondary private IP address for a network interface.

Contents

Primary (request), **primary** (response)

Indicates whether the private IP address is the primary private IP address. Only one IP address can be designated as primary.

Type: Boolean

Required: No

PrivateIpAddress (request), **privateIpAddress** (response)

The private IP addresses.

Type: String

Required: Yes

ProductCode

Description

Describes a product code.

Contents

productCodeId

The product code.

Type: String

Required: No

productCodeType

The type of product code.

Type: String

Valid Values: `devpay` | `marketplace`

Required: No

PropagatingVgw

Description

Describes a virtual private gateway propagating route.

Contents

gatewayId

The ID of the virtual private gateway (VGW).

Type: String

Required: No

RecurringCharge

Description

Describes a recurring charge.

Contents

amount

The amount of the recurring charge.

Type: Double

Required: No

frequency

The frequency of the recurring charge.

Type: String

Valid Values: `Hourly`

Required: No

Region

Description

Describes a region.

Contents

endpoint

The region service endpoint.

Type: String

Required: No

regionName

The name of the region.

Type: String

Required: No

Reservation

Description

Describes a reservation.

Contents

groups

One or more security groups.

Type: [GroupIdentifier](#) (p. 440) list

Required: No

instances

One or more instances.

Type: [Instance \(p. 449\)](#) list

Required: No

ownerId

The ID of the AWS account that owns the reservation.

Type: String

Required: No

requesterId

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

Required: No

reservationId

The ID of the reservation.

Type: String

Required: No

ReservedInstanceLimitPrice

Description

Describes the limit price of a Reserved Instance offering.

Contents

Amount

Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount * price).

Type: Double

Required: No

CurrencyCode

The currency in which the `limitPrice` amount is specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

ReservedInstances

Description

Describes a Reserved Instance.

Contents

availabilityZone

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

duration

The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

end

The time when the Reserved Instance expires.

Type: DateTime

Required: No

fixedPrice

The purchase price of the Reserved Instance.

Type: Float

Required: No

instanceCount

The number of Reserved Instances purchased.

Type: Integer

Required: No

instanceType

The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

productDescription

The Reserved Instance description.

Type: String

Valid Values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

Required: No

reservedInstancesId

The ID of the Reserved Instance.

Type: String

Required: No

start

The date and time the Reserved Instance started.

Type: DateTime

Required: No

state

The state of the Reserved Instance purchase.

Type: String

Valid Values: `payment-pending` | `active` | `payment-failed` | `retired`

Required: No

usagePrice

The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

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

Valid Values: `USD`

Required: No

instanceTenancy

The tenancy of the reserved instance.

Type: String

Valid Values: `default` | `dedicated`

Required: No

offeringType

The Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization` | `No Upfront` | `Partial Upfront` | `All Upfront`

Required: No

recurringCharges

The recurring charge tag assigned to the resource.

Type: [RecurringCharge \(p. 484\)](#) list

Required: No

tags

Any tags assigned to the resource.

Type: [Tag \(p. 509\)](#) list

Required: No

ReservedInstancesConfiguration

Description

Describes the configuration settings for the modified Reserved Instances.

Contents

AvailabilityZone (request), **availabilityZone** (response)

The Availability Zone for the modified Reserved Instances.

Type: String

Required: No

InstanceCount (request), **instanceCount** (response)

The number of modified Reserved Instances.

Type: Integer

Required: No

InstanceType (request), **instanceType** (response)

The instance type for the modified Reserved Instances.

Type: String

Valid Values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

Platform (request), **platform** (response)

The network platform of the modified Reserved Instances, which is either EC2-Classic or EC2-VPC.

Type: String

Required: No

ReservedInstancesId

Description

Describes the ID of a Reserved Instance.

Contents

reservedInstancesId

The ID of the Reserved Instance.

Type: String

Required: No

ReservedInstancesListing

Description

Describes a Reserved Instance listing.

Contents

clientToken

A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

createDate

The time the listing was created.

Type: DateTime

Required: No

instanceCounts

The number of instances in this state.

Type: [InstanceCount \(p. 456\)](#) list

Required: No

priceSchedules

The price of the Reserved Instance listing.

Type: [PriceSchedule \(p. 481\)](#) list

Required: No

reservedInstancesId

The ID of the Reserved Instance.

Type: String

Required: No

reservedInstancesListingId

The ID of the Reserved Instance listing.

Type: String

Required: No

status

The status of the Reserved Instance listing.

Type: String

Valid Values: `active` | `pending` | `cancelled` | `closed`

Required: No

statusMessage

The reason for the current status of the Reserved Instance listing. The response can be blank.

Type: String

Required: No

tags

Any tags assigned to the resource.

Type: [Tag \(p. 509\)](#) list

Required: No

updateDate

The last modified timestamp of the listing.

Type: DateTime

Required: No

ReservedInstancesModification

Description

Describes a Reserved Instance modification.

Contents

clientToken

A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

createDate

The time when the modification request was created.

Type: DateTime

Required: No

effectiveDate

The time for the modification to become effective.

Type: DateTime

Required: No

modificationResults

Contains target configurations along with their corresponding new Reserved Instance IDs.

Type: [ReservedInstancesModificationResult \(p. 492\)](#) list

Required: No

reservedInstancesIds

The IDs of one or more Reserved Instances.

Type: [ReservedInstancesId \(p. 490\)](#) list

Required: No

reservedInstancesModificationId

A unique ID for the Reserved Instance modification.

Type: String

Required: No

status

The status of the Reserved Instances modification request.

Type: String

Required: No

statusMessage

The reason for the status.

Type: String

Required: No

updateDate

The time when the modification request was last updated.

Type: DateTime

Required: No

ReservedInstancesModificationResult

Description

Contents

reservedInstancesId

The 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

Required: No

targetConfiguration

The target Reserved Instances configurations supplied as part of the modification request.

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

Required: No

ReservedInstancesOffering

Description

Describes a Reserved Instance offering.

Contents

availabilityZone

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

duration

The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

fixedPrice

The purchase price of the Reserved Instance.

Type: Float

Required: No

instanceType

The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

productDescription

The Reserved Instance description.

Type: String

Valid Values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

Required: No

reservedInstancesOfferingId

The ID of the Reserved Instance offering.

Type: String

Required: No

usagePrice

The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

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

Valid Values: `USD`

Required: No

instanceTenancy

The tenancy of the reserved instance.

Type: String

Valid Values: `default` | `dedicated`

Required: No

marketplace

Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. If it's a Reserved Instance Marketplace offering, this is `true`.

Type: Boolean

Required: No

offeringType

The Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization` | `No Upfront` | `Partial Upfront` | `All Upfront`

Required: No

pricingDetails

The pricing details of the Reserved Instance offering.

Type: [PricingDetail \(p. 483\)](#) list

Required: No

recurringCharges

The recurring charge tag assigned to the resource.

Type: [RecurringCharge \(p. 484\)](#) list

Required: No

Route

Description

Describes a route in a route table.

Contents

destinationCidrBlock

The CIDR block used for the destination match.

Type: String

Required: No

gatewayId

The ID of a gateway attached to your VPC.

Type: String

Required: No

instanceId

The ID of a NAT instance in your VPC.

Type: String

Required: No

instanceOwnerId

The AWS account ID of the owner of the instance.

Type: String

Required: No

networkInterfaceId

The ID of the network interface.

Type: String

Required: No

origin

Describes how the route was created.

- `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.

Type: String

Valid Values: `CreateRouteTable` | `CreateRoute` | `EnableVgwRoutePropagation`

Required: No

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`

Required: No

vpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: No

RouteTable

Description

Describes a route table.

Contents

associations

The associations between the route table and one or more subnets.

Type: [RouteTableAssociation \(p. 497\)](#) list

Required: No

propagatingVgws

Any virtual private gateway (VGW) propagating routes.

Type: [PropagatingVgw \(p. 484\)](#) list

Required: No

routeTableId

The ID of the route table.

Type: String

Required: No

routes

The routes in the route table.

Type: [Route \(p. 495\)](#) list

Required: No

tags

Any tags assigned to the route table.

Type: [Tag \(p. 509\)](#) list

Required: No

vpcId

The ID of the VPC.

Type: String

Required: No

RouteTableAssociation

Description

Describes an association between a route table and a subnet.

Contents

main

Indicates whether this is the main route table.

Type: Boolean

Required: No

routeTableAssociationId

The ID of the association between a route table and a subnet.

Type: String

Required: No

routeTableId

The ID of the route table.

Type: String

Required: No

subnetId

The ID of the subnet.

Type: String

Required: No

RunInstancesMonitoringEnabled

Description

Describes the monitoring for the instance.

Contents

Enabled

Indicates whether monitoring is enabled for the instance.

Type: Boolean

Required: Yes

S3Storage

Description

Describes the storage parameters for S3 and S3 buckets for an instance store-backed AMI.

Contents

AWSAccessKeyId (request), **aWSAccessKeyId** (response)

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

Type: String

Required: No

Bucket (request), **bucket** (response)

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

Required: No

Prefix (request), **prefix** (response)

The beginning of the file name of the AMI.

Type: String

Required: No

UploadPolicy (request), **uploadPolicy** (response)

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

Type: String

Required: No

UploadPolicySignature (request), **uploadPolicySignature** (response)

The signature of the Base64 encoded JSON document.

Type: String

Required: No

SecurityGroup

Description

Describes a security group

Contents

description

A description of the security group.

Type: String

Required: No

groupName

The name of the security group.

Type: String

Required: No

ipPermissions

One or more inbound rules associated with the security group.

Type: [IpPermission \(p. 467\)](#) list

Required: No

ownerId

The AWS account ID of the owner of the security group.

Type: String

Required: No

groupId

The ID of the security group.

Type: String

Required: No

ipPermissionsEgress

[EC2-VPC] One or more outbound rules associated with the security group.

Type: [IpPermission \(p. 467\)](#) list

Required: No

tags

Any tags assigned to the security group.

Type: [Tag \(p. 509\)](#) list

Required: No

vpclId

[EC2-VPC] The ID of the VPC for the security group.

Type: String

Required: No

Snapshot

Description

Describes a snapshot.

Contents

description

The description for the snapshot.

Type: String

Required: No

encrypted

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

kmsKeyId

The full ARN of the AWS Key Management Service (KMS) master key that was used to protect the volume encryption key for the parent volume.

Type: String

Required: No

ownerId

The AWS account ID of the Amazon EBS snapshot owner.

Type: String

Required: No

progress

The progress of the snapshot, as a percentage.

Type: String

Required: No

snapshotId

The ID of the snapshot.

Type: String

Required: No

startTime

The time stamp when the snapshot was initiated.

Type: DateTime

Required: No

state

The snapshot state.

Type: String

Valid Values: `pending` | `completed` | `error`

Required: No

volumeId

The ID of the volume.

Type: String

Required: No

volumeSize

The size of the volume, in GiB.

Type: Integer

Required: No

ownerAlias

The AWS account alias (for example, `amazon`, `self`) or AWS account ID that owns the snapshot.

Type: String

Required: No

tags

Any tags assigned to the snapshot.

Type: [Tag \(p. 509\)](#) list

Required: No

SpotDatafeedSubscription

Description

Describes the data feed for a Spot Instance.

Contents

bucket

The Amazon S3 bucket where the Spot Instance data feed is located.

Type: String

Required: No

fault

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFault \(p. 504\)](#)

Required: No

ownerId

The AWS account ID of the account.

Type: String

Required: No

prefix

The prefix that is prepended to data feed files.

Type: String

Required: No

state

The state of the Spot Instance data feed subscription.

Type: String

Valid Values: `Active` | `Inactive`

Required: No

SpotInstanceRequest

Description

Describe a Spot Instance request.

Contents

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

Required: No

createTime

The time stamp when the Spot Instance request was created.

Type: DateTime

Required: No

fault

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFault](#) (p. 504)

Required: No

instanceId

The instance ID, if an instance has been launched to fulfill the Spot Instance request.

Type: String

Required: No

launchGroup

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

Required: No

launchSpecification

Additional information for launching instances.

Type: [LaunchSpecification](#) (p. 470)

Required: No

launchedAvailabilityZone

The Availability Zone in which the bid is launched.

Type: String

Required: No

productDescription

The product description associated with the Spot Instance.

Type: String

Valid Values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

Required: No

spotInstanceRequestId

The ID of the Spot Instance request.

Type: String

Required: No

spotPrice

The maximum hourly price (bid) for any Spot Instance launched to fulfill the request.

Type: String

Required: No

state

The state of the Spot Instance request. Spot bid status information can help you track your Spot Instance requests. For more information, see [Spot Bid Status](#) in the *Amazon Elastic Compute Cloud User Guide for Linux*.

Type: String

Valid Values: `open` | `active` | `closed` | `cancelled` | `failed`

Required: No

status

The status code and status message describing the Spot Instance request.

Type: [SpotInstanceStatus](#) (p. 504)

Required: No

tags

Any tags assigned to the resource.

Type: [Tag](#) (p. 509) list

Required: No

type

The Spot Instance request type.

Type: String

Valid Values: `one-time` | `persistent`

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`

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 is reached.

Type: `DateTime`

Required: No

SpotInstanceStateFault

Description

Describes a Spot Instance state change.

Contents

code

The reason code for the Spot Instance state change.

Type: `String`

Required: No

message

The message for the Spot Instance state change.

Type: `String`

Required: No

SpotInstanceState

Description

Describes the status of a Spot Instance request.

Contents

code

The status code.

Type: String

Required: No

message

The description for the status code.

Type: String

Required: No

updateTime

The time of the most recent status update.

Type: DateTime

Required: No

SpotPlacement

Description

Describes Spot Instance placement.

Contents

AvailabilityZone (request), **availabilityZone** (response)

The Availability Zone.

Type: String

Required: No

GroupName (request), **groupName** (response)

The name of the placement group (for cluster instances).

Type: String

Required: No

SpotPrice

Description

Describes the maximum hourly price (bid) for any Spot Instance launched to fulfill the request.

Contents

availabilityZone

The Availability Zone.

Type: String

Required: No

instanceType

The instance type.

Type: String

Valid Values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | t2.micro | t2.small | t2.medium | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

productDescription

A general description of the AMI.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

spotPrice

The maximum price (bid) that you are willing to pay for a Spot Instance.

Type: String

Required: No

timestamp

The date and time the request was created.

Type: DateTime

Required: No

StateReason

Description

Describes a state change.

Contents

code

The reason code for the state change.

Type: String

Required: No

message

The message for the state change.

- `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.

Type: String

Required: No

Storage

Description

Describes the storage location for an instance store-backed AMI.

Contents

S3 (request), **s3** (response)

An Amazon S3 storage location.

Type: [S3Storage](#) (p. 498)

Required: No

Subnet

Description

Describes a subnet.

Contents

availabilityZone

The Availability Zone of the subnet.

Type: String

Required: No

availableIpAddressCount

The number of unused IP addresses in the subnet. Note that the IP addresses for any stopped instances are considered unavailable.

Type: Integer

Required: No

cidrBlock

The CIDR block assigned to the subnet.

Type: String

Required: No

defaultForAz

Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

Required: No

mapPublicIpOnLaunch

Indicates whether instances launched in this subnet receive a public IP address.

Type: Boolean

Required: No

state

The current state of the subnet.

Type: String

Valid Values: `pending` | `available`

Required: No

subnetId

The ID of the subnet.

Type: String

Required: No

vpId

The ID of the VPC the subnet is in.

Type: String

Required: No

tags

Any tags assigned to the subnet.

Type: [Tag \(p. 509\)](#) list

Required: No

Tag

Description

Describes a tag.

Contents

Key (request), **key** (response)

The key of the tag.

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

Type: String

Required: No

Value (request), **value** (response)

The value of the tag.

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

Type: String

Required: No

TagDescription

Description

Describes a tag.

Contents

key

The tag key.

Type: String

Required: No

resourceId

The ID of the resource. For example, `ami-1a2b3c4d`.

Type: String

Required: No

resourceType

The resource type.

Type: String

Valid Values: customer-gateway | dhcp-options | image | instance | internet-gateway | network-acl | network-interface | reserved-instances | route-table | snapshot | spot-instances-request | subnet | security-group | volume | vpc | vpn-connection | vpn-gateway

Required: No

value

The tag value.

Type: String

Required: No

UserData

Description

No action documentation available.

Contents

Data

Type: String

Required: No

UserGroupIdPair

Description

Describes a security group and AWS account ID pair.

Contents

GroupId (request), **groupId** (response)

The ID of the security group.

Type: String

Required: No

GroupName (request), **groupName** (response)

The name of the security group. In a request, use this parameter for a security group in EC2-Classical or a default VPC only. For a security group in a nondefault VPC, use `GroupId`.

Type: String

Required: No

UserId (request), **userId** (response)

The ID of an AWS account. EC2-Classical only.

Type: String

Required: No

VgwTelemetry

Description

Describes telemetry for a VPN tunnel.

Contents

acceptedRouteCount

The number of accepted routes.

Type: Integer

Required: No

lastStatusChange

The date and time of the last change in status.

Type: DateTime

Required: No

outsideIpAddress

The Internet-routable IP address of the virtual private gateway's outside interface.

Type: String

Required: No

status

The status of the VPN tunnel.

Type: String

Valid Values: UP | DOWN

Required: No

statusMessage

If an error occurs, a description of the error.

Type: String

Required: No

Volume

Description

Describes a volume.

Contents

attachments

Type: [VolumeAttachment](#) (p. 513) list

Required: No

availabilityZone

The Availability Zone for the volume.

Type: String

Required: No

createTime

The time stamp when volume creation was initiated.

Type: DateTime

Required: No

encrypted

Indicates whether the volume will be encrypted.

Type: Boolean

Required: No

kmsKeyId

The full ARN of the AWS Key Management Service (KMS) master key that was used to protect the volume encryption key for the volume.

Type: String

Required: No

size

The size of the volume, in GiBs.

Type: Integer

Required: No

snapshotId

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

Type: String

Required: No

state

The volume state.

Type: String

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

Required: No

volumeId

The ID of the volume.

Type: String

Required: No

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 are 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 Elastic Compute Cloud User Guide for Linux*.

Constraint: Range is 100 to 20000 for Provisioned IOPS (SSD) volumes and 3 to 10000 for General Purpose (SSD) volumes.

Condition: This parameter is required for requests to create `io1` volumes; it is not used in requests to create `standard` or `gp2` volumes.

Type: Integer

Required: No

tags

Any tags assigned to the volume.

Type: [Tag \(p. 509\)](#) list

Required: No

volumeType

The volume type. This can be `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, or `standard` for Magnetic volumes.

Type: String

Valid Values: `standard` | `io1` | `gp2`

Required: No

VolumeAttachment

Description

Describes volume attachment details.

Contents

attachTime

The time stamp when the attachment initiated.

Type: DateTime

Required: No

device

The device name.

Type: String

Required: No

instanceId

The ID of the instance.

Type: String

Required: No

state

The attachment state of the volume.

Type: String

Valid Values: `attaching` | `attached` | `detaching` | `detached`

Required: No

volumeId

The ID of the volume.

Type: String

Required: No

deleteOnTermination

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

Required: No

VolumeDetail

Description

Describes an Amazon EBS volume.

Contents

Size

The size of the volume, in GiB.

Type: Long

Required: Yes

VolumeStatusAction

Description

Describes a volume status operation code.

Contents

code

The code identifying the operation, for example, `enable-volume-io`.

Type: String

Required: No

description

A description of the operation.

Type: String

Required: No

eventId

The ID of the event associated with this operation.

Type: String

Required: No

eventType

The event type associated with this operation.

Type: String

Required: No

VolumeStatusDetails

Description

Describes a volume status.

Contents

name

The name of the volume status.

Type: String

Valid Values: `io-enabled` | `io-performance`

Required: No

status

The intended status of the volume status.

Type: String

Required: No

VolumeStatusEvent

Description

Describes a volume status event.

Contents

description

A description of the event.

Type: String

Required: No

eventId

The ID of this event.

Type: String

Required: No

eventType

The type of this event.

Type: String

Required: No

notAfter

The latest end time of the event.

Type: DateTime

Required: No

notBefore

The earliest start time of the event.

Type: DateTime

Required: No

VolumeStatusInfo

Description

Describes the status of a volume.

Contents

details

The details of the volume status.

Type: [VolumeStatusDetails](#) (p. 515) list

Required: No

status

The status of the volume.

Type: String

Valid Values: `ok` | `impaired` | `insufficient-data`

Required: No

VolumeStatusItem

Description

Describes the volume status.

Contents

actions

The details of the operation.

Type: [VolumeStatusAction](#) (p. 514) list

Required: No

availabilityZone

The Availability Zone of the volume.

Type: String

Required: No

events

A list of events associated with the volume.

Type: [VolumeStatusEvent](#) (p. 515) list

Required: No

volumeId

The volume ID.

Type: String

Required: No

volumeStatus

The volume status.

Type: [VolumeStatusInfo](#) (p. 516)

Required: No

Vpc

Description

Describes a VPC.

Contents

cidrBlock

The CIDR block for the VPC.

Type: String

Required: No

dhcpOptionsId

The ID of the set of DHCP options you've associated with the VPC (or `default` if the default options are associated with the VPC).

Type: String

Required: No

state

The current state of the VPC.

Type: String

Valid Values: `pending` | `available`

Required: No

vpclId

The ID of the VPC.

Type: String

Required: No

instanceTenancy

The allowed tenancy of instances launched into the VPC.

Type: String

Valid Values: `default` | `dedicated`

Required: No

isDefault

Indicates whether the VPC is the default VPC.

Type: Boolean

Required: No

tags

Any tags assigned to the VPC.

Type: [Tag \(p. 509\)](#) list

Required: No

VpcAttachment

Description

Describes an attachment between a virtual private gateway and a VPC.

Contents

state

The current state of the attachment.

Type: String

Valid Values: `attaching` | `attached` | `detaching` | `detached`

Required: No

vpclId

The ID of the VPC.

Type: String

Required: No

VpcClassicLink

Description

Describes whether a VPC is enabled for ClassicLink.

Contents

classicLinkEnabled

Indicates whether the VPC is enabled for ClassicLink.

Type: Boolean

Required: No

tags

Any tags assigned to the VPC.

Type: [Tag \(p. 509\)](#) list

Required: No

vpclId

The ID of the VPC.

Type: String

Required: No

VpcPeeringConnection

Description

Describes a VPC peering connection.

Contents

accepterVpcInfo

The information of the peer VPC.

Type: [VpcPeeringConnectionVpcInfo \(p. 521\)](#)

Required: No

expirationTime

The time that an unaccepted VPC peering connection will expire.

Type: DateTime

Required: No

requesterVpcInfo

The information of the requester VPC.

Type: [VpcPeeringConnectionVpcInfo](#) (p. 521)

Required: No

status

The status of the VPC peering connection.

Type: [VpcPeeringConnectionStateReason](#) (p. 520)

Required: No

tags

Any tags assigned to the resource.

Type: [Tag](#) (p. 509) list

Required: No

vpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: No

VpcPeeringConnectionStateReason

Description

Describes the status of a VPC peering connection.

Contents

code

The status of the VPC peering connection.

Type: String

Required: No

message

A message that provides more information about the status, if applicable.

Type: String

Required: No

VpcPeeringConnectionVpcInfo

Description

Describes a VPC in a VPC peering connection.

Contents

cidrBlock

The CIDR block for the VPC.

Type: String

Required: No

ownerId

The AWS account ID of the VPC owner.

Type: String

Required: No

vpcId

The ID of the VPC.

Type: String

Required: No

VpnConnection

Description

Describes a VPN connection.

Contents

customerGatewayConfiguration

The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the [CreateVpnConnection](#) (p. 115) response; however, it's present in the [DescribeVpnConnections](#) (p. 297) response only if the VPN connection is in the `pending` or `available` state.

Type: String

Required: No

customerGatewayId

The ID of the customer gateway at your end of the VPN connection.

Type: String

Required: No

state

The current state of the VPN connection.

Type: String

Valid Values: `pending` | `available` | `deleting` | `deleted`

Required: No

type

The type of VPN connection.

Type: String

Valid Values: `ipsec.1`

Required: No

vpnConnectionId

The ID of the VPN connection.

Type: String

Required: No

vpnGatewayId

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

Required: No

options

The VPN connection options.

Type: [VpnConnectionOptions \(p. 522\)](#)

Required: No

routes

The static routes associated with the VPN connection.

Type: [VpnStaticRoute \(p. 524\)](#) list

Required: No

tags

Any tags assigned to the VPN connection.

Type: [Tag \(p. 509\)](#) list

Required: No

vgwTelemetry

Information about the VPN tunnel.

Type: [VgwTelemetry \(p. 511\)](#) list

Required: No

VpnConnectionOptions

Description

Describes VPN connection options.

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

Required: No

VpnConnectionOptionsSpecification

Description

Describes VPN connection options.

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

Required: No

VpnGateway

Description

Describes a virtual private gateway.

Contents

availabilityZone

The Availability Zone where the virtual private gateway was created.

Type: String

Required: No

state

The current state of the virtual private gateway.

Type: String

Valid Values: `pending` | `available` | `deleting` | `deleted`

Required: No

type

The type of VPN connection the virtual private gateway supports.

Type: String

Valid Values: `ipsec.1`

Required: No

vpcAttachments

Any VPCs attached to the virtual private gateway.

Type: [VpcAttachment \(p. 518\)](#) list

Required: No

vpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: No

tags

Any tags assigned to the virtual private gateway.

Type: [Tag \(p. 509\)](#) list

Required: No

VpnStaticRoute

Description

Describes a static route for a VPN connection.

Contents

destinationCidrBlock

The CIDR block associated with the local subnet of the customer data center.

Type: String

Required: No

source

Indicates how the routes were provided.

Type: String

Valid Values: `Static`

Required: No

state

The current state of the static route.

Type: String

Valid Values: `pending` | `available` | `deleting` | `deleted`

Required: No

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 \(p. 525\)](#)
- [Available APIs for Amazon EC2 \(p. 525\)](#)
- [Query Requests \(p. 526\)](#)
- [Troubleshooting API Request Errors \(p. 530\)](#)
- [Ensuring Idempotency \(p. 532\)](#)
- [SOAP Requests \(p. 534\)](#)
- [Logging Amazon EC2 API Calls Using AWS CloudTrail \(p. 535\)](#)

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 \(p. 527\)](#)
- [Endpoints \(p. 528\)](#)
- [Query Parameters \(p. 528\)](#)
- [Query API Authentication \(p. 529\)](#)
- [Query Response Structures \(p. 529\)](#)

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; for example, `2014-10-01`.
- **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 \(p. 538\)](#).

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=2014-10-01&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%3x-amz-date&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=2014-10-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLEus-east-1%2Fec2%2Faws4_request
&X-Amz-Date=20130813T150206Z
&X-Amz-SignedHeaders=content-type%3x-amz-date
&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. 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=2014-10-01
```

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 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 successful response includes a request ID in a `requestId` element, and every unsuccessful 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/2014-10-01/">  
  <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>
```

Troubleshooting API Request Errors

In the Amazon EC2 Query API, errors 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. 530)
- [Eventual Consistency](#) (p. 531)
- [Unauthorized Operation](#) (p. 532)

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 available).
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 \(p. 525\)](#).

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 \(p. 525\)](#).

Topics

- [Common Query Parameters for Signature Version 2 \(p. 538\)](#)
- [Common Query Parameters for Signature Version 4 \(p. 539\)](#)

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. Example: 2014-10-01	Yes
<i>AWSAccessKeyId</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 ISO 8601 . 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 ISO 8601 . 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: AQoEXAMPLEH4aoAH0gNCAPyJxz4B1CFFx-WNE1OPTgk5TthT+FvwqnKwRcOIfrRh3c/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. Example: 2014-10-01	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 X-Amz-Credential parameter, or the date used in an Authorization 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 host header. If you include an x-amz-date 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: AQoEXAMPLEH4aoAH0gNCAPyJxz4BlCFFx-WNE1OPTgk5TthT+FvqwqNkWrCOIfrRh3c/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 DryRunOperation; otherwise, it returns UnauthorizedOperation.	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

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 and for example policies, see [IAM Policies for Amazon EC2](#) in the *Amazon EC2 User Guide*.

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 later.)

Resource-level permissions refers to the ability to specify which resources users are allowed to perform actions on. Amazon EC2 has partial support for resource-level permissions. This means that for certain Amazon EC2 actions, you can control when users are allowed to use those actions based on conditions that have to be fulfilled, or specific resources that users are allowed to use. For example, you can grant users permission to launch instances, but only of a specific type, and only using a specific AMI.

Topics

- [Supported Resource-Level Permissions \(p. 542\)](#)
- [Unsupported Resource-Level Permissions \(p. 550\)](#)

Supported Resource-Level Permissions

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 later.)

Topics

- [Customer Gateways](#) (p. 542)
- [DHCP Options Sets](#) (p. 542)
- [Instances](#) (p. 542)
- [Internet Gateways](#) (p. 546)
- [Network ACLs](#) (p. 546)
- [Route Tables](#) (p. 546)
- [Security Groups](#) (p. 547)
- [Volumes](#) (p. 548)
- [VPCs](#) (p. 549)
- [VPC Peering Connections](#) (p. 549)

Customer Gateways

Resource	ARN Format	Condition Keys
Action: DeleteCustomerGateway (p. 122)		
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
Action: DeleteDhcpOptions (p. 124)		
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
Action: AttachClassicLinkVpc (p. 25)		

**Amazon Elastic Compute Cloud API Reference
Instances**

Resource	ARN Format	Condition Keys
Instance	<i>arn:aws:ec2:region:account:instance/instance-id</i>	ec2:AvailabilityZone ec2:InstanceType ec2:PlacementGroup ec2:ProductCode ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Subnet ec2:Tenancy ec2:Vpc
Security Group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
VPC	<i>arn:aws:ec2:region:account:vpc/vpc-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Tenancy
Action: DetachClassicLinkVpc (p. 303)		
Instance	<i>arn:aws:ec2:region:account:instance/instance-id</i>	ec2:AvailabilityZone ec2:InstanceType ec2:PlacementGroup ec2:ProductCode ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Subnet ec2:Tenancy ec2:Vpc
VPC	<i>arn:aws:ec2:region:account:vpc/vpc-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Tenancy
Action: RebootInstances (p. 362)		

**Amazon Elastic Compute Cloud API Reference
Instances**

Resource	ARN Format	Condition Keys
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
Action: RunInstances (p. 402)		
Image	<i>arn:aws:ec2:region::image/image-id</i>	ec2:ImageType ec2:Owner ec2:Public ec2:Region ec2:RootDeviceType ec2:ResourceTag/tag-key
Instance	<i>arn:aws:ec2:region:account:instance/*</i>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:RootDeviceType ec2:Tenancy
Key pair	<i>arn:aws:ec2:region:account:key-pair/key-pair-name</i>	ec2:Region
Network interface	<i>arn:aws:ec2:region:account:network-interface/*</i> (if launching into a VPC, for creating a network interface) <i>arn:aws:ec2:region:account:network-interface/eni-id</i> (if specifying an existing network interface)	ec2:AvailabilityZone ec2:Region ec2:Subnet ec2:ResourceTag/tag-key ec2:Vpc
Placement group	<i>arn:aws:ec2:region:account:placement-group/placement-group-name</i>	ec2:Region ec2:PlacementGroup-Strategy
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc

**Amazon Elastic Compute Cloud API Reference
Instances**

Resource	ARN Format	Condition Keys
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
Action: StartInstances (p. 409)		
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
Action: StopInstances (p. 411)		
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
Action: TerminateInstances (p. 413)		

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

Internet Gateways

Resource	ARN Format	Condition Keys
Action: DeleteInternetGateway (p. 126)		
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
Action: DeleteNetworkAcl (p. 130)		
Network ACL	<code>arn:aws:ec2:region:account:network-acl/nacl-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Action: DeleteNetworkAclEntry (p. 132)		
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
Action: DeleteRoute (p. 138)		

Resource	ARN Format	Condition Keys
Route table	<code>arn:aws:ec2:region:account:route-table/route-table-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Action: DeleteRouteTable (p. 140)		
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
Action: AuthorizeSecurityGroupEgress (p. 35)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Action: AuthorizeSecurityGroupIngress (p. 38)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Action: DeleteSecurityGroup (p. 142)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Action: RevokeSecurityGroupEgress (p. 396)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
Action: RevokeSecurityGroupIngress (p. 399)		
Security group	<code>arn:aws:ec2:region:account:security-group/security-group-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc

Volumes

Resource	ARN Format	Condition Keys
Action: AttachVolume (p. 31)		
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
Action: DeleteVolume (p. 152)		
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
Action: DetachVolume (p. 309)		
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

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

VPCs

Resource	ARN Format	Condition Keys
Action: DisableVpcClassicLink (p. 315)		
VPC	<code>arn:aws:ec2:region:account:vpc/vpc-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Tenancy
Action: EnableVpcClassicLink (p. 325)		
VPC	<code>arn:aws:ec2:region:account:vpc/vpc-id</code>	ec2:Region ec2:ResourceTag/tag-key ec2:Tenancy

VPC Peering Connections

Resource	ARN Format	Condition Keys
Action: AcceptVpcPeeringConnection (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:vpc-peering-connection/vpc-peering-connection-id</code>	ec2:AcceptorVpc ec2:Region ec2:ResourceTag/tag-key ec2:RequesterVpc
Action: CreateVpcPeeringConnection (p. 112)		

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
Action: DeleteVpcPeeringConnection (p. 156)		
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
Action: RejectVpcPeeringConnection (p. 368)		
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

Unsupported Resource-Level Permissions

The following Amazon EC2 API actions currently do not support resource-level permissions. To use these actions in an IAM policy, you must grant users permission to use all resources for the action by using a * wildcard for the `Resource` element in your statement. For examples, see [Example Policies for CLI or SDK](#).

- `AllocateAddress`
- `AssignPrivateIpAddresses`
- `AssociateAddress`
- `AssociateDhcpOptions`
- `AssociateRouteTable`
- `AttachInternetGateway`
- `AttachNetworkInterface`
- `AttachVpnGateway`
- `BundleInstance`
- `CancelBundleTask`
- `CancelConversionTask`
- `CancelExportTask`

- CancelReservedInstancesListing
- CancelSpotInstanceRequests
- ConfirmProductInstance
- CopyImage
- CopySnapshot
- CreateCustomerGateway
- CreateDhcpOptions
- CreateImage
- CreateInstanceExportTask
- CreateInternetGateway
- CreateKeyPair
- CreateNetworkAcl
- CreateNetworkAclEntry
- CreateNetworkInterface
- CreatePlacementGroup
- CreateReservedInstancesListing
- CreateRoute
- CreateRouteTable
- CreateSecurityGroup
- CreateSnapshot
- CreateSpotDatafeedSubscription
- CreateSubnet
- CreateTags
- CreateVolume
- CreateVpc
- CreateVpnConnection
- CreateVpnConnectionRoute
- CreateVpnGateway
- DeleteKeyPair
- DeleteNetworkInterface
- DeletePlacementGroup
- DeleteSnapshot
- DeleteSpotDatafeedSubscription
- DeleteSubnet
- DeleteTags
- DeleteVpc
- DeleteVpnConnection
- DeleteVpnConnectionRoute
- DeleteVpnGateway
- DeregisterImage
- DescribeAccountAttributes
- DescribeAddresses
- DescribeAvailabilityZones
- DescribeBundleTasks
- DescribeClassicLinkInstances
- DescribeConversionTasks

- DescribeCustomerGateways
- DescribeDhcpOptions
- DescribeExportTasks
- DescribeImageAttribute
- DescribeImages
- DescribeInstanceAttribute
- DescribeInstances
- DescribeInstanceStatus
- DescribeInternetGateways
- DescribeKeyPairs
- DescribeNetworkAcls
- DescribeNetworkInterfaceAttribute
- DescribeNetworkInterfaces
- DescribePlacementGroups
- DescribeRegions
- DescribeReservedInstances
- DescribeReservedInstancesListings
- DescribeReservedInstancesModifications
- DescribeReservedInstancesOfferings
- DescribeRouteTables
- DescribeSecurityGroups
- DescribeSnapshotAttribute
- DescribeSnapshots
- DescribeSpotDatafeedSubscription
- DescribeSpotInstanceRequests
- DescribeSpotPriceHistory
- DescribeSubnets
- DescribeTags
- DescribeVolumeAttribute
- DescribeVolumes
- DescribeVolumeStatus
- DescribeVpcAttribute
- DescribeVpcClassicLink
- DescribeVpcPeeringConnections
- DescribeVpcs
- DescribeVpnConnections
- DescribeVpnGateways
- DetachInternetGateway
- DetachNetworkInterface
- DetachVpnGateway
- DisableVgwRoutePropagation
- DisassociateAddress
- DisassociateRouteTable
- EnableVgwRoutePropagation
- EnableVolumeIO
- GetConsoleOutput

- GetPasswordData
- ImportInstance
- ImportKeyPair
- ImportVolume
- ModifyImageAttribute
- ModifyInstanceAttribute
- ModifyNetworkInterfaceAttribute
- ModifyReservedInstances
- ModifySnapshotAttribute
- ModifySubnetAttribute
- ModifyVolumeAttribute
- ModifyVpcAttribute
- MonitorInstances
- PurchaseReservedInstancesOffering
- RegisterImage
- ReleaseAddress
- ReplaceNetworkAclAssociation
- ReplaceNetworkAclEntry
- ReplaceRoute
- ReplaceRouteTableAssociation
- ReportInstanceStatus
- RequestSpotInstances
- ResetImageAttribute
- ResetInstanceAttribute
- ResetNetworkInterfaceAttribute
- ResetSnapshotAttribute
- UnassignPrivateIpAddresses
- UnmonitorInstances

Error Codes

Amazon EC2 has two types of error codes:

- **Client errors.** These errors are usually 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 errors.** These errors are usually caused by a server-side issue. These errors are accompanied by a 500-series HTTP response code.

Topics

- [Common Client Errors \(p. 554\)](#)
- [Client Errors For Specific Actions \(p. 556\)](#)
- [Server Errors \(p. 571\)](#)
- [Example Error Response \(p. 571\)](#)
- [Eventual Consistency \(p. 572\)](#)

Common Client Errors

This section lists the common client errors that all actions can return.

Error Code	Description
AuthFailure	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.
Blocked	Your account is currently blocked. Contact aws-verification@amazon.com if you have questions.

Amazon Elastic Compute Cloud API Reference
Common Client Errors

Error Code	Description
DryRunOperation	The user has the required permissions, so the request would have succeeded, but the <code>DryRun</code> parameter was used.
IdempotentParameterMismatch	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.
IncompleteSignature	The request signature does not conform to AWS standards.
InvalidAction	The action or operation requested is invalid. Verify that the action is typed correctly.
InvalidClientTokenId	The X.509 certificate or AWS access key ID provided does not exist in our records.
InvalidParameter	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.
InvalidParameterCombination	Indicates an incorrect combination of parameters, or a missing parameter. For example, trying to terminate an instance without specifying the instance ID.
InvalidParameterValue	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.
InvalidQueryString	The AWS query string is malformed or does not adhere to AWS standards.
MalformedQueryString	The query string contains a syntax error.
MissingAction	The request is missing an action or a required parameter.
MissingAuthenticationToken	The request must contain either a valid (registered) AWS access key ID or X.509 certificate.
MissingParameter	The request is missing a required parameter. Ensure that you have supplied all the required parameters for the request; for example, the resource ID.
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.
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 AWS Support .

Error Code	Description
RequestExpired	The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.
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 Query API Request Rate (p. 530) .
Throttling	The request was denied due to request throttling.
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 Controlling Access . If the returned message is encoded, you can decode it using the <code>DecodeAuthorizationMessage</code> action. For more information, see DecodeAuthorizationMessage 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.
UnsupportedProtocol	SOAP has been deprecated and is not supported for the API version you're using. For more information, see SOAP Requests .
ValidationError	The input fails to satisfy the constraints specified by an AWS service.

Client Errors For Specific Actions

This section lists client errors that are specific to certain Amazon EC2 API actions.

Error Code	Description
ActiveVpcPeeringConnectionPerVpcLimitExceeded	You've reached the limit on the number of active VPC peering connections you can have for the specified VPC.
AddressLimitExceeded	You've reached the limit on the number of Elastic IP addresses that you can allocate. For more information, see Elastic IP Address Limit . If you need additional Elastic IP addresses, complete the Amazon EC2 Elastic IP Address Request Form . If you need additional Elastic IP addresses for your VPCs, complete the Amazon VPC Limits form .

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
AttachmentLimitExceeded	You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.
BundlingInProgress	The specified instance already has a bundling task in progress.
CannotDelete	You cannot delete the 'default' security group in your VPC, but you can change its rules. For more information, see Amazon EC2 Security Groups .
ConcurrentSnapshotLimitExceeded	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.
ConcurrentTagAccess	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 Error Retries and Exponential Backoff in AWS .
CustomerGatewayLimitExceeded	You've reached the limit on the number of customer gateways you can create for the region. For more information, see Amazon VPC Limits . To request an increase on your customer gateway limit, complete the Amazon VPC Limits form .
DependencyViolation	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.
DiskImageSizeTooLarge	The disk image exceeds the allowed limit (for instance or volume import).
EncryptedVolumesNotSupported	Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see Amazon EBS encryption in the <i>Amazon EC2 User Guide for Linux Instances</i> .
FilterLimitExceeded	The request uses too many filters or too many filter values.
Gateway.NotAttached	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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

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>InstanceAlreadyLinked</code>	<p>The EC2-Classical instance you are trying to link is already linked to another VPC. You cannot link an EC2-Classical instance to more than one VPC at a time.</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 How many instances can I run in Amazon EC2. If you need additional instances, complete the Amazon EC2 Instance Request Form.</p>
<code>InsufficientFreeAddressesInSubnet</code>	<p>The specified subnet does not contain enough free IP addresses to fulfill your request. Use the DescribeSubnets 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 Amazon VPC Limits. To request an increase on the Internet gateway limit, complete the Amazon VPC Limits form.</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>

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<code>InvalidAllocationID.NotFound</code>	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.
<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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<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.
<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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
InvalidGroup.NotFound	<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 Eventual Consistency (p. 531).</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>
InvalidGroup.Reserved	<p>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 Amazon EC2 Security Groups.</p>
InvalidID	<p>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.</p> <p>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>.</p>
InvalidInput	<p>An input parameter in the request is invalid; for example, if you specified an incorrect Reserved Instance listing ID in the request.</p>
InvalidInstanceAttributeValue	<p>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.</p>
InvalidInstanceID	<p>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.</p> <p>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.</p> <p>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.</p>

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<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 Eventual Consistency (p. 531) .
<code>InvalidInstanceID.NotLinkable</code>	The specified instance cannot be linked to the specified VPC. Ensure that the instance is an EC2-Classic instance. This error may also occur if the instance was recently launched, and its ID has not yet propagated through the system. Wait a few minutes, or wait until the instance is in the <code>running</code> state, and then try again.
<code>InvalidInstanceType</code>	The specified instance does not support bundling. You can only bundle instance store-backed Windows instances.
<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 Private IP addresses per ENI .
<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 unparseable 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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<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>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.
<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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<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> .
<code>InvalidRouteTableID.NotFound</code>	The specified route table does not exist. Ensure that you specify the route table ID in the form <code>rtb-xxxxxxx</code> , 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 <code>sg-xxxxxx</code> .
<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 <code>sir-xxxxxxx</code> .
<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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<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.
<code>InvalidUserID.Malformed</code>	The specified user or owner is not valid. If you are performing a DescribeImages 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 DescribeSnapshots 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 Your VPC and Subnets .
<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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<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.
<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 DescribeAvailabilityZones 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 Amazon EC2 EBS Volume Limit Form .
<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 How many instances can I run in Amazon EC2 . If you need additional instances, complete the Amazon EC2 Instance Request Form .
<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 Amazon VPC Limits .
<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 Amazon VPC Limits . To request an increase on your network ACL limit, complete the Amazon VPC Limits form .
<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 Exporting EC2 Instances

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
<code>OperationNotPermitted</code>	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.
<code>OutstandingVpcPeeringConnectionLimitExceeded</code>	You've reached the limit on the number of VPC peering connection requests that you can create for the specified VPC.
<code>PendingSnapshotLimitExceeded</code>	You've reached the limit on the number of Amazon EBS snapshots that you can have in the pending state.
<code>PrivateIpAddressLimitExceeded</code>	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 Private IP addresses per ENI .
<code>RequestResourceCountExceeded</code>	<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> <ul style="list-style-type: none"> —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. —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.
<code>ReservedInstancesLimitExceeded</code>	Your current quota does not allow you to purchase the required number of Reserved Instances.
<code>Resource.AlreadyAssociated</code>	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.

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
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. If you get this error, break up your request into smaller requests; for example, if you are launching 15 instances, try launching 5 instances in 3 separate requests.
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 Amazon VPC Limits .
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 Security Group Rules .
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-Classical or EC2-VPC. For more information, see Creating Your Own Security Groups .
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-Classical or EC2-VPC. For more information, see Amazon EC2 Security Groups .
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 Amazon EC2 EBS Volume Limit Form .

Amazon Elastic Compute Cloud API Reference
Client Errors For Specific Actions

Error Code	Description
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 Amazon VPC Limits . To request an increase on your subnet limit, complete the Amazon VPC Limits form .
TagLimitExceeded	You've reached the limit on the number of tags that you can assign to the specified resource. For more information, see Tag Restrictions .
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.
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 Amazon EC2 EBS Volume Limit Form .
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.
VpcCidrConflict	You cannot enable a VPC for ClassicLink if the VPC has routing that conflicts with the EC2-Classic private IP address range of <code>10/8</code> ; for example, if your VPC's route table points to <code>10.0.0.0/16</code> for a VPC peering connection. This excludes local routes for VPCs in the <code>10.0.0.0/16</code> and <code>10.1.0.0/16</code> IP address ranges. For more information, see Routing for ClassicLink .
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 AWS Support to create a new default VPC.

Error Code	Description
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 Amazon VPC Limits . To request an increase on your VPC limit, complete the Amazon VPC Limits form .
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 Amazon VPC Limits . To request an increase on your VPN connection limit, complete the Amazon VPC Limits form .
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 Amazon VPC Limits . To request an increase on your virtual private gateway limit, complete the Amazon VPC Limits form .

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 \(p. 531\)](#).
- **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 \(p. 530\)](#).
- **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`.

Server Errors

This section lists all the server errors that can be returned.

Error Code	Description
<code>InsufficientAddressCapacity</code>	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.
<code>InsufficientInstanceCapacity</code>	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. You can also try launching an instance by selecting different instance types (which you can resize at a later stage). The returned message might also give specific guidance about how to solve the problem.
<code>InsufficientReservedInstanceCapacity</code>	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.
<code>InternalServerError</code>	An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a message on the AWS forums .
<code>InternalFailure</code>	The request processing has failed because of an unknown error, exception or failure.
<code>ServiceUnavailable</code>	The request has failed due to a temporary failure of the server.
<code>Unavailable</code>	The server is overloaded and can't handle the request.

Example 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>
```

The following shows an example of an error response.

```
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-1a2b3c4d' does not exist</Message>
    </Error>
  </Errors>
  <RequestID>ea966190-f9aa-478e-9ede-example</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 \(p. 531\)](#).