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# Amazon Elastic Compute Cloud

## API Reference

API Version 2013-07-15



## Amazon Elastic Compute Cloud: API Reference

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# Welcome

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This is the *Amazon Elastic Compute Cloud API Reference*. It provides descriptions, syntax, and usage examples for each of the actions and data types for Amazon EC2 and 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.

How Do I?	Relevant Topics
Download the current WSDL	<a href="#">Ec2.wsdl (2013-07-15)</a>
Learn about using the Query API	<a href="#">Making API Requests</a>
Get the list of API actions by function	<a href="#">List of Actions by Function (p. 2)</a>
Get the alphabetical list of API actions	<a href="#">Actions (p. 8)</a>
Get the alphabetical list of data types	<a href="#">Data Types (p. 434)</a>
Get the list of common parameters	<a href="#">Common Query Parameters (p. 525)</a>
Get descriptions of the error codes	<a href="#">Error Codes (p. 531)</a>
Download and learn about the AWS SDKs	<a href="#">AWS SDKs and Tools</a>

## Related Topics

- [Amazon EC2 product page](#)
- [Amazon Elastic Compute Cloud User Guide](#)
- [Amazon Virtual Private Cloud User Guide](#)
- [Amazon Elastic Compute Cloud Command Line Reference](#)



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- [StopInstances](#) (p. 426)
- [TerminateInstances](#) (p. 428)
- [UnassignPrivateIpAddresses](#) (p. 430)
- [UnmonitorInstances](#) (p. 432)

# AllocateAddress

## Description

Acquires an Elastic IP address.

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

## Request Parameters

### *Domain*

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

Type: String

Valid values: `vpc`

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

Required: Conditional

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

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `publicIp`

The Elastic IP address.

Type: `xsd:string`

### `domain`

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

Type: `xsd:string`

Valid values: `standard` | `vpc`

### `allocationId`

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

Type: `xsd:string`

## Examples

### Example Request

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

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

## Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>192.0.2.1</publicIp>
  <domain>standard</domain>
</AllocateAddressResponse>
```

## Example Request

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

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

## Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>198.51.100.1</publicIp>
  <domain>vpc</domain>
  <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

## Related Actions

- [DescribeAddresses](#) (p. 168)
- [ReleaseAddress](#) (p. 380)
- [AssociateAddress](#) (p. 17)
- [DisassociateAddress](#) (p. 332)

# AssignPrivateIpAddresses

## Description

Assigns one or more secondary private IP addresses to the specified network interface. You can specify one or more specific secondary IP addresses, or you can specify the number of secondary IP addresses to be automatically assigned within the subnet's CIDR block range. The number of secondary IP addresses that you can assign to an instance varies by instance type. For information about instance types, see [Available 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*.

This action is available only in EC2-VPC.

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress.n*

The IP address to be assigned as a secondary private IP address to the network interface. This option can be used multiple times to assign multiple secondary private IP addresses to the network interface.

If you do not specify an IP address, Amazon EC2 automatically selects an IP address within the subnet range.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 438)

Default: None

Required: Conditional

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

### *SecondaryPrivateIpAddressCount*

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

Type: Integer

Default: None

Required: Conditional

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

### *AllowReassignment*

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

Type: Boolean

Default: False

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**return**

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

Type: xsd:boolean

## Examples

### Example Request

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

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

### Example Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

### Example Request

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

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

### Example Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

## Related Actions

- [DescribeAddresses](#) (p. 168)
- [ReleaseAddress](#) (p. 380)

- [AssociateAddress](#) (p. 17)
- [DisassociateAddress](#) (p. 332)

# AssociateAddress

## Description

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

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

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

This is an idempotent operation. If you enter it more than once, Amazon EC2 does not return an error.

## Request Parameters

### *PublicIp*

The Elastic IP address.

Type: String

Default: None

Required: Conditional

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

### *InstanceId*

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

Type: String

Default: None

Required: Conditional

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

### *AllocationId*

[EC2-VPC] The allocation ID.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC.

### *NetworkInterfaceId*

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

Type: String

Default: None

Required: Conditional

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

### *PrivateIpAddress*

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

Type: String



Default: None

Required: No

***AllowReassociation***

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

Type: Boolean

Default: `false` if not specified

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

**associationId**

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

Type: `xsd:string`

## Examples

### Example Request

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

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

### Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>
```

### Example Request

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

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

## Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 168)
- [ReleaseAddress](#) (p. 380)
- [DisassociateAddress](#) (p. 332)

# AssociateDhcpOptions

## Description

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

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

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

## Request Parameters

### *DhcpOptionsId*

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

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

## Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
```

## Example Request

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

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

## Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
```

## Related Actions

- [CreateDhcpOptions](#) (p. 61)
- [DescribeDhcpOptions](#) (p. 183)
- [DeleteDhcpOptions](#) (p. 127)

# AssociateRouteTable

## Description

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

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

## Request Parameters

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `associationId`

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

Type: `xsd:string`

## Examples

### Example Request

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

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

## Example Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <associationId>rtbassoc-f8ad4891</associationId>  
</AssociateRouteTableResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 99)
- [DisassociateRouteTable](#) (p. 334)
- [DescribeRouteTables](#) (p. 261)
- [ReplaceRouteTableAssociation](#) (p. 389)

# AttachInternetGateway

## Description

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

## Request Parameters

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

## Example Response

```
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</AttachInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 70)
- [DeleteInternetGateway](#) (p. 129)
- [DetachInternetGateway](#) (p. 322)
- [DescribeInternetGateways](#) (p. 220)



# AttachNetworkInterface

## Description

Attaches a network interface to an instance.

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *DeviceIndex*

The index of the device for the network interface attachment.

Type: Integer

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the attachment request.

Type: xsd:string

### **attachmentId**

The ID of the network interface attachment.

Type: xsd:string

## Examples

### Example Request

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

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

## Example Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

## Related Actions

- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 80)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ResetNetworkInterfaceAttribute](#) (p. 406)

# AttachVolume

## Description

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

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

### Note

If a volume has an AWS Marketplace product code:

- The volume can only be attached to the root device of a stopped instance.
- You must be subscribed to the AWS Marketplace code that is on the volume.
- The configuration (instance type, operating system) of the instance must support that specific AWS Marketplace code. For example, you cannot take a volume from a Windows instance and attach it to a Linux instance.
- AWS Marketplace product codes are copied from the volume to the instance.

For an overview of the AWS Marketplace, see <https://aws.amazon.com/marketplace/help/200900000>. For details on how to use the AWS Marketplace, see [AWS Marketplace](#).

## Request Parameters

### *VolumeId*

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

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Device*

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

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

**volumeId**

The ID of the volume.

Type: xsd:string

**instanceId**

The ID of the instance.

Type: xsd:string

**device**

The device name.

Type: xsd:string

**status**

The attachment state of the volume.

Type: xsd:string

Valid values: attaching | attached | detaching | detached

**attachTime**

The time stamp when the attachment initiated.

Type: xsd:dateTime

## Examples

### Example Request

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

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

### Example Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 113)
- [DeleteVolume](#) (p. 154)
- [DescribeVolumes](#) (p. 301)
- [DetachVolume](#) (p. 326)

# AttachVpnGateway

## Description

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

## Request Parameters

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `attachment`

Information about the attachment.

Type: [AttachmentType](#) (p. 439)

## Examples

### Example Request

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

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

### Example Response

```
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<attachment>  
  <vpcId>vpc-1a2b3c4d</vpcId>  
  <state>attaching</state>  
</attachment>  
</AttachVpnGatewayResponse>
```

## Related Actions

- [CreateVpnGateway](#) (p. 123)
- [DescribeVpnGateways](#) (p. 319)
- [DetachVpnGateway](#) (p. 328)
- [CreateVpc](#) (p. 116)
- [CreateVpnConnection](#) (p. 118)

# AuthorizeSecurityGroupEgress

## Description

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

### Important

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

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

### *GroupId*

The ID of the security group to modify.

Type: String

Default: None

Required: Yes

### *IpPermissions.n.IpProtocol*

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

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

Type: String

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

Required: Yes

### *IpPermissions.n.FromPort*

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

### *IpPermissions.n.ToPort*

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.Groups.m.GroupId***

The name of the destination security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Condition: Required if modifying access for one or more destination security groups.

Required: Conditional

***IpPermissions.n.IpRanges.m.CidrIp***

The CIDR range. Cannot be used when specifying a destination security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

## Examples

### Example Request

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

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

### Example Request

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

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
```



```
&IpPermissions.1.FromPort=1433  
&IpPermissions.1.ToPort=1433  
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c  
&AUTHPARAMS
```

## Example Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</AuthorizeSecurityGroupEgressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 101)
- [DescribeSecurityGroups](#) (p. 265)
- [RevokeSecurityGroupEgress](#) (p. 410)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [RevokeSecurityGroupIngress](#) (p. 413)
- [DeleteSecurityGroup](#) (p. 144)

# AuthorizeSecurityGroupIngress

## Description

Adds one or more ingress rules to a security group.

### Important

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

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

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

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

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

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

## Request Parameters

### *UserId*

Deprecated

Required: No

### *GroupId*

The ID of the security group to modify. The security group must belong to your account.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC; can be used instead of `GroupName` otherwise

### *GroupName*

The name of the security group to modify.

Type: String

Default: None

Required: Conditional

Condition: For EC2-Classic, can be used instead of `GroupId`.

### *IpPermissions.n.IpProtocol*

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

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

Type: String

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

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

Required: Yes

***IpPermissions.n.FromPort***

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.ToPort***

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.Groups.m.UserId***

The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For security groups in EC2-Classic only. Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupName***

The name of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupId***

The ID of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For EC2-VPC only. Required if modifying access for one or more source security groups.

***IpPermissions.n.IpRanges.m.CidrIp***

The CIDR range. Cannot be used when specifying a source security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

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

**`requestId`**

The ID of the request.

Type: xsd:string

**return**

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

Type: xsd:boolean

## Examples

### Example Request

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

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

### Example Request

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

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

### Example Request

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

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

## Example Request

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

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

## Example Request

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

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

## Example Response

```
<AuthorizeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2013-  
07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>>true</return>  
</AuthorizeSecurityGroupIngressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 101)
- [DescribeSecurityGroups](#) (p. 265)
- [RevokeSecurityGroupIngress](#) (p. 413)
- [DeleteSecurityGroup](#) (p. 144)

# BundleInstance

## Description

Bundles an Amazon instance store-backed Windows instance.

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

**Note**

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

## Request Parameters

***InstanceId***

The ID of the instance to bundle.

Type: String

Default: None

Required: Yes

***Storage.S3.Bucket***

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

Type: String

Default: None

Required: Yes

***Storage.S3.Prefix***

The beginning of the file name of the AMI.

Type: String

Default: None

Required: Yes

***Storage.S3.AWSSecretAccessKeyId***

The access key ID of the owner of the Amazon S3 bucket.

Type: String

Default: None

Required: Yes

***Storage.S3.UploadPolicy***

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

Type: String

Default: None

Required: Yes

***Storage.S3.UploadPolicySignature***

The signature of the Base64 encoded JSON document.

Type: String

Default: None

Required: Yes

## JSON Parameters

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

**expiration**

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

Required: Yes

**conditions**

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

Required: Yes

**bucket**

The bucket to store the AMI.

Required: Yes

**acl**

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

Required: Yes

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**bundleInstanceTask**

The bundle task.

Type: [BundleInstanceTaskType](#) (p. 443)

## Examples

### Example Request

This example request bundles the instance with the ID `i-e468cd8d`.

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MDlaIiwiaWY29uZGl0aW9ucyI6IFt7ImJlY2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgIiRrZXkiLCaibXktbmV3LWltYWdlI10seyJhY2wiOiAiZWMyLWJlbnRsZS1yZWZkInlkaEXAMPLE
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3nlGNEXAMPLE
&AUTHPARAMS
```

## Example Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
    <bundleId>bun-c1a540a8</bundleId>
    <state>bundling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>70%</progress>
    <storage>
      <S3>
        <bucket>myawsbucket</bucket>
        <prefix>winami</prefix>
      </S3>
    </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```

## Related Actions

- [CancelBundleTask](#) (p. 42)
- [DescribeBundleTasks](#) (p. 175)
- [CreateImage](#) (p. 64)



# CancelBundleTask

## Description

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

## Request Parameters

### *BundleId*

The ID of the bundle task.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `bundleInstanceTask`

The bundle task.

Type: [BundleInstanceTaskType](#) (p. 443)

## Examples

### Example Request

This example request cancels the bundle task with the ID `bun-cla322b9`.

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

### Example Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
    <bundleId>bun-cla322b9</bundleId>
    <state>canceling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>20%</progress>
    <storage>
      <S3>
```

```
        <bucket>myawsbucket</bucket>  
        <prefix>my-new-image</prefix>  
    </S3>  
</storage>  
</bundleInstanceTask>  
</CancelBundleTaskResponse>
```

## Related Actions

- [BundleInstance](#) (p. 39)
- [DescribeBundleTasks](#) (p. 175)

# CancelConversionTask

## Description

Cancels 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*.

## Request Parameters

### *ConversionTaskId*

The ID of the conversion task.

Type: String

Default: None

Required: Yes

## Response Elements

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

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

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

### Example Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```

## Related Actions

- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)
- [DescribeConversionTasks](#) (p. 178)

# CancelExportTask

## Description

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

## Request Parameters

### *ExportTaskId*

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

Type: String

Default: None

Required: Yes

## Response Elements

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</CancelExportTask>
```

## Related Actions

- [CreateInstanceExportTask](#) (p. 67)
- [DescribeExportTasks](#) (p. 187)

# CancelReservedInstancesListing

## Description

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

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

## Request Parameters

### *reservedInstancesListingId*

The ID of the Reserved Instance listing to be canceled.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `reservedInstancesListingsSet`

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

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 450)

## Examples

### Example Request

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

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

### Example Response

The response shows that `status` is `CANCELLED`.

```
<CancelReservedInstancesListingResponse>
  <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-
7a18cEXAMPLE</reservedInstancesListingId>
```

```
<reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
  <createDate>2012-07-12T16:55:28.000Z</createDate>
  <updateDate>2012-07-12T16:55:28.000Z</updateDate>
  <status>cancelled</status>
  <statusMessage>CANCELLED</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>1</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>5</term>
      <price>166.64</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>4</term>
      <price>133.32</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>3</term>
      <price>99.99</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>2</term>
      <price>66.66</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>1</term>
      <price>33.33</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
  </priceSchedules>
  <tagSet/>
  <clientToken>XqJIt1342112125076</clientToken>
```

```
    </item>  
  </reservedInstancesListingsSet>  
</CancelReservedInstancesListingResponse>
```

## Related Actions

- [CreateReservedInstancesListing](#) (p. 87)
- [DescribeReservedInstancesListings](#) (p. 248)



# CancelSpotInstanceRequests

## Description

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

### Important

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

## Request Parameters

### *SpotInstanceRequestId.n*

One or more Spot Instance request IDs.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `spotInstanceRequestSet`

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

Type: [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 444)

## Examples

### Cancel a Spot Instance Request

#### To cancel Spot Instance requests

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

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

The following is an example response.

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>8cd6486a-80e1-494d-8a4f-be36cEXAMPLE</requestId>
  <spotInstanceRequestSet>
    ...
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.002000</spotPrice>
      <type>one-time</type>
      <state>open</state>
      <status>
        <code>not-scheduled-yet</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request will not be evaluated until YYYY-MM-DDTHH:MM:SS+0000 due to your 'Valid From' constraint.</message>
      </status>
      <validFrom>YYYY-MM-DDTHH:MM:SS.000Z</validFrom>
      <validUntil>YYYY-MM-DDTHH:MM:SS.000Z</validUntil>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-security-group</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>Linux</groupName>
          </item>
        </groupSet>
        <instanceType>t1.micro</instanceType>
        <blockDeviceMapping>
          <item>
            <deviceName>/dev/sda1</deviceName>
            <ebs>
              <volumeSize>8</volumeSize>
              <deleteOnTermination>true</deleteOnTermination>
              <volumeType>standard</volumeType>
            </ebs>
          </item>
        </blockDeviceMapping>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
      </launchSpecification>
      <createTime>2013-06-14T16:00:40.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
    </item>
    ...
  </spotInstanceRequestSet>
</DescribeSpotInstanceRequestsResponse>
```

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

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

The following is an example response.

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

**Tip**

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

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)
- [DescribeSpotPriceHistory](#) (p. 285)

# ConfirmProductInstance

## Description

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

## Request Parameters

### *ProductCode*

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

Type: String

Default: None

Required: Yes

### *InstanceId*

The instance.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

### **ownerId**

The instance owner's account ID. Only present if the product code is attached to the instance.

Type: xsd:string

## Examples

### Example Request

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

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

## Example Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

# CopyImage

## Description

Initiates the copy of an AMI from the specified source region to the region in which the request was made.

## Request Parameters

### *SourceRegion*

The name of the region that contains the AMI to be copied (source).

Type: String

Default: None

Required: Yes

### *SourceImageId*

The ID of the AMI to copy.

Type: String

Default: None

Required: Yes

### *Name*

The name of the new AMI in the destination region.

Type: String

Default: Same name as the AMI being copied.

Required: No

### *Description*

A description for the new AMI in the destination region.

Type: String

Default: Same description as the AMI being copied.

Constraints: Up to 255 characters

Required: No

### *ClientToken*

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

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **imageId**

The ID of the new AMI.

Type: xsd:string

**Tip**

You can use the common option `--region` to specify the region against which the command is executed. For AMI Copy, this will be the destination region.

## Examples

### Example Request

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

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

### Example Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

# CopySnapshot

## Description

Copies a point-in-time snapshot of an Amazon Elastic Block Store (Amazon EBS) volume and stores it in Amazon Simple Storage Service (Amazon S3). You can copy the snapshot within the same region or from one region to another. You can use the snapshot to create Amazon EBS volumes or Amazon Machine Images (AMIs).

For more information about Amazon EBS, see [Amazon Elastic Block Store \(Amazon EBS\)](#).

## Request Parameters

### *SourceRegion*

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

Type: String

Default: None

Required: Yes

### *SourceSnapshotId*

The ID of the Amazon EBS snapshot to copy.

Type: String

Default: None

Required: Yes

### *Description*

A description for the new Amazon EBS snapshot.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **snapshotId**

The ID of the new snapshot.

Type: xsd:string

## Examples

### Example Request

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



```
https://ec2.amazonaws.com/?Action=CopySnapshot
&AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE
&Description=My%20snapshot
&Signature=VjpSFePIKxDc1IUy92W3SBApdLiap7nno4pEc9iEXAMPLE
&SignatureMethod=HmacSHA256
&SignatureVersion=2
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1a2b3c4d
&Timestamp=2012-12-11T02%3A03%3A35.713Z
&Version=2012-12-01
```

## Example Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
<requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
<snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 104)
- [DeleteSnapshot](#) (p. 146)
- [DescribeSnapshots](#) (p. 271)

# CreateCustomerGateway

## Description

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

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 (Northern Virginia) Region, and 9059, which is reserved in the EU (Ireland) Region.

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

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

## Request Parameters

### Type

The type of VPN connection this customer gateway supports.

Type: String

Valid values: `ipsec.1`

Default: None

Required: Yes

### IpAddress

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

Type: String

Default: None

Required: Yes

### BgpAsn

For devices that support BGP, the customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: Integer

Default: 65000

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**customerGateway**

Information about the customer gateway.

Type: [CustomerGatewayType](#) (p. 446)

## Examples

### Example Request

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

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

### Example Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGateway>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
    <ipAddress>12.1.2.3</ipAddress>
    <bgpAsn>65534</bgpAsn>
    <tagSet/>
  </customerGateway>
</CreateCustomerGatewayResponse>
```

## Related Actions

- [DescribeCustomerGateways](#) (p. 180)
- [DeleteCustomerGateway](#) (p. 125)

# CreateDhcpOptions

## Description

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

DHCP Option Name	Description
domain-name-servers	The IP addresses of up to four domain name servers, or AmazonProvidedDNS. The default DHCP option set specifies AmazonProvidedDNS.
domain-name	If you're using AmazonProvidedDNS in US East (Northern Virginia) Region, specify <code>compute-1.amazonaws.com</code> . If you're using AmazonProvidedDNS in another region, specify <code>region.compute.amazonaws.com</code> . Otherwise, specify a domain name (for example, <code>MyCompany.com</code> ).
ntp-servers	The IP addresses of up to four Network Time Protocol (NTP) servers.
netbios-name-servers	The IP addresses of up to four NetBIOS name servers.
netbios-node-type	The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2 (broadcast and multicast are not currently supported). For more information about these node types, see <a href="#">RFC 2132</a> .

### Important

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

### *DhcpConfiguration.n.Key*

The name of a DHCP option.

Type: String

Default: None

Required: Yes

### *DhcpConfiguration.n.Value.m*

A value for the DHCP option.

Type: String

Default: None

Required: Yes

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**dhcpOptions**

A set of DHCP options.

Type: [DhcpOptionsType](#) (p. 457)

## Examples

### Example Request

This example request creates a set of DHCP options with a domain name `example.com` and two DNS servers (`10.2.5.1` and `10.2.5.2`).

```
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
&DhcpConfiguration.2.Value.2=10.2.5.2
&AUTHPARAMS
```

### Example Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
```

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

## Related Actions

- [AssociateDhcpOptions](#) (p. 20)
- [DescribeDhcpOptions](#) (p. 183)
- [DeleteDhcpOptions](#) (p. 127)

# CreateImage

## Description

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

### Note

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

For more information, see [Creating Amazon EBS-Backed Linux AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Name*

A name for the new image.

Type: String

Default: None

Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(\_)

Required: Yes

### *Description*

A description for the new image.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

### *NoReboot*

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

Type: Boolean

Default: `false`

Required: No

### *BlockDeviceMapping.n.DeviceName*

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

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify *DeviceName* with the root device name (for example, /dev/sda1 or xvda), and *BlockDeviceMapping.n.Ebs.SnapshotId* with the snapshot ID

***BlockDeviceMapping.n.NoDevice***

Suppresses a device mapping.

Type: Boolean

Default: true

Required: No

***BlockDeviceMapping.n.VirtualName***

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

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: Conditional

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

***BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

Valid values: If the volume type is *io1*, the minimum size of the volume is 10 GiB.

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

Required: No

***BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Default: true

Required: No

***BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: *standard* | *io1*

Default: *standard*

Required: No

***BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Required when the volume type is *io1*; not used with *standard* volumes.



## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**imageId**

The ID of the new AMI.

Type: xsd:string

## Examples

### Example Request

This example request creates an AMI from the instance with the ID `i-10a64379`.

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

### Example Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Related Actions

- [RunInstances](#) (p. 416)
- [DescribeInstances](#) (p. 202)
- [TerminateInstances](#) (p. 428)

# CreateInstanceExportTask

## Description

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

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

## Request Parameters

### *Description*

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

Type: String

Default: None

Required: No

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *TargetEnvironment*

The target virtualization environment.

Type: String

Valid values: vmware | citrix | microsoft

Default: None

Required: Yes

### *ExportToS3.DiskImageFormat*

The format for the exported image.

Type: String

Valid values: vmdk | vhd

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

Required: No

### *ExportToS3.ContainerFormat*

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

Type: String

Valid values: ova

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

Required: No

### *ExportToS3.S3Bucket*

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

Type: String

Default: None

Required: Yes

***ExportToS3.S3Prefix***

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

Type: String

Default: None

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**exportTask**

The details of the created ExportVM task.

Type: [ExportTaskResponseType](#) (p. 461)

## Examples

### Example Request

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

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

### Example Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
    </exportToS3>
  </exportTask>
</CreateInstanceExportTaskResponse>
```

```
<s3Bucket>my-bucket-for-exported-vm</s3Bucket>  
<s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>  
</exportToS3>  
</exportTask>  
</CreateInstanceExportTaskResponse>
```

## Related Actions

- [CancelExportTask](#) (p. 46)
- [DescribeExportTasks](#) (p. 187)

# CreateInternetGateway

## Description

Creates an Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using [AttachInternetGateway](#) (p. 24).

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

## Request Parameters

`AttachInternetGateway` has no parameters.

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **internetGateway**

Information about the Internet gateway

Type: [InternetGatewayType](#) (p. 480)

## Examples

### Example Request

This example request creates an Internet gateway.

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

### Example Response

```
CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGateway>
    <internetGatewayId>igw-eaad4883</internetGatewayId>
    <attachmentSet/>
    <tagSet/>
  </internetGateway>
</CreateInternetGatewayResponse>
```

## Related Actions

- [DeleteInternetGateway](#) (p. 129)

- [AttachInternetGateway](#) (p. 24)
- [DetachInternetGateway](#) (p. 322)
- [DescribeInternetGateways](#) (p. 220)

# CreateKeyPair

## Description

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

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

### Tip

The key pair returned to you is available only in the region in which you create it. To create a key pair that is available in all regions, use [ImportKeyPair](#) (p. 348).

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

## Request Parameters

### **KeyName**

A unique name for the key pair.

Type: String

Default: None

Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **keyName**

The name of the key pair name.

Type: xsd:string

### **keyFingerprint**

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

Type: xsd:string

### **keyMaterial**

An unencrypted PEM encoded RSA private key.

Type: xsd:string

## Examples

### Example Request

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

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

## Example Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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
VVMxCzAJBgNVBAGTAldBMRAdG9YDVQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC0lBTSBDb25zb2xlMRlWZDQYDVQDEw1UZXR0Q2lsYWMxHZAAd
BgkqhkiG9w0BCQEWEG5vb25lQGftYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRAdG9YD
VQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25z
b2xlMRlWZDQYDVQDEw1UZXR0Q2lsYWMxHZAAdBgkqhkiG9w0BCQEWEG5vb25lQGft
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLyGVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZncvcQAaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJiLJ00zbnNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----</keyMaterial>
</CreateKeyPairResponse>
```

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

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

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

```
----- BEGIN RSA PRIVATE KEY -----
MIICiTCCAfICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAGTAldBMRAdG9YDVQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC0lBTSBDb25zb2xlMRlWZDQYDVQDEw1UZXR0Q2lsYWMxHZAAd
BgkqhkiG9w0BCQEWEG5vb25lQGftYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAGTAldBMRAdG9YD
VQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25z
b2xlMRlWZDQYDVQDEw1UZXR0Q2lsYWMxHZAAdBgkqhkiG9w0BCQEWEG5vb25lQGft
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLyGVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZncvcQAaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJiLJ00zbnNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----
```



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

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

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

## Related Actions

- [RunInstances](#) (p. 416)
- [DescribeKeyPairs](#) (p. 223)
- [DeleteKeyPair](#) (p. 131)

# CreateNetworkAcl

## Description

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (on top of 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

### *vpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `networkAcl`

Information about the new network ACL.

Type: [NetworkAclType](#) (p. 488)

## Examples

### Example Request

This example request creates a network ACL in the VPC with the ID `vpc-11ad4878`. Notice that the response includes a default entry for egress, and another for ingress, each with a very high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.

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

### Example Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <networkAcl>
```

```
<networkAclId>acl-5fb85d36</networkAclId>
<vpcId>vpc-11ad4878</vpcId>
<default>>false</default>
<entrySet>
  <item>
    <ruleNumber>32767</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>deny</ruleAction>
    <egress>>true</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
  <item>
    <ruleNumber>32767</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>deny</ruleAction>
    <egress>>false</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
</entrySet>
<associationSet/>
<tagSet/>
</networkAcl>
</CreateNetworkAclResponse>
```

## Related Actions

- [DeleteNetworkAcl](#) (p. 132)
- [DescribeNetworkAcls](#) (p. 225)
- [ReplaceNetworkAclAssociation](#) (p. 382)

# CreateNetworkAclEntry

## Description

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

### Tip

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, ...), and not number them one right after the other (for example, 101, 102, 103, ...). This makes it easier to add a new 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 a new 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

### **NetworkAclId**

The ID of the ACL.

Type: String

Default: None

Required: Yes

### **RuleNumber**

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

Type: Integer

Default: None

Constraints: Positive integer from 1 to 32766

Required: Yes

### **Protocol**

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

Type: Integer

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

Required: Yes

### **RuleAction**

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

Type: String

Default: None

Valid values: `allow` | `deny`

Required: Yes

### **Egress**

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

Type: Boolean

Default: `false`

Valid values: `true` | `false`

Required: No

***CidrBlock***

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

Type: String

Default: None

Required: Yes

***Icmp.Code***

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

Type: Integer

Default: None

Required: Conditional

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

***Icmp.Type***

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

Type: Integer

Default: None

Required: Conditional

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

***PortRange.From***

The first port in the range.

Type: Integer

Default: None

Required: Conditional

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

***PortRange.To***

The last port in the range.

Type: Integer

Default: None

Required: Conditional

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

## Response Elements

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

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`return`**

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateNetworkAclEntryResponse>
```

## Related Actions

- [DeleteNetworkAclEntry](#) (p. 134)
- [ReplaceNetworkAclEntry](#) (p. 384)
- [DescribeNetworkAcls](#) (p. 225)

# CreateNetworkInterface

## Description

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

### *SubnetId*

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

Type: String

Default: None

Required: Yes

### *PrivateIpAddress*

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

Type: String

Default: None

Required: No

### *PrivateIpAddresses.n.PrivateIpAddress*

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

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

Type: String

Default: None

Required: No

### *PrivateIpAddresses.n.Primary*

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

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

Type: Boolean

Default: `false`

Required: No

### *SecondaryPrivateIpAddressCount*

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

The number of IP addresses you can assign to a network interface varies by instance type. For more information, see [Available Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*.

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

Type: Integer

Default: None

Required: No

**Description**

A description for the network interface.

Type: String

Default: None

Required: No

**SecurityGroupIds**

The list of security group IDs for the network interface.

Type: [SecurityGroupIdSetItemType](#) (p. 507)

Default: None

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**networkInterface**

The network interface that was created.

Type: [NetworkInterfaceType](#) (p. 491)

## Examples

### Example Request

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

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

### Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>8dbe591e-5a22-48cb-b948-dd0aadd55adf</requestId>
  <networkInterface>
    <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>>false</requesterManaged>
    <status>available</status>
    <macAddress>02:74:b0:72:79:61</macAddress>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <sourceDestCheck>>true</sourceDestCheck>
```



```
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<tagSet/>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <primary>true</primary>
  </item>
</privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example Request

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

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

## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>bd78c839-0895-4fac-a17f-98b559b6b630</requestId>
  <networkInterface>
    <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:70:7f:1a</macAddress>
    <privateIpAddress>10.0.2.140</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.140</privateIpAddress>
```

```
        <primary>true</primary>
      </item>
    <item>
      <privateIpAddress>10.0.2.172</privateIpAddress>
      <primary>false</primary>
    </item>
    <item>
      <privateIpAddress>10.0.2.169</privateIpAddress>
      <primary>false</primary>
    </item>
    <item>
      <privateIpAddress>10.0.2.170</privateIpAddress>
      <primary>false</primary>
    </item>
    <item>
      <privateIpAddress>10.0.2.171</privateIpAddress>
      <primary>false</primary>
    </item>
  </privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example Request

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

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

## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>a9565f4c-f928-4113-859b-905886d11658</requestId>
  <networkInterface>
    <networkInterfaceId>eni-41c47828</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:78:bf:ab</macAddress>
    <privateIpAddress>10.0.2.130</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
```

```
    <item>
      <groupId>sg-188d9f74</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <tagSet/>
  <privateIpAddressesSet>
    <item>
      <privateIpAddress>10.0.2.130</privateIpAddress>
      <primary>true</primary>
    </item>
    <item>
      <privateIpAddress>10.0.2.133</privateIpAddress>
      <primary>false</primary>
    </item>
    <item>
      <privateIpAddress>10.0.2.132</privateIpAddress>
      <primary>false</primary>
    </item>
  </privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [DetachNetworkInterface](#) (p. 324)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ResetNetworkInterfaceAttribute](#) (p. 406)

# CreatePlacementGroup

## Description

Creates a placement group that you launch cluster instances into. You must give the group a name 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

### GroupName

A name for the placement group.

Type: String

Default: None

Required: Yes

### Strategy

The placement strategy.

Type: String

Valid values: `cluster`

Required: Yes

## Response Elements

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

### requestId

The ID of the request.

Type: `xsd:string`

### return

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

## Example Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>>true</return>
</CreatePlacementGroupResponse>
```

## Related Actions

- [DeletePlacementGroup](#) (p. 138)
- [DescribePlacementGroups](#) (p. 238)

# CreateReservedInstancesListing

## Description

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

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

If you want 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 you want to receive for them. Your Reserved Instance listings then become available for purchase.

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

## Request Parameters

### *reservedInstancesId*

The ID of the active Reserved Instance.

Type: String

Default: None

Required: Yes

### *instanceCount*

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

Type: Integer

Default: None

Required: Yes

### *priceSchedules*

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

Type: [PriceScheduleRequestSetItem](#) (p. 495)

Required: Yes

### *clientToken*

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, go to [Ensuring Idempotency](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Default: None

Required: Yes

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**reservedInstancesListingSet**

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

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 450)

## Examples

### Example Request

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

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

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

### Example Response

```
<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
```

```
9e57dEXAMPLE</reservedInstancesListingId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
  <createDate>2012-07-17T17:11:09.449Z</createDate>
  <updateDate>2012-07-17T17:11:09.468Z</updateDate>
  <status>active</status>
  <statusMessage>ACTIVE</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>1</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>11</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>true</active>
    </item>
    <item>
      <term>10</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>9</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>8</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>7</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>6</term>
```



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

## List a Reserved Instance in the Reserved Instance Marketplace

### To list a Reserved Instance in the Reserved Instance Marketplace

1. Get a list of your Reserved Instances by calling [DescribeReservedInstances](#) (p. 244).

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

The following is an example response.

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
```

```

<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<reservedInstancesSet>
...
  <item>
    <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
    <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>

```

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

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

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

The call should look like this example:

```

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

```

The following is an example response.

```

<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dEXAMPLE</requestId>
  <reservedInstancesListingsSet>

```

```
<item>
  <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
9e57dEXAMPLE</reservedInstancesListingId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</re
servedInstancesId>
  <createDate>2012-08-30T17:11:09.449Z</createDate>
  <updateDate>2012-08-30T17:11:09.468Z</updateDate>
  <status>active</status>
  <statusMessage>active</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>3</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>11</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>true</active>
    </item>
    <item>
      <term>10</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>9</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>8</term>
      <price>2.00</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>7</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
  </priceSchedules>
</item>
```

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

3. To view the details of your Reserved Instance listing, run [DescribeReservedInstancesListings](#) (p. 248).

The command should look like this example:

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

Following is an example response.

```
<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
```

```
<reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942cEXAMPLE</reservedInstancesListingId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</re
servedInstancesId>
  <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>
```

## Related Actions

- [CancelReservedInstancesListing \(p. 47\)](#)
- [DescribeReservedInstancesListings \(p. 248\)](#)

# CreateRoute

## Description

Creates a route in a route table within a VPC. The route's target can be either a gateway attached to the VPC or a NAT instance in the VPC.

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

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

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

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

## Request Parameters

### ***RouteTableId***

The ID of the route table for the route.

Type: String

Default: None

Required: Yes

### ***DestinationCidrBlock***

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

Type: String

Default: None

Required: Yes

### ***GatewayId***

The ID of an Internet gateway attached to your VPC.

Type: String

Default: None

Required: Conditional

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

### ***InstanceId***

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

Type: String

Default: None

Required: Conditional

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

### ***NetworkInterfaceId***

The ID of a network interface.

Type: String  
Default: None  
Required: Conditional  
Condition: You must specify one of the following: `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Request

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

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

### Example Response

```
<CreateRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateRouteResponse>
```



## Related Actions

- [DeleteRoute](#) (p. 140)
- [ReplaceRoute](#) (p. 387)
- [DescribeRouteTables](#) (p. 261)

# CreateRouteTable

## Description

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

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

## Request Parameters

### *vpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: xsd:string

### `routeTable`

Information about the newly created route table.

Type: [RouteTableType](#) (p. 503)

## Examples

### Example Request

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

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

### Example Response

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

```
CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
    <routeTableId>rtb-f9ad4890</routeTableId>
```

```
<vpcId>vpc-11ad4878</vpcId>
<routeSet>
  <item>
    <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
    <gatewayId>local</gatewayId>
    <state>active</state>
  </item>
</routeSet>
<associationSet/>
<tagSet/>
</routeTable>
</CreateRouteTableResponse>
```

## Related Actions

- [AssociateRouteTable](#) (p. 22)
- [DisassociateRouteTable](#) (p. 334)
- [DescribeRouteTables](#) (p. 261)
- [DeleteRouteTable](#) (p. 142)
- [ReplaceRouteTableAssociation](#) (p. 389)
- [CreateRoute](#) (p. 96)

# CreateSecurityGroup

## Description

Creates a security group.

### Important

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

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

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

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

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

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

## Request Parameters

### **GroupName**

The name of the security group.

Type: String

Default: None

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

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

Required: Yes

### **GroupDescription**

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

Type: String

Default: None

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

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

Required: Yes

### **VpcId**

[EC2-VPC] The ID of the VPC.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC.

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

**groupId**

The ID of the new security group.

Type: `xsd:string`

## Examples

### Example Request

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

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

### Example Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

### Example Request

This example request creates a security group named `WebServerSG` for the VPC with the ID `vpc-3325caf2`.

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

### Example Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<return>>true</return>  
<groupId>sg-0a42d66a</groupId>  
</CreateSecurityGroupResponse>
```

## Related Actions

- [RunInstances](#) (p. 416)
- [DescribeSecurityGroups](#) (p. 265)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [RevokeSecurityGroupIngress](#) (p. 413)
- [DeleteSecurityGroup](#) (p. 144)

# CreateSnapshot

## Description

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

When a snapshot is created, any AWS Marketplace product codes from the 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 writes to the volume long enough to take a snapshot, your snapshot should be complete. However, if you can't pause all file writes to the volume, you should unmount the volume from within the instance, issue the snapshot command, and then remount the volume to ensure a consistent and complete snapshot. You 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.

To unmount the volume in Linux/UNIX, use the following command:

```
umount -d device_name
```

Where *device\_name* is the device name (for example, `/dev/sdh`).

To unmount the volume in Windows, open Disk Management, right-click the volume to unmount, and select **Change Drive Letter and Path**. Select the mount point to remove, and then click **Remove**.

For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *VolumeId*

The ID of the Amazon EBS volume.

Type: String

Default: None

Required: Yes

### *Description*

A description for the snapshot.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

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

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

**snapshotId**  
The ID of the snapshot.  
Type: xsd:string

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

**status**  
The snapshot state.  
Type: xsd:string  
Valid values: pending | completed | error

**startTime**  
The time stamp when the snapshot was initiated.  
Type: xsd:dateTime

**progress**  
The progress of the snapshot, as a percentage.  
Type: xsd:string

**ownerId**  
The AWS account ID of the Amazon EBS snapshot owner.  
Type: xsd:string

**volumeSize**  
The size of the volume, in GiB.  
Type: xsd:string

**description**  
The description for the snapshot.  
Type: xsd:string

## Examples

### Example Request

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

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

### Example Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
```

## Related Actions

- [DeleteSnapshot](#) (p. 146)
- [DescribeSnapshots](#) (p. 271)

# CreateSpotDatafeedSubscription

## Description

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

## Request Parameters

### *Bucket*

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

Type: String

Default: None

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

Required: Yes

### *Prefix*

A prefix for the datafeed file names.

Type: String

Default: None

Required: No

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `spotDatafeedSubscription`

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

## Examples

### Example Request

This example request creates the data feed for the account.

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

### Example Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2013-
07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<spotDatafeedSubscription>  
  <ownerId>111122223333</ownerId>  
  <bucket>myawsbucket</bucket>  
  <prefix>spotdata_</prefix>  
  <state>Active</state>  
</spotDatafeedSubscription>  
</CreateSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [DeleteSpotDatafeedSubscription](#) (p. 148)
- [DescribeSpotDatafeedSubscription](#) (p. 276)

# CreateSubnet

## Description

Creates a subnet in an existing VPC.

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

### Important

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

If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle. By default, you can create up to 20 subnets in a VPC. If you need more than 20 subnets, you can request more by going to [Request to Increase Amazon VPC Limits](#).

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

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

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

### *CidrBlock*

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

Type: String

Default: None

Required: Yes

### *AvailabilityZone*

The Availability Zone for the subnet.

Type: String

Default: Amazon EC2 selects one for you (recommended)

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**subnet**

Information about the subnet.

Type: [SubnetType](#) (p. 514)

## Examples

### Example Request

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

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

### Example Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
    <subnetId>subnet-9d4a7b6c</subnetId>
    <state>pending</state>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlock>10.0.1.0/24</cidrBlock>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
```

## Related Actions

- [DescribeSubnets](#) (p. 289)
- [DeleteSubnet](#) (p. 149)

# CreateTags

## Description

Adds or overwrites one or more tags for the specified 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

### ***ResourceId.n***

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

Type: String

Default: None

Required: Yes

### ***Tag.n.Key***

The key for a tag.

Type: String

Default: None

Constraints: Tag keys are case sensitive and accept a maximum of 127 Unicode characters.

Required: Yes

### ***Tag.n.Value***

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

Type: String

Default: None

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

Required: Yes

## Response Elements

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

### **`requestId`**

The ID of the request.

Type: `xsd:string`

### **`return`**

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Response

```
<CreateTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</CreateTagsResponse>
```

## Related Actions

- [DescribeTags](#) (p. 293)
- [DeleteTags](#) (p. 151)

# CreateVolume

## Description

Creates an Amazon EBS volume that can be attached to any instance in the same Availability Zone.

Any AWS Marketplace product codes from the snapshot are propagated to the volume.

For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### **Size**

The size of the volume, in GiBs.

Type: String

Valid values: 1-1024

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

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

Required: No

### **SnapshotId**

The snapshot from which to create the volume.

Type: String

Default: None

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

Required: Conditional

### **AvailabilityZone**

The Availability Zone in which to create the volume. Use [DescribeAvailabilityZones \(p. 172\)](#) to list the Availability Zones that are currently available to you.

Type: String

Default: None

Required: Yes

### **VolumeType**

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

### **Iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Conditional

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



## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**volumeId**

The ID of the volume.

Type: `xsd:string`

**size**

The size of the volume, in GiBs.

Type: `xsd:string`

**snapshotId**

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

Type: `xsd:string`

**availabilityZone**

The Availability Zone for the volume.

Type: `xsd:string`

**status**

The volume state.

Type: `xsd:string`

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

**createTime**

The time stamp when volume creation was initiated.

Type: `xsd:dateTime`

**volumeType**

The volume type.

Type: `xsd:string`

Valid values: `standard` | `io1`

**iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: `xsd:int`

Valid values: Range is 100 to 4000.

## Examples

### Example Request

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

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

## Example Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
</CreateVolumeResponse>
```

## Related Actions

- [DeleteVolume](#) (p. 154)
- [DescribeVolumes](#) (p. 301)
- [AttachVolume](#) (p. 28)
- [DetachVolume](#) (p. 326)
- [DescribeAvailabilityZones](#) (p. 172)

# CreateVpc

## Description

Creates a VPC with the specified CIDR block.

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

### *CidrBlock*

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

Type: String

Default: None

Required: Yes

### *instanceTenancy*

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

Type: String

Valid values: `default` | `dedicated`

Default: `default`

Required: No

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `vpc`

Information about the VPC.

Type: [VpcType](#) (p. 520)

## Examples

### Example Request

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

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

## Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpc>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>default</instanceTenancy>
    <tagSet/>
  </vpc>
</CreateVpcResponse>
```

## Example Request

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

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

## Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>a9e49797-a74f-4f68-b302-a134a51fd054</requestId>
  <vpc>
    <vpcId>vpc-11a63c78</vpcId>
    <state>pending</state>
    <cidrBlock>10.32.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>dedicated</instanceTenancy>
  </vpc>
</CreateVpcResponse>
```

## Related Actions

- [DescribeVpcs](#) (p. 312)
- [DeleteVpc](#) (p. 156)
- [CreateDhcpOptions](#) (p. 61)
- [AssociateDhcpOptions](#) (p. 20)

# CreateVpnConnection

## Description

Creates a VPN connection between an existing virtual private gateway and a VPN customer gateway. The only supported connection type is `ipsec.1`.

The response includes information that you need to give to your network administrator to configure your customer gateway. We recommend that you use the command line version of this operation (**ec2-create-vpn-connection**), which lets you get the configuration information formatted in a friendlier way. For information about the command, see [ec2-create-vpn-connection](#) in the *Amazon Elastic Compute Cloud Command Line Reference*.

### Important

We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your customer gateway.

If you decide to shut down your VPN connection for any reason and later create a new VPN connection, you must reconfigure your customer gateway with the new information returned from this call.

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

## Request Parameters

### Type

The type of VPN connection.

Type: String

Valid values: `ipsec.1`

Default: None

Required: Yes

### CustomerGatewayId

The ID of the customer gateway.

Type: String

Default: None

Required: Yes

### VpnGatewayId

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### Options.StaticRoutesOnly

Indicates whether the VPN connection requires static routes. If you are creating a VPN connection for a device that does not support BGP, you must specify `true`.

Type: Boolean

Default: `false`

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**vpnConnection**

Information about the VPN connection.

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

## Examples

### Example Request

This example request creates a VPN connection between the virtual private gateway with the ID `vgw-8db04f81` and the customer gateway with the ID `cgw-b4dc3961`. The response includes configuration information for the customer gateway (in the native XML format, but escaped). Because it's a long set of information, we haven't included the complete response here. To see an example of the information returned, see the [Amazon Virtual Private Cloud Network Administrator Guide](#).

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

### Example Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      <?xml version="1.0" encoding="UTF-8"?>
      <vpn_connection id="vpn-44a8938f">
        <customer_gateway_id>cgw-b4dc3961</customer_gateway_id>
        <vpn_gateway_id>vgw-8db04f81</vpn_gateway_id>
        <vpn_connection_type>ipsec.1</vpn_connection_type>
        ...
      </vpn_connection>
    </customerGatewayConfiguration>
    <type>ipsec.1</type>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <tagSet/>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

### Example Request

This example request creates a VPN connection with the static routes option between the virtual private gateway with the ID `vgw-8db04f81`, and the customer gateway with the ID `cgw-b4dc3961`, for a device that does not support the Border Gateway Protocol (BGP). The response includes configuration information

for the VPN connection's customer gateway (in the native XML format, but escaped). Because it's a long set of information, we haven't included the complete response here.

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

## Example Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>5cc7891f-1f3b-4fc4-a626-bdea8f63ff5a</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-83ad48ea</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      <?xml version="1.0" encoding="UTF-8"?>
      <vpn_connection id="vpn-83ad48ea">
        <customer_gateway_id>cgw-63ae4b0a</customer_gateway_id>
        <vpn_gateway_id>vgw-4ea04527</vpn_gateway_id>
        <vpn_connection_type>ipsec.1</vpn_connection_type>
        <vpn_connection_attributes>NoBGPVpnConnection</vpn_connection_attributes>
        ...
      </vpn_connection>
    </customerGatewayConfiguration>
    <customerGatewayId>cgw-63ae4b0a</customerGatewayId>
    <vpnGatewayId>vgw-4ea04527</vpnGatewayId>
    <options>
      <staticRoutesOnly>true</staticRoutesOnly>
    </options>
    <routes/>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

## Related Actions

- [DescribeVpnConnections](#) (p. 315)
- [DeleteVpnConnection](#) (p. 158)
- [CreateVpc](#) (p. 116)
- [CreateSubnet](#) (p. 109)
- [AttachVpnGateway](#) (p. 30)

# CreateVpnConnectionRoute

## Description

Creates a static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

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

## Request Parameters

### *DestinationCidrBlock*

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

Type: String

Default: None

Required: Yes

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example request creates a static route to the VPN connection for the VPN connection with the ID `vpn-83ad48ea` to the destination CIDR block `11.12.0.0/16`. Note that when using the Query API the `/` is denoted as `%2F`.

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



## Example Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```

## Related Actions

- [DeleteVpnConnectionRoute](#) (p. 160)
- [DeleteVpnConnection](#) (p. 158)
- [DescribeVpnConnections](#) (p. 315)
- [CreateVpc](#) (p. 116)
- [CreateSubnet](#) (p. 109)
- [AttachVpnGateway](#) (p. 30)

# CreateVpnGateway

## Description

Creates a virtual private gateway. A virtual private gateway is the VPC-side endpoint for 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

### Type

The type of VPN connection this virtual private gateway supports.

Type: String

Valid values: `ipsec.1`

Default: None

Required: Yes

## Response Elements

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

### requestId

The ID of the request.

Type: `xsd:string`

### vpnGateway

Information about the virtual private gateway.

Type: [VpnGatewayType](#) (p. 522)

## Examples

### Example Request

This example request creates a virtual private gateway.

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

### Example Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGateway>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
```

```
<availabilityZone>us-east-1a</availabilityZone>  
<attachments/>  
<tagSet/>  
</vpnGateway>  
</CreateVpnGatewayResponse>
```

## Related Actions

- [DescribeVpnGateways](#) (p. 319)
- [DeleteVpnGateway](#) (p. 162)
- [AttachVpnGateway](#) (p. 30)
- [DetachVpnGateway](#) (p. 328)

# DeleteCustomerGateway

## Description

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

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

### *CustomerGatewayId*

The ID of the customer gateway.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the customer gateway with the ID `cgw-b4dc3961`.

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

### Example Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteCustomerGatewayResponse>
```

## Related Actions

- [CreateCustomerGateway](#) (p. 59)
- [DescribeCustomerGateways](#) (p. 180)

# DeleteDhcpOptions

## Description

Deletes the specified set of DHCP options. You must disassociate the set of DHCP options before you can delete it. You can disassociate the set of DHCP options by associating either a new set of options or the default set of options with the VPC.

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

## Request Parameters

### *DhcpOptionsId*

The ID of the DHCP options set.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example request deletes the set of DHCP options with the ID `dopt-7a8b9c2d`.

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

### Example Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteDhcpOptionsResponse>
```

## Related Actions

- [AssociateDhcpOptions](#) (p. 20)
- [CreateDhcpOptions](#) (p. 61)
- [DescribeDhcpOptions](#) (p. 183)

# DeleteInternetGateway

## Description

Deletes the specified Internet gateway. You must detach the Internet gateway from the VPC before you can delete it. For more information about your VPC and Internet gateway, see the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the Internet gateway with the ID `igw-eaad4883`.

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

### Example Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```



## Related Actions

- [CreateInternetGateway](#) (p. 70)
- [AttachInternetGateway](#) (p. 24)
- [DetachInternetGateway](#) (p. 322)
- [DescribeInternetGateways](#) (p. 220)

# DeleteKeyPair

## Description

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

## Request Parameters

### *KeyName*

The name of the key pair.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

## Related Actions

- [CreateKeyPair](#) (p. 72)
- [DescribeKeyPairs](#) (p. 223)
- [ImportKeyPair](#) (p. 348)

# DeleteNetworkAcl

## Description

Deletes the specified network ACL. You can't delete the ACL if it's associated with any subnets. You can't delete the default network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *NetworkAclId*

The ID of the network ACL.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the network ACL with the ID `acl-2cb85d45`.

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

### Example Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclResponse>
```

## Related Actions

- [DeleteNetworkAcl](#) (p. 132)

- [DescribeNetworkAcls](#) (p. 225)
- [ReplaceNetworkAclAssociation](#) (p. 382)

# DeleteNetworkAclEntry

## Description

Deletes the specified ingress or egress entry (rule) from the specified network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *NetworkAclId*

The ID of the network ACL.

Type: String

Default: None

Required: Yes

### *RuleNumber*

The rule number for the entry to delete.

Type: Integer

Default: None

Required: Yes

### *Egress*

Indicates whether the rule is an egress rule (`true`) or ingress rule (`false`).

Type: Boolean

Valid values: `true` | `false`

Default: `false`

Required: No

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the ingress entry with rule number 100 from the network ACL with the ID `acl-2cb85d45`.

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

```
&RuleNumber=100  
&AUTHPARAMS
```

## Example Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteNetworkAclEntryResponse>
```

## Related Actions

- [CreateNetworkAclEntry](#) (p. 77)
- [ReplaceNetworkAclEntry](#) (p. 384)
- [DescribeNetworkAcls](#) (p. 225)

# DeleteNetworkInterface

## Description

Deletes the specified network interface. You must detach the network interface before you can delete it.

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the network interface with the ID `eni-ffda3197`.

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

### Example Response

```
<DeleteNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [DetachNetworkInterface](#) (p. 324)

- [CreateNetworkInterface](#) (p. 80)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ResetNetworkInterfaceAttribute](#) (p. 406)



# DeletePlacementGroup

## Description

Deletes the specified placement group. You must terminate all instances in the placement group before you can delete the placement group. For more information about placement groups and cluster instances, see [Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *GroupName*

The name of the placement group.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the placement group named `XYZ-cluster`.

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

### Example Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>>true</return>
</DeletePlacementGroupResponse>
```

## Related Actions

- [CreatePlacementGroup](#) (p. 85)
- [DescribePlacementGroups](#) (p. 238)

# DeleteRoute

## Description

Deletes the specified route from the specified route table. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *DestinationCidrBlock*

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

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the route with destination CIDR `172.16.1.0/24` from the route table with the ID `rtb-e4ad488d`.

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

### Example Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteRouteResponse>
```

## Related Actions

- [CreateRoute](#) (p. 96)
- [ReplaceRoute](#) (p. 387)
- [DescribeRouteTables](#) (p. 261)

# DeleteRouteTable

## Description

Deletes the specified route table. You must disassociate the route table from any subnets before you can delete it. You can't delete the main route table. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the route table with the ID `rtb-e4ad488d`.

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

### Example Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteTableResponse>
```

## Related Actions

- [AssociateRouteTable](#) (p. 22)

- [DisassociateRouteTable](#) (p. 334)
- [DescribeRouteTables](#) (p. 261)
- [CreateRouteTable](#) (p. 99)
- [ReplaceRouteTableAssociation](#) (p. 389)

# DeleteSecurityGroup

## Description

Deletes a security group.

### Important

If you attempt to delete a security group that is associated with an instance, or is referenced by another security group, the operation fails with `InvalidGroup.InUse` in EC2-Classic or `DependencyViolation` in EC2-VPC.

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

## Request Parameters

### *GroupName*

The name of the security group.

Type: String

Default: None

Required: Conditional

Condition: [EC2-Classic, default VPC] You can specify either `GroupName` or `GroupId`

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Conditional

Condition: Required for a nondefault VPC; for EC2-Classic or a default VPC, you can specify either `GroupName` or `GroupId`

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the security group for EC2-Classic named `websrv`.

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

## Example Request

This example request deletes the security group for EC2-VPC with the ID `sg-1a2b3c4d`.

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

## Example Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 101)
- [DescribeSecurityGroups](#) (p. 265)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [RevokeSecurityGroupIngress](#) (p. 413)



# DeleteSnapshot

## Description

Deletes the specified snapshot.

### Note

- If you make periodic snapshots of a volume, the snapshots are incremental so that only the blocks on the device that have changed since your last snapshot are saved in the new snapshot. Even though snapshots are saved incrementally, the snapshot deletion process is designed so that you need to retain only the most recent snapshot in order to restore the volume.
- You cannot delete a snapshot of the root device of an EBS volume used by a registered AMI. You must first de-register the AMI before you can delete the snapshot.

## Request Parameters

### *SnapshotId*

The ID of the Amazon EBS snapshot.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteSnapshotResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 104)
- [DescribeSnapshots](#) (p. 271)

# DeleteSpotDatafeedSubscription

## Description

Deletes the datafeed for Spot Instances. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

DeleteSpotDatafeedSubscription has no parameters.

## Response Elements

The following elements are returned in a DeleteSpotDatafeedSubscriptionResponse element.

**requestId**

The ID of the request.

Type: xsd:string

**return**

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

Type: xsd:boolean

## Examples

### Example Request

This example request deletes the data feed for the account.

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

### Example Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [CreateSpotDatafeedSubscription](#) (p. 107)
- [DescribeSpotDatafeedSubscription](#) (p. 276)

# DeleteSubnet

## Description

Deletes the specified subnet. You must terminate all running instances in the subnet before you can delete the subnet.

## Request Parameters

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the subnet with the ID `subnet-9d4a7b6c`.

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

### Example Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteSubnetResponse>
```

## Related Actions

- [CreateSubnet](#) (p. 109)

- [DescribeSubnets](#) (p. 289)

# DeleteTags

## Description

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

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

## Request Parameters

### ***ResourceId.n***

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

Type: String

Default: None

Required: Yes

### ***Tag.n.Key***

The tag's key. You can specify more than one tag to delete.

Type: String

Default: None

Required: Yes

### ***Tag.n.Value***

The tag's value.

Type: String

Default: If you omit this parameter, we delete the tag regardless of its value. If you specify this parameter with an empty string as the value, we delete the key only if its value is an empty string.

Required: No

## Response Elements

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

### **`requestId`**

The ID of the request.

Type: `xsd:string`

### **`return`**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example deletes the tags for the AMI with the ID `ami-1a2b3c4d`. First, get a list of the tags using the following request.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&ResourceId.1=ami-1a2b3c4d
&AUTHPARAMS
```

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
```

Next, delete the tags.

```
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/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</DeleteTagsResponse>
```

## Example Request

This example deletes the stack tag from two particular instances.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=stack
&ResourceId.2=i-12345678
&Tag.2.Key=stack
&AUTHPARAMS
```

## Example Request

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

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

## Example Request

You can specify a tag key without a corresponding tag value if you want to delete the tag regardless of its value. This example request deletes all tags whose that have a key of `Purpose`, regardless of the tag value.

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

## Example Request

When you create a tag, you can set the tag value to the empty string. Correspondingly, you can delete only tags that have a specific key and whose value is the empty string. This example request deletes all tags for the specified instance where the key is `Purpose` and the tag value is the empty string.

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

## Related Actions

- [CreateTags](#) (p. 111)
- [DescribeTags](#) (p. 293)



# DeleteVolume

## Description

Deletes the specified Amazon EBS volume. The volume must be in the `available` state (not attached to an instance). For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

The volume remains in the `deleting` state for several minutes.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

### Example Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 113)
- [DescribeVolumes](#) (p. 301)
- [AttachVolume](#) (p. 28)
- [DetachVolume](#) (p. 326)

# DeleteVpc

## Description

Deletes the specified VPC. You must detach or delete all gateways and resources that are associated with the VPC before you can delete it. For example, you must terminate all instances running in the VPC, delete all security groups associated with the VPC (except the default one), delete all route tables associated with the VPC (except the default one), and so on.

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example request deletes the VPC with the ID `vpc-1a2b3c4d`.

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

### Example Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcResponse>
```

## Related Actions

- [CreateVpc](#) (p. 116)
- [DescribeVpcs](#) (p. 312)

# DeleteVpnConnection

## Description

Deletes the specified VPN connection.

If you're deleting the VPC and its associated components, we recommend that you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection.

Another reason to use this command is if you believe that the tunnel credentials for your VPN connection have been compromised. In that situation, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway using the new configuration information returned with the new VPN connection ID.

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

## Request Parameters

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deletes the VPN connection with the ID `vpn-44a8938f`.

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

## Example Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteVpnConnectionResponse>
```

## Related Actions

- [CreateVpnConnection](#) (p. 118)
- [DescribeVpnConnections](#) (p. 315)
- [DetachVpnGateway](#) (p. 328)
- [DeleteVpc](#) (p. 156)

# DeleteVpnConnectionRoute

## Description

Deletes the specified static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

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

### *DestinationCidrBlock*

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

Type: String

Default: None

Required: Yes

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example request deletes a static route to the destination CIDR block `11.12.0.0/16` associated with the VPN connection with the ID `vpn-83ad48ea`. Note that when using the Query API the "/" is denoted as "%2F".

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

## Example Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DeleteVpnConnectionRouteResponse>
```

## Related Actions

- [CreateVpnConnectionRoute](#) (p. 121)
- [DeleteVpnConnection](#) (p. 158)
- [DescribeVpnConnections](#) (p. 315)
- [CreateVpc](#) (p. 116)
- [CreateSubnet](#) (p. 109)
- [AttachVpnGateway](#) (p. 30)



# DeleteVpnGateway

## Description

Deletes the specified virtual private gateway. We recommend that before you delete a virtual private gateway, you detach it from the VPC and delete the VPN connection. Note that you don't need to delete the virtual private gateway if you plan to delete and recreate the VPN connection between your VPC and your network.

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

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: xsd:string

### `return`

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

Type: xsd:boolean

## Examples

### Example Request

This example request deletes the virtual private gateway with the ID `vgw-8db04f81`.

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

### Example Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnGatewayResponse>
```

## Related Actions

- [CreateVpnGateway](#) (p. 123)
- [DescribeVpnGateways](#) (p. 319)
- [DeleteVpnConnection](#) (p. 158)

# DeregisterImage

## Description

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

### Note

This command does not delete the AMI.

## Request Parameters

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request deregisters the AMI with the ID `ami-4fa54026`.

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

### Example Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeregisterImageResponse>
```

## Related Actions

- [RegisterImage](#) (p. 376)

- [DescribeImages](#) (p. 192)

# DescribeAccountAttributes

## Description

Describes the specified attribute of your AWS account.

The following are the supported account attributes.

### **supported-platforms**

Indicates whether your account can launch instances into EC2-Classic and EC2-VPC, or only into EC2-VPC. For more information, see [Supported Platforms](#).

### **default-vpc**

The ID of the default VPC for your account, or `none`. For more information, see [Your Default VPC and Subnets](#).

## Request Parameters

### ***AttributeName.n***

One or more account attribute names.

Type: String

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

## Response Elements

The following elements are returned in a `DescribeAccountAttributesResponse` structure.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **accountAttributeSet**

A list of the names and values of the requested attributes, each one wrapped in an `item` element.

Type: [AccountAttributeSetItemType](#) (p. 437)

## Examples

### Example Request

This example request describes the platforms that are supported by your account.

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

### Example Response 1

The following is an example response for an account that must launch instances into a VPC, such as the default VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## Example Response 2

The following is an example response for an account that can launch instances into EC2-Classical or into a VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>EC2</attributeValue>
        </item>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

# DescribeAddresses

## Description

Describes one or more of your Elastic IP addresses.

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

## Request Parameters

### *PublicIp.n*

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

Type: String

Default: Describes all your Elastic IP addresses.

Required: No

### *AllocationId.n*

[EC2-VPC] One or more allocation IDs.

Type: String

Default: Describes all your Elastic IP addresses.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Elastic IP addresses. For example, you can use a filter to specify that you're interested in addresses that have a specific tag. You can specify multiple values for a filter. The response includes information for an address only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify addresses of a specific value that have a specific tag. The response includes information for an address only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **domain**

Indicates whether the address is for use in a VPC.

Type: String

Valid values: `standard` | `vpc`

**instance-id**

The instance the address is associated with (if any).

Type: String

**public-ip**

The Elastic IP address.

Type: String

**allocation-id**

The allocation ID for the address (VPC only).

Type: String

**association-id**

The association ID for the address (VPC only).

Type: String

**network-interface-id**

The network interface (if any) that the address is associated with (VPC only).

Type: String

**network-interface-owner-id**

The owner IID.

Type: String

**private-ip-address**

The private IP address associated with the Elastic IP address (VPC only).

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**addressesSet**

A list of Elastic IP addresses, each one wrapped in an `item` element.

Type: [DescribeAddressesResponseItemType](#) (p. 447)

## Examples

### Example Request

This example request describes two specific Elastic IP addresses allocated to your account. Both addresses were created for instances in EC2-Classic, so you must specify them using their IP addresses. The address 192.0.2.1 is assigned to instance `i-f15ebb98`, and 198.51.100.2 is not assigned to an instance.

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



## Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>192.0.2.1</publicIp>
      <domain>standard</domain>
      <instanceId>i-f15ebb98</instanceId>
    </item>
    <item>
      <publicIp>198.51.100.2</publicIp>
      <domain>standard</domain>
      <instanceId/>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

## Example Request

This example request describes a specific Elastic IP address allocated to your account. This address was created for instances in EC2-VPC, so you must use the allocation ID to specify the address.

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

## Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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 Request

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

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

## Related Actions

- [AllocateAddress](#) (p. 12)
- [ReleaseAddress](#) (p. 380)
- [AssociateAddress](#) (p. 17)
- [DisassociateAddress](#) (p. 332)

# DescribeAvailabilityZones

## Description

Describes one or more of the Availability Zones that are available to you. The results include zones only for the region you're currently using.

### Note

Availability Zones are not the same across accounts. The Availability Zone us-east-1a for account A is not necessarily the same as us-east-1a for account B. Zone assignments are mapped independently for each account.

## Request Parameters

### *ZoneName.n*

One or more Availability Zone names.

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Availability Zones. For example, you can use a filter to specify that you're interested in Availability Zones in the `available` state. You can specify multiple values for a filter. The response includes information for an Availability Zone only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Availability Zones that are in a particular region and are in the `available` state. The response includes information for an Availability Zone only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### **message**

Information about the Availability Zone.

Type: String

**region-name**

The region for the Availability Zone (for example, us-east-1).

Type: String

**state**

The state of the Availability Zone

Type: String

Valid values: available

**zone-name**

The name of the zone.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**availabilityZoneInfo**

A list of Availability Zones, each one wrapped in an `item` element.

Type: [AvailabilityZoneItemType](#) (p. 439)

## Examples

### Example Request

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

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

### Example Response

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
  </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

```
<item>
  <zoneName>us-east-1c</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
<item>
  <zoneName>us-east-1d</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
</availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

## Related Actions

- [RunInstances](#) (p. 416)
- [DescribeRegions](#) (p. 241)

# DescribeBundleTasks

## Description

Describes one or more of your bundling tasks.

### Note

Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use the `RegisterImage` action with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

## Request Parameters

### *BundleId.n*

One or more bundle task IDs.

Type: String

Default: Describes all your bundle tasks.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain bundle tasks. For example, you can use a filter to specify that you're interested in the bundle tasks in the `complete` state. You can specify multiple values for a filter. The response includes information for a bundle task only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify bundles that are stored in a specific Amazon S3 bucket and are in the `complete` state. The response includes information for a bundle task only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **bundle-id**

The ID of the bundle task.

Type: String

### **error-code**

If the task failed, the error code returned.

<b>Type:</b>	String
<b>error-message</b>	If the task failed, the error message returned.
<b>Type:</b>	String
<b>instance-id</b>	The ID of the instance that was bundled.
<b>Type:</b>	String
<b>progress</b>	The level of task completion, as a percentage (for example, 20%).
<b>Type:</b>	String
<b>s3-bucket</b>	The Amazon S3 bucket to store the AMI.
<b>Type:</b>	String
<b>s3-prefix</b>	The beginning of the AMI name.
<b>Type:</b>	String
<b>start-time</b>	The time the task started (for example, 2008-09-15T17:15:20.000Z).
<b>Type:</b>	DateTime
<b>state</b>	The state of the task.
<b>Type:</b>	String
<b>Valid values:</b>	pending   waiting-for-shutdown   bundling   storing   cancelling   complete   failed
<b>update-time</b>	The time of the most recent update for the task (for example, 2008-09-15T17:15:20.000Z).
<b>Type:</b>	DateTime

## Response Elements

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

<b>requestId</b>	The ID of the request.
<b>Type:</b>	xsd:string
<b>bundleInstanceTasksSet</b>	A list of bundle tasks, each one wrapped in an <code>item</code> element.
<b>Type:</b>	<a href="#">BundleInstanceTaskType</a> (p. 443)

## Examples

### Example Request

This example describes the status of the `bun-57a5403e` bundle task.

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

## Example Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTasksSet>
    <item>
      <instanceId>i-12345678</instanceId>
      <bundleId>bun-cla540a8</bundleId>
      <state>cancelling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
      <progress>20%</progress>
    </item>
  </bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

## Example Request

This example filters the response to include only bundle tasks whose state is either `complete` or `failed`, and in addition are targeted for the Amazon S3 bucket named `myawsbucket`.

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=myawsbucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```

## Related Actions

- [BundleInstance](#) (p. 39)
- [CancelBundleTask](#) (p. 42)



# DescribeConversionTasks

## Description

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*.

## Request Parameters

### *ConversionTaskId.n*

One or more conversion task IDs.

Type: String

Required: No

## Response Elements

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

### `conversionTasks`

A list of conversion tasks, each one wrapped in an `item` element.

Type: [ConversionTaskType](#) (p. 444)

## Examples

### Example Request

This example describes all your conversion tasks.

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

### Example Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <conversionTasks>
    <item>
      <conversionTask>
        <conversionTaskId>import-i-fh95npoc</conversionTaskId>
        <expirationTime>2010-12-22T12:01Z</expirationTime>
        <importVolume>
          <bytesConverted>1000</bytesConverted>
          <availabilityZone>us-east-1a</availabilityZone>
          <description/>
          <image>
            <format>VDMK</format>
            <size>128696320</size>
            <importManifestUrl>
              https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
```

```
15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess  
KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx  
tEXAMPLE%3D  
    </importManifestUrl>  
  </image>  
  <volume>  
    <size>8</size>  
    <id>vol-34d8a2ff</id>  
  </volume>  
</importVolume>  
<state>active</state>  
<statusMessage/>  
</conversionTask>  
</item>  
</conversionTasks>  
</DescribeConversionTasksResponse>
```

## Related Actions

- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)
- [CancelConversionTask](#) (p. 44)

# DescribeCustomerGateways

## Description

Describes one or more of your VPN customer gateways.

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

## Request Parameters

### *CustomerGatewayId.n*

One or more customer gateway IDs.

Type: String

Default: Describes your customer gateways.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain customer gateways. For example, you can use a filter to specify that you're interested in customer gateways in the `pending` or `available` state. You can specify multiple values for a filter. The response includes information for a customer gateway only if it matches at least one of the of the filter values that you specified.

You can specify multiple filters; for example, specify customer gateways that have a specific IP address for the Internet-routable external interface and are in the `pending` or `available` state. The response includes information for a customer gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **bgp-asn**

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: String

### **customer-gateway-id**

The ID of the customer gateway.

Type: String

**ip-address**

The IP address of the customer gateway's Internet-routable external interface (for example, 12.1.2.3).

Type: String

**state**

The state of the customer gateway.

Type: String

Valid values: pending | available | deleting | deleted

**type**

The type of customer gateway. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: ipsec.1

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**customerGatewaySet**

A list of customer gateways, each one wrapped in an `item` element.

Type: [CustomerGatewayType](#) (p. 446)

## Examples

### Example Request

This example request describes of the customer gateway with the ID `cgw-b4dc3961`.

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

### Example Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGatewaySet>
    <item>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <ipAddress>12.1.2.3</ipAddress>
      <bgpAsn>65534</bgpasn>
      <tagSet/>
    </item>
  </customerGatewaySet>
</DescribeCustomerGatewaysResponse>
```

### Example Request

This example request uses filters to describe any customer gateway you own whose IP address is `12.1.2.3`, and whose state is either `pending` or `available`.

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&Filter.1.Name=ip-address
&Filter.1.Value.1=12.1.2.3
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## Related Actions

- [CreateCustomerGateway](#) (p. 59)
- [DeleteCustomerGateway](#) (p. 125)

# DescribeDhcpOptions

## Description

Describes one or more of your DHCP options sets.

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

## Request Parameters

### *DhcpOptionsId.n*

The IDs of one or more DHCP options sets.

Type: String

Default: Describes all your DHCP options sets.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain sets of DHCP options. For example, you can use a filter to specify that you're interested in sets of DHCP options with a particular value for the `domain-name` option. You can specify multiple values for a filter. The response includes information for a set of DHCP options only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify sets of DHCP options that have a specific value for the `domain-name` option and a specific tag. The response includes information for a set of DHCP options only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **dhcp-options-id**

The ID of a set of DHCP options.

Type: String

### **key**

The key for one of the options (for example, `domain-name`).

Type: String

**value**

The value for one of the options.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**dhcpOptionsSet**

A list of DHCP options sets, each one wrapped in an `item` element.

Type: [DhcpOptionsType](#) (p. 457)

## Examples

### Example Request

This example describes the DHCP options set with the ID `dopt-7a8b9c2d`.

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

## Example Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptionsSet>
    <item>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>example.com</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.2</value>
            </item>
          </valueSet>
        </item>
      </dhcpConfigurationSet>
      <tagSet/>
    </item>
  </dhcpOptionsSet>
</DescribeDhcpOptionsResponse>
```

## Example Request

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

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&Filter.1.Name=key
&Filter.1.Value.1=domain-name
&Filter.2.Name=value
&Filter.2.Value.1=*example*
&AUTHPARAMS
```

## Related Actions

- [CreateDhcpOptions](#) (p. 61)
- [AssociateDhcpOptions](#) (p. 20)



- [DeleteDhcpOptions](#) (p. 127)

# DescribeExportTasks

## Description

Describes one or more of your export tasks.

## Request Parameters

### *ExportTaskId.n*

One or more export task IDs.

Type: String

Default: Describes all your export tasks.

Required: No

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `exportTaskSet`

A list of export tasks, each one wrapped in an item element.

Type: [ExportTaskResponseType](#) (p. 461)

## Examples

### Example Request

This example describes a single export task.

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

### Example Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<exportTaskSet>
  <item>
<exportTaskId>export-i-1234wxyz</exportTaskId>
<description>Example for docs</description>
<state>active</state>
<statusMessage>Running</statusMessage>
<instanceExport>
<instanceId>i-12345678</instanceId>
<targetEnvironment>VMWare</targetEnvironment>
```

```
</instanceExport>  
<exportToS3>  
<diskImageFormat>VMDK</diskImageFormat>  
<containerFormat>OVA</containerFormat>  
<s3Bucket>my-bucket-for-exported-vm</s3Bucket>  
<s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>  
</exportToS3>  
</item>  
</exportTaskSet>  
</ DescribeExportTasksResponse>
```

## Related Actions

- [CancelExportTask](#) (p. 46)
- [CreateInstanceExportTask](#) (p. 67)

# DescribeImageAttribute

## Description

Describes an attributes of an AMI. You can specify only one attribute at a time.

## Request Parameters

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *Attribute*

The AMI attribute.

Type: String

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

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **imageId**

The ID of the AMI.

Type: `xsd:string`

### **launchPermission**

A list of launch permissions, each one wrapped in an `item` element.

Type: [LaunchPermissionItemType](#) (p. 482)

### **productCodes**

A list of product codes, each one wrapped in an `item` element that contains a product code and a product code type.

Type: [ProductCodeItemType](#) (p. 497)

### **kernel**

The kernel ID, wrapped in a `value` element.

Type: `xsd:string`

### **ramdisk**

The RAM disk ID, wrapped in a `value` element.

Type: `xsd:string`

### **description**

A user-created description for the AMI, wrapped in a `value` element.

Type: `xsd:string`

### **blockDeviceMapping**

One or more block device mapping entries, each one wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 440)

## Examples

### Example Request

This example lists the launch permissions for the ami-61a54008 AMI

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

### Example Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-61a54008</imageId>
  <launchPermission>
    <item>
      <group>all</group>
    </item>
    <item>
      <userId>495219933132</userId>
    </item>
  </launchPermission>
</DescribeImageAttributeResponse>
```

### Example Request

This example lists the product code for the ami-2bb65342 AMI.

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

### Example Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
```

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

## Related Actions

- [DescribeImages](#) (p. 192)
- [ModifyImageAttribute](#) (p. 353)
- [ResetImageAttribute](#) (p. 402)

# DescribeImages

## Description

Describes one or more of the images (AMIs, AKIs, and ARIs) available to you. Images available to you include public images, private images that you own, and private images owned by other AWS accounts but for which you have explicit launch permissions.

Launch permissions fall into three categories:

### public

The owner of the AMI granted launch permissions for the AMI to the `all` group. All AWS accounts have launch permissions for these AMIs.

### explicit

The owner of the AMI granted launch permissions to a specific AWS account.

### implicit

An AWS account has implicit launch permissions for all the AMIs it owns.

The list of images returned can be modified by specifying IDs, owners, or AWS accounts with launch permissions. If no options are specified, Amazon EC2 returns all images for which you have launch permissions.

If you specify one or more image IDs, only images that have the specified IDs are returned. If you specify an image to which you don't have access, it's not included in the returned results.

If you specify one or more owners, only images from the specified owners and for which you have access are returned. The results can include the account IDs of the specified owners—`amazon` for images owned by Amazon or `self`, for images that you own, or `marketplace` for images from the AWS Marketplace.

### Note

For an overview of the AWS Marketplace, see <https://aws.amazon.com/marketplace/help/200900000>. For details on how to use the AWS Marketplace, see [AWS Marketplace](#).

If you specify a list users with launch permissions, only images with launch permissions for those users are returned. You can specify account IDs (if you own the images), `self` for images that you own or have explicit permissions for, or `all` for public images.

### Note

Deregistered images are included in the returned results for an unspecified interval after deregistration.

## Request Parameters

### *ExecutableBy.n*

Describes the images for which the specified user has explicit launch permissions. The user ID can be an AWS account ID, `self` to return images for which the sender of the request has explicit launch permissions, or `all` to return AMIs with public launch permissions.

Type: String

Valid values: `all` | `self` | *AWS account ID*

Default: None

Required: No

### *ImageId.n*

One or more image IDs.

Type: String  
Default: Describes all images available to you.  
Required: No

***Owner.n***

Describes images owned by the specified owners. Use the IDs `amazon`, `aws-marketplace`, and `self` to describe images owned by Amazon, AWS Marketplace, or you, respectively.

Type: String  
Valid values: `amazon` | `aws-marketplace` | `self` | *AWS account ID* | `all`  
Default: None  
Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String  
Default: None  
Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String  
Default: None  
Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain images. For example, you can use a filter to specify that you're interested in images that use a specific kernel. You can specify multiple values for a filter. The response includes information for an image only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify images that use a specific kernel and use an Amazon EBS volume as the root device. The response includes information for an image only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**`architecture`**

The image architecture.  
Type: String  
Valid values: `i386` | `x86_64`

**`block-device-mapping.delete-on-termination`**

Whether the Amazon EBS volume is deleted on instance termination.  
Type: Boolean

**`block-device-mapping.device-name`**

The device name (for example, `/dev/sdh`) for the Amazon EBS volume.  
Type: String

**`block-device-mapping.snapshot-id`**

The ID of the snapshot used for the Amazon EBS volume.  
Type: String



**block-device-mapping.volume-size**  
The volume size of the Amazon EBS volume, in GiB.  
Type: Integer

**block-device-mapping.volume-type**  
The volume type of the Amazon EBS volume.  
Type: String  
Valid values: `standard` | `io1`

**description**  
The description of the image (provided during image creation).  
Type: String

**image-id**  
The ID of the image.  
Type: String

**image-type**  
The image type.  
Type: String  
Valid values: `machine` | `kernel` | `ramdisk`

**is-public**  
Whether the image is public.  
Type: Boolean

**kernel-id**  
The kernel ID.  
Type: String

**manifest-location**  
The location of the image manifest.  
Type: String

**name**  
The name of the AMI (provided during image creation).  
Type: String

**owner-alias**  
The AWS account alias (for example, `amazon`).  
Type: String

**owner-id**  
The AWS account ID of the image owner.  
Type: String

**platform**  
The platform. To only list Windows-based AMIs, use `windows`.  
Type: String  
Valid value: `windows`

**product-code**  
The product code.  
Type: String

**product-code.type**  
The type of the product code.  
Type: String  
Valid values: `devpay` | `marketplace`

**ramdisk-id**  
The RAM disk ID.  
Type: String

**root-device-name**

The name of the root device volume (for example, /dev/sda1).

Type: String

**root-device-type**

The type of the root device volume.

Type: String

Valid values: ebs | instance-store

**state**

The state of the image.

Type: String

Valid values: available | pending | failed

**state-reason-code**

The reason code for the state change.

Type: String

**state-reason-message**

The message for the state change.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**virtualization-type**

The virtualization type.

Type: String

Valid values: paravirtual | hvm

**hypervisor**

The hypervisor type.

Type: String

Valid values: ovm | xen

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**imagesSet**

A list of images, each one wrapped in an `item` element.

Type: [DescribeImagesResponseItemType](#) (p. 447)

## Examples

### Example Request

This example describes the `ami-be3adfd7` AMI.

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

### Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <ramdiskId>ari-1a2b3c4d</ramdiskId>
      <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>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

```
<virtualizationType>paravirtual</virtualizationType>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</imagesSet>
</DescribeImagesResponse>
```

## Example Request

This example filters the response to include only the public Windows images with an x86\_64 architecture.

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
&AUTHPARAMS
```

## Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>x86_64</architecture>
      <imageType>machine</imageType>
      <platform>windows</platform>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <rootDeviceType>instance-store</rootDeviceType>
      <blockDeviceMapping/>
      <virtualizationType>hvm</virtualizationType>
      <tagSet/>
      <hypervisor>xen</hypervisor>
    </item>
    ...
  </imagesSet>
</DescribeImagesResponse>
```

## Example Request

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

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.0=aws-marketplace
&AUTHPARAMS
```

## Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>true</isPublic>
      <productCodes>
        <item>
          <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
      </productCodes>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <imageOwnerAlias>aws-marketplace</imageOwnerAlias>
      <name>example-marketplace-amzn-ami.1</name>
      <description>Amazon Linux AMI i386 EBS</description>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1a2b3c4d</snapshotId>
            <volumeSize>8</volumeSize>
            <deleteOnTermination>true</deleteOnTermination>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <hypervisor>xen</hypervisor>
    </item>
    ...
  </imagesSet>
</DescribeImagesResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 202)
- [DescribeImageAttribute](#) (p. 189)

# DescribeInstanceAttribute

## Description

Describes an attribute of the specified instance. You can specify only one attribute at a time.

## Request Parameters

### **InstanceId**

The ID of the instance.

Type: String

Default: None

Required: Yes

### **Attribute**

The instance attribute.

Type: String

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

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **instanceId**

The ID of the instance.

Type: `xsd:string`

### **blockDeviceMapping**

The block device mapping of the instance.

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

### **disableApiTermination**

If the value is `true`, you can't terminate the instance through the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: `xsd:boolean`

### **ebsOptimized**

Indicates whether the instance is optimized for EBS I/O.

Type: `xsd:boolean`

### **groupSet**

The security groups associated with the instance.

Type: [GroupItemType](#) (p. 463)

### **instanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: `xsd:string`

Valid values: `stop` | `terminate`

**instanceType**

The instance type. For more information, see [Available Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: `xsd:string`

**kernel**

The kernel ID.

Type: `xsd:string`

**productCodes**

A list of product codes.

Type: [ProductCodesSetItem](#) (p. 498)

**ramdisk**

The RAM disk ID.

Type: `xsd:string`

**rootDeviceName**

The name of the root device (for example, `/dev/sda1`).

Type: `xsd:string`

**sourceDestCheck**

Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: `xsd:boolean`

**userData**

The Base64-encoded MIME user data.

Type: `xsd:string`

## Examples

### Example Request

This example lists the instance type of the `i-10a64379` instance.

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

### Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <instanceType>
    <value>t1.micro</value>
  </instanceType>
</DescribeInstanceAttributeResponse>
```

## Example Request

This example lists the current value of the `InstanceInitiatedShutdownBehavior` attribute for the `i-10a64379` instance.

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

## Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <instanceInitiatedShutdownBehavior>
    <value>stop</value>
  </instanceInitiatedShutdownBehavior>
</DescribeInstanceAttributeResponse>
```

## Example Request

This example lists the current value of the `DisableApiTermination` attribute for the `i-10a64379` instance.

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

## Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <disableApiTermination>
    <value>>false</value>
  </disableApiTermination>
</DescribeInstanceAttributeResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 202)
- [ModifyInstanceAttribute](#) (p. 356)
- [ResetInstanceAttribute](#) (p. 404)



# DescribeInstances

## Description

Describes one or more of your instances.

If you specify one or more instance IDs, Amazon EC2 returns information for those instances. If you do not specify instance IDs, Amazon EC2 returns information for all relevant instances. If you specify an invalid instance ID, 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

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: Describes all your instances.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain instances. For example, you can use a filter to specify that you're interested in instances launched with a specific key pair. You can specify multiple values for a filter. The response includes information for an instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify instances that are launched with a specific key pair and use an Amazon EBS volume as the root device. The response includes information for an instance only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **architecture**

The instance architecture.

Type: String

Valid values: `i386` | `x86_64`

**availability-zone**

The Availability Zone of the instance.

Type: String

**block-device-mapping.attach-time**

The attach time for an Amazon EBS volume mapped to the instance (for example, 2010-09-15T17:15:20.000Z)

Type: DateTime

**block-device-mapping.delete-on-termination**

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

**block-device-mapping.device-name**

The device name (for example, `/dev/sdh`) for the Amazon EBS volume.

Type: String

**block-device-mapping.status**

The status for the Amazon EBS volume.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**block-device-mapping.volume-id**

The volume ID of the Amazon EBS volume.

Type: String

**client-token**

The idempotency token you provided when you launched the instance.

Type: String

**dns-name**

The public DNS name of the instance.

Type: String

**group-id**

The ID of the security group for the instance. If the instance is in EC2-Classic or a default VPC, you can use `group-name` instead.

Type: String

**group-name**

The name of the security group for the instance. If the instance is in a nondefault VPC, you must use `group-id` instead.

Type: String

**image-id**

The ID of the image used to launch the instance.

Type: String

**instance-id**

The ID of the instance.

Type: String

**instance-lifecycle**

Indicates whether this is a Spot Instance.

Type: String

Valid values: `spot`

**instance-state-code**

The state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented.

Type: Integer (16-bit unsigned integer)

Valid values: 0 (pending) | 16 (running) | 32 (shutting-down) | 48 (terminated) | 64 (stopping) | 80 (stopped)

**instance-state-name**

The state of the instance.

Type: String

Valid values: pending | running | shutting-down | terminated | stopping | stopped

**instance-type**

The type of instance (for example, m1.small).

Type: String

**instance.group-id**

The ID of the security group for the instance. If the instance is in EC2-Classic or a default VPC, you can use `instance.group-name` instead.

Type: String

**instance.group-name**

The name of the security group for the instance. If the instance is in a nondefault VPC, you must use `instance.group-id` instead.

Type: String

**ip-address**

The public IP address of the instance.

Type: String

**kernel-id**

The kernel ID.

Type: String

**key-name**

The name of the key pair used when the instance was launched.

Type: String

**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).

Type: String

**launch-time**

The time the instance was launched (for example, 2010-08-07T11:54:42.000Z).

Type: DateTime

**monitoring-state**

Indicates whether monitoring is enabled for the instance.

Type: String

Valid values: disabled | enabled

**owner-id**

The AWS account ID of the instance owner.

Type: String

**placement-group-name**

The name of the placement group for the instance.

Type: String

**platform**

The platform. Use `windows` if you have Windows based instances; otherwise, leave blank.

Type: String

Valid value: windows

**private-dns-name**

The private DNS name of the instance.

Type: String

**private-ip-address**

The private IP address of the instance.

Type: String

**product-code**

The product code associated with the AMI used to launch the instance.

Type: String

**product-code.type**

The type of product code.

Type: String

Valid values: `devpay` | `marketplace`

**ramdisk-id**

The RAM disk ID.

Type: String

**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.

Type: String

**requester-id**

The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on)

Type: String

**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.

Type: String

**root-device-name**

The name of the root device for the instance (for example, `/dev/sda1`).

Type: String

**root-device-type**

The type of root device the instance uses.

Type: String

Valid values: `ebs` | `instance-store`

**source-dest-check**

Indicates whether the instance performs source/destination checking. A value of `true` means that checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform network address translation (NAT) in your VPC.

Type: Boolean

**spot-instance-request-id**

The ID of the Spot Instance request.

Type: String

**state-reason-code**

The reason code for the state change.

Type: String

**state-reason-message**

A message that describes the state change.

Type: String

**subnet-id**

The ID of the subnet for the instance.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**virtualization-type**

The virtualization type of the instance.

Type: String

Valid values: `paravirtual` | `hvm`

**vpc-id**

The ID of the VPC the instance is running in.

Type: String

**hypervisor**

The hypervisor type of the instance.

Type: String

Valid values: `ovm` | `xen`

**network-interface.description**

The description of the network interface.

Type: String

**network-interface.subnet-id**

The ID of the subnet for the network interface.

Type: String

**network-interface.vpc-id**

The ID of the VPC for the network interface.

Type: String

**network-interface.network-interface-id**

The ID of the network interface.

Type: String

**network-interface.owner-id**

The ID of the owner of the network interface.

Type: String

- network-interface.availability-zone**  
The availability zone for the network interface.  
Type: String
- network-interface.requester-id**  
The requester ID for the network interface.  
Type: String
- network-interface.requester-managed**  
Indicates whether the network interface is being managed by AWS.  
Type: Boolean
- network-interface.status**  
The status of the network interface.  
Type: String  
Valid values: available | in-use
- network-interface.mac-address**  
The MAC address of the network interface.  
Type: String  
Valid values: available | in-use
- network-interface-private-dns-name**  
The private DNS name of the network interface.  
Type: String
- network-interface.source-destination-check**  
Whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.  
Type: Boolean
- network-interface.group-id**  
The ID of a security group associated with the network interface.  
Type: String
- network-interface.group-name**  
The name of a security group associated with the network interface.  
Type: String
- network-interface.attachment.attachment-id**  
The ID of the interface attachment.  
Type: String
- network-interface.attachment.instance-id**  
The ID of the instance to which the network interface is attached.  
Type: String
- network-interface.attachment.instance-owner-id**  
The owner ID of the instance to which the network interface is attached.  
Type: String
- network-interface.addresses.private-ip-address**  
The private IP address associated with the network interface.  
Type: String
- network-interface.attachment.device-index**  
The device index to which the network interface is attached.  
Type: Integer
- network-interface.attachment.status**  
The status of the attachment.  
Type: String  
Valid values: attaching | attached | detaching | detached

**network-interface.attachment.attach-time**

The time that the network interface was attached to an instance.

Type: Date

**network-interface.attachment.delete-on-termination**

Specifies whether the attachment is deleted when an instance is terminated.

Type: Boolean

**network-interface.addresses.primary**

Specifies whether the IP address of the network interface is the primary private IP address.

Type: Boolean

**network-interface.addresses.association.public-ip**

The ID of the association of an Elastic IP address with a network interface.

Type: String

**network-interface.addresses.association.ip-owner-id**

The owner ID of the private IP address associated with the network interface.

Type: String

**association.public-ip**

The address of the Elastic IP address bound to the network interface.

Type: String

**association.ip-owner-id**

The owner of the Elastic IP address associated with the network interface.

Type: String

**association.allocation-id**

The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface.

Type: String

**association.association-id**

The association ID returned when the network interface was associated with an IP address.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**reservationSet**

A list of reservations, each one wrapped in an `item` element.

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

## Examples

### Example Request

This example describes all instances owned by your AWS account.

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

## Example Response

This example response shows information for one instance.

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>my-security-group</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-1a2b3c4d</instanceId>
          <imageId>ami-1a2b3c4d</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
          <privateDnsName/>
          <dnsName/>
          <reason/>
          <keyName>my-key-pair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>c1.medium</instanceType>
          <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
          <placement>
            <availabilityZone>us-west-2a</availabilityZone>
            <groupName/>
            <tenancy>default</tenancy>
          </placement>
          <platform>windows</platform>
          <monitoring>
            <state>disabled</state>
          </monitoring>
          <subnetId>subnet-1a2b3c4d</subnetId>
          <vpcId>vpc-1a2b3c4d</vpcId>
          <privateIpAddress>10.0.0.12</privateIpAddress>
          <ipAddress>46.51.219.63</ipAddress>
          <sourceDestCheck>true</sourceDestCheck>
          <groupSet>
            <item>
              <groupId>sg-1a2b3c4d</groupId>
              <groupName>my-security-group</groupName>
            </item>
          </groupSet>
          <architecture>x86_64</architecture>
          <rootDeviceType>ebs</rootDeviceType>
          <rootDeviceName>/dev/sda1</rootDeviceName>
          <blockDeviceMapping>
            <item>
```



```
<deviceName>/dev/sda1</deviceName>
<ebs>
  <volumeId>vol-1a2b3c4d</volumeId>
  <status>attached</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</ebs>
</item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>111122223333</ownerId>
    <status>in-use</status>
    <macAddress>1b:2b:3c:4d:5e:6f</macAddress>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-1a2b3c4d</attachmentId>
      <deviceIndex>0</deviceIndex>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </attachment>
    <association>
      <publicIp>198.51.100.63</publicIp>
      <ipOwnerId>111122223333</ipOwnerId>
    </association>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.0.12</privateIpAddress>
        <primary>true</primary>
        <association>
          <publicIp>198.51.100.63</publicIp>
          <ipOwnerId>111122223333</ipOwnerId>
        </association>
      </item>
      <item>
        <privateIpAddress>10.0.0.14</privateIpAddress>
        <primary>false</primary>
      </item>
    </privateIpAddressesSet>
  </item>
</networkInterfaceSet>
```

```
        <association>
          <publicIp>198.51.100.177</publicIp>
          <ipOwnerId>111122223333</ipOwnerId>
        </association>
      </item>
    </privateIpAddressesSet>
  </item>
</networkInterfaceSet>
</instancesSet>
</reservationSet>
</DescribeInstancesResponse>
```

## Example Request

This example describes only the instances that have the `m1.small` or `m1.large` instance type and an attached Amazon EBS volume that will be deleted on termination.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS
```

## Example Request

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

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

## Example Request

This example describes any instances that have that have a tag with the key `Owner` and the value `DbAdmin`.

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

To list all instances that have a tag with the key `Owner`, regardless of the value of the tag, use the following request.

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

## Related Actions

- [RunInstances](#) (p. 416)
- [StartInstances](#) (p. 424)
- [StopInstances](#) (p. 426)
- [TerminateInstances](#) (p. 428)

# DescribeInstanceStatus

## Description

Describes the status of one or more instances, including any scheduled events.

Instance status has two main components:

- System Status reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems. The `DescribeInstanceStatus` response elements report such problems as impaired reachability.
- Instance Status reports impaired functionality that arises from problems internal to the instance. The `DescribeInstanceStatus` response elements report such problems as impaired reachability.

Instance status provides information about four types of scheduled events for an instance that may require your attention:

- **Scheduled Reboot:** When Amazon EC2 determines that an instance must be rebooted, the instances status will return one of two event codes: `system-reboot` or `instance-reboot`. System reboot commonly occurs if certain maintenance or upgrade operations require a reboot of the underlying host that supports an instance. Instance reboot commonly occurs if the instance must be rebooted, rather than the underlying host. Rebooting events include a scheduled start and end time.
- **System Maintenance:** When Amazon EC2 determines that an instance requires maintenance that requires power or network impact, the instance's status will return an event code called `system-maintenance`. System maintenance is either power maintenance or network maintenance. For power maintenance, your instance will be unavailable for a brief period of time and then rebooted. For network maintenance, your instance will experience a brief loss of network connectivity. System maintenance events include a scheduled start and end time. You will also be notified by email if one of your instances is set for system maintenance. The email message indicates when your instance is scheduled for maintenance.
- **Scheduled Retirement:** When Amazon EC2 determines that an instance must be shut down, the instance's status returns an event code called `instance-retirement`. Retirement commonly occurs when the underlying host is degraded and must be replaced. Retirement events include a scheduled start and end time. You will also be notified by email if one of your instances is set to retiring. The email message indicates when your instance will be permanently retired.
- **Scheduled Stop:** When Amazon EC2 determines that an instance must be shut down, the instances status returns an event code called `instance-stop`. Stop events include a scheduled start and end time. You will also be notified by email if one of your instances is set to stop. The email message indicates when your instance will be stopped.

When your instance is retired, it will either be terminated (if its root device type is the instance-store) or stopped (if its root device type is an EBS volume). Instances stopped due to retirement will not be restarted, but you can do so manually. You can also avoid retirement of EBS-backed instances by manually restarting your instance when its event code is `instance-retirement`. This ensures that your instance is started on a different underlying host.

## Request Parameters

### *InstanceId*

One or more instance IDs.

Type: String

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Required: No

***IncludeAllInstances***

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

Type: Boolean

Default: `false`

Required: No

***MaxResults***

The maximum number of paginated instance items per response.

Type: Integer

Default: 1000

Required: No

***NextToken***

The next paginated set of results to return.

Type: String

Default: None

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain instances. For example, you can use a filter to specify that you're interested in instances in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for an instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify instances that are in a specific Availability Zone and have a status of `retiring`. The response includes information for an instance only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**`availability-zone`**

The Availability Zone of the instance.

Type: String

**event.code**

The code identifying the type of event.

Type: String

Valid values: `instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`

**event.description**

A description of the event.

Type: String

**event.not-after**

The latest end time for the scheduled event.

Type: DateTime

**event.not-before**

The earliest start time for the scheduled event.

Type: DateTime

**instance-state-name**

The state of the instance.

Type: String

Valid values: `pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`

**instance-state-code**

A code representing the state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented

Type: Integer (16-bit unsigned integer)

Valid values: 0 (`pending`) | 16 (`running`) | 32 (`shutting-down`) | 48 (`terminated`) | 64 (`stopping`) | 80 (`stopped`)

**system-status.status**

The system status of the instance.

Type: String

Valid values: `ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`

**system-status.reachability**

Filters on system status where the name is `reachability`.

Type: String

Valid values: `passed` | `failed` | `initializing` | `insufficient-data`

**instance-status.status**

The status of the instance.

Type: String

Valid values: `ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`

**instance-status.reachability**

Filters on instance status where the name is `reachability`.

Type: String

Valid values: `passed` | `failed` | `initializing` | `insufficient-data`

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**instanceStatusSet**

A list of instances status descriptions, each one wrapped in an `item` element.

Type: [InstanceStatusItemType](#) (p. 478)

**nextToken**

The next paginated set of results to return.

Type: `xsd:string`

## Examples

### Example Request

This example returns instance status descriptions for all instances.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Version=2013-07-15
&AuthParams
```

### Example Request

This example returns instance status descriptions for the specified instances.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.0=i-1a2b3c4d
&InstanceId.1=i-2a2b3c4d
&Version=2013-07-15
&AuthParams
```

### Example Request

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

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.0.Name=system-status.reachability
&Filter.0.Value.failed
&Version=2013-07-15
&AuthParams
```

### Example Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
  <instanceStatusSet>
    <item>
      <instanceId>i-1a2b3c4d</instanceId>
      <availabilityZone>us-east-1d</availabilityZone>
```

```
<instanceState>
  <code>16</code>
  <name>running</name>
</instanceState>
<systemStatus>
  <status>impaired</status>
  <details>
    <item>
      <name>reachability</name>
      <status>failed</status>
      <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
    </item>
  </details>
</systemStatus>
<instanceStatus>
  <status>impaired</status>
  <details>
    <item>
      <name>reachability</name>
      <status>failed</status>
      <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
    </item>
  </details>
</instanceStatus>
<eventsSet>
  <code>instance-retirement</code>
  <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
  <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
  <description>
    The instance is running on degraded hardware
  </description>
</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>
</item>
```



```
        </details>
    </instanceStatus>
    <eventsSet>
        <code>instance-reboot</code>
        <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
        <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
        <description>
            The instance is scheduled for a reboot
        </description>
    </eventsSet>
</item>
<item>
    <instanceId>i-3a2b3c4d</instanceId>
    <availabilityZone>us-east-1c</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-1c</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>insufficient-data</status>
        <details>
            <item>
                <name>reachability</name>
```

```
        <status>insufficient-data</status>
      </item>
    </details>
  </instanceStatus>
</item>
</instanceStatusSet>
</DescribeInstanceStatusResponse>
```

# DescribeInternetGateways

## Description

Describes one or more of your Internet gateways.

## Request Parameters

### *InternetGatewayId.n*

One or more Internet gateway IDs.

Type: String

Default: Describes all your Internet gateways.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Internet gateways. For example, you can use a filter to specify that you're interested in the Internet gateways with particular tags. You can specify multiple values for a filter. The response includes information for an Internet gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Internet gateways that are attached to a specific VPC and have a specific tag. The response includes information for an Internet gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **attachment.state**

The current state of the attachment between the gateway and the VPC. Returned only if a VPC is attached.

Type: String

Valid value: `available`

### **attachment.vpc-id**

The ID of an attached VPC.

Type: String

**internet-gateway-id**

The ID of the Internet gateway.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**internetGatewaySet**

A list of Internet gateways, each one wrapped in an `item` element.

Type: [InternetGatewayType](#) (p. 480)

## Examples

### Example Request

This example describes your Internet gateways.

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

### Example Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<internetGatewaySet>
  <item>
    <internetGatewayId>igw-eaad4883EXAMPLE</internetGatewayId>
    <attachmentSet>
      <item>
        <vpcId>vpc-11ad4878</vpcId>
        <state>available</state>
      </item>
    </attachmentSet>
    <tagSet/>
  </item>
</internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 70)
- [DeleteInternetGateway](#) (p. 129)
- [DetachInternetGateway](#) (p. 24)
- [DetachInternetGateway](#) (p. 322)

# DescribeKeyPairs

## Description

Describes one or more of your key pairs.

## Request Parameters

### *KeyName.n*

One or more key pair names.  
Type: String  
Default: Describes all your key pairs.  
Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.  
Type: String  
Default: None  
Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.  
Type: String  
Default: None  
Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain key pairs. For example, you can use a filter to specify that you're interested in key pairs whose names include the string `Dave`. You can specify multiple values for a filter. The response includes information for a key pair only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify key pairs whose names include the string `Dave` and whose fingerprint is a specific value. The response includes information for a key pair only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **fingerprint**

The fingerprint of the key pair.  
Type: String

### **key-name**

The name of the key pair.  
Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**keySet**

A list of key pairs, each one wrapped in an `item` element.

Type: [DescribeKeyPairsResponseItemType](#) (p. 449)

## Examples

### Example Request

This example describes the keypair with name `my-key-pair`.

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS
```

### Example Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>my-key-pair</keyName>
      <keyFinger
print>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</keyFinger
print>
      </item>
    </keySet>
  </DescribeKeyPairsResponse>
```

### Example Request

This example filters the response to include only key pairs whose names include the string `Dave`.

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS
```

## Related Actions

- [CreateKeyPair](#) (p. 72)
- [ImportKeyPair](#) (p. 348)
- [DeleteKeyPair](#) (p. 131)

# DescribeNetworkAcls

## Description

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

### ***NetworkAclId.n***

One or more network ACL IDs.

Type: String

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain ACLs. For example, you can use a filter to specify that you're interested in the ACLs associated with a particular subnet. You can specify multiple values for a filter. The response includes information for an ACL only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify ACLs that are associated with a specific subnet and have an egress entry that denies traffic to a specific port. The response includes information for an ACL only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **association.association-id**

The ID of an association ID for the ACL.

Type: String

### **association.network-acl-id**

The ID of the network ACL involved in the association.

Type: String



**association.subnet-id**

The ID of the subnet involved in the association.

Type: String

**default**

Indicates whether the ACL is the default network ACL for the VPC.

Type: Boolean

**entry.cidr**

The CIDR range specified in the entry.

Type: String

**entry.egress**

Indicates whether the entry applies to egress traffic.

Type: Boolean

**entry.icmp.code**

The ICMP code specified in the entry, if any.

Type: Integer

**entry.icmp.type**

The ICMP type specified in the entry, if any.

Type: Integer

**entry.port-range.from**

The start of the port range specified in the entry.

Type: Integer

**entry.port-range.to**

The end of the port range specified in the entry.

Type: Integer

**entry.protocol**

The protocol specified in the entry.

Type: String

Valid values: `tcp` | `udp` | `icmp` or a protocol number

**entry.rule-action**

Indicates whether the entry allows or denies the matching traffic.

Type: String

Valid values: `allow` | `deny`

**entry.rule-number**

The number of an entry (in other words, rule) in the ACL's set of entries.

Type: Integer

**network-acl-id**

The ID of the network ACL.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:** *key*

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC for the network ACL.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**networkAclSet**

A list of network ACLs, each one wrapped in an `item` element.

Type: [NetworkAclType](#) (p. 488)

## Examples

### Example Request

This example describes all your network ACLs.

```
https://ec2.amazonaws.com/?Action=DescribeNetworkAcls
```

### Example Response

The first ACL in the returned list is the VPC's default ACL.

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
        </item>
      </entrySet>
    </item>
  </networkAclSet>
</DescribeNetworkAclsResponse>
```

```
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
  <item>
    <ruleNumber>32767</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>deny</ruleAction>
    <egress>true</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
  <item>
    <ruleNumber>100</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>allow</ruleAction>
    <egress>false</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
  <item>
    <ruleNumber>32767</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>deny</ruleAction>
    <egress>false</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
</entrySet>
<associationSet/>
<tagSet/>
</item>
<item>
  <networkAclId>acl-5d659634</networkAclId>
  <vpcId>vpc-5266953b</vpcId>
  <default>false</default>
  <entrySet>
    <item>
      <ruleNumber>110</ruleNumber>
      <protocol>6</protocol>
      <ruleAction>allow</ruleAction>
      <egress>true</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
      <portRange>
        <from>49152</from>
        <to>65535</to>
      </portRange>
    </item>
    <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>
</entrySet>
<associationSet>
  <item>
    <networkAclAssociationId>aclassoc-5c659635</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-ff669596</subnetId>
  </item>
  <item>
    <networkAclAssociationId>aclassoc-c26596ab</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-f0669599</subnetId>
  </item>
</associationSet>
<tagSet/>
</item>
</networkAclSet>
</DescribeNetworkAclsResponse>
```

## Related Actions

- [CreateNetworkAcl](#) (p. 75)
- [DeleteNetworkAcl](#) (p. 132)
- [ReplaceNetworkAclAssociation](#) (p. 382)
- [CreateNetworkAclEntry](#) (p. 77)
- [DeleteNetworkAclEntry](#) (p. 134)
- [ReplaceNetworkAclEntry](#) (p. 384)

# DescribeNetworkInterfaceAttribute

## Description

Describes a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

### ***NetworkInterfaceId***

The ID of the network interface.

Type: String

Default: None

Required: Yes

### ***Attribute***

The attribute of the network interface.

Type: String

Valid values: `description` | `groupSet` | `sourceDestCheck` | `attachment`

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **networkInterfaceId**

The ID of the network interface.

Type: `xsd:string`

### **description**

The description of the network interface.

Type: `xsd:string`

### **sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: `xsd:boolean`

### **groupSet**

The security groups associated with the network interface.

Type: [GroupItemType](#) (p. 463)

### **attachment**

The attachment (if any) of the network interface.

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

## Examples

### Example Request

This example describes the `sourceDestCheck` attribute of the specified network interface.

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

### Example Response

```
<DescribeNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 80)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ResetNetworkInterfaceAttribute](#) (p. 406)

# DescribeNetworkInterfaces

## Description

Describes one or more of your network interfaces.

## Request Parameters

### ***NetworkInterfaceId.n***

One or more network interface IDs.

Type: String

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain network interfaces. For example, you can use a filter to specify that you're interested in network interfaces launched in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for a network interface only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify network interfaces in a specific Availability Zone, and that have a specific owner ID. The response includes information for a network interface only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **`addresses.private-ip-address`**

The private IP addresses associated with the network interface.

Type: String

### **`addresses.primary`**

Whether the private IP address is the primary IP address associated with the network interface.

Type: Boolean

Valid values: `true` | `false`

### **`addresses.association.public-ip`**

The association ID returned when the network interface was associated with the Elastic IP address.

Type: String

**addresses.association.owner-id**  
The owner ID of the addresses associated with the network interface.  
Type: String

**association.association-id**  
The association ID returned when the network interface was associated with an IP address.  
Type: String

**association.allocation-id**  
The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface.  
Type: String

**association.ip-owner-id**  
The owner of the Elastic IP address associated with the network interface.  
Type: String

**association.public-ip**  
The address of the Elastic IP address bound to the network interface.  
Type: String

**attachment.attachment-id**  
The ID of the interface attachment.  
Type: String

**attachment.instance-id**  
The ID of the instance to which the network interface is attached.  
Type: String

**attachment.instance-owner-id**  
The owner ID of the instance to which the network interface is attached.  
Type: String

**attachment.device-index**  
The device index to which the network interface is attached.  
Type: Integer

**attachment.status**  
The status of the attachment.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

**attachment.attach.time**  
The time that the network interface was attached to an instance.  
Type: DateTime

**attachment.delete-on-termination**  
Indicates whether the attachment is deleted when an instance is terminated.  
Type: Boolean

**availability-zone**  
The Availability Zone of the network interface.  
Type: String

**description**  
The description of the network interface.  
Type: String

**group-id**  
The ID of a security group associated with the network interface.  
Type: String



**group-name**

The name of a security group associated with the network interface.

Type: String

**mac-address**

The MAC address of the network interface.

Type: String

**network-interface-id**

The ID of the network interface.

Type: String

**owner-id**

The AWS account ID of the network interface owner.

Type: String

**private-ip-address**

The private IP address or addresses of the network interface.

Type: String

**private-dns-name**

The private DNS name of the network interface.

Type: String

**requester-id**

The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).

Type: String

**requester-managed**

Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).

Type: Boolean

**source-dest-check**

Indicates whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform Network Address Translation (NAT) in your VPC.

Type: Boolean

**status**

The status of the network interface. If the network interface is not attached to an instance, the status shows `available`; if a network interface is attached to an instance the status shows `in-use`.

Type: String

Valid values: `available` | `in-use`

**subnet-id**

The ID of the subnet for the network interface.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `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` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:** *key*

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC for the network interface.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**networkInterfaceSet**

Information about the network interfaces, each one wrapped in an `item` element.

Type: [NetworkInterfaceType](#) (p. 491)

## Examples

### Example Request

This example describes network interfaces.

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

### Example Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
  <networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>
      <subnetId>subnet-c53c87ac</subnetId>
      <vpcId>vpc-cc3c87a5</vpcId>
      <availabilityZone>ap-southeast-1b</availabilityZone>
      <description/>
      <ownerId>053230519467</ownerId>
      <requesterManaged>>false</requesterManaged>
      <status>in-use</status>
      <macAddress>02:81:60:cb:27:37</macAddress>
    </item>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

```
<privateIpAddress>10.0.0.146</privateIpAddress>
<sourceDestCheck>>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-3f4b5653</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-6537fc0c</attachmentId>
  <instanceId>i-22197876</instanceId>
  <instanceOwnerId>053230519467</instanceOwnerId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2012-07-01T21:45:27.000Z</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<tagSet/>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.146</privateIpAddress>
    <primary>true</primary>
  </item>
  <item>
    <privateIpAddress>10.0.0.148</privateIpAddress>
    <primary>false</primary>
  </item>
  <item>
    <privateIpAddress>10.0.0.150</privateIpAddress>
    <primary>false</primary>
  </item>
</privateIpAddressesSet>
</item>
<item>
  <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
  <subnetId>subnet-cd8a35a4</subnetId>
  <vpcId>vpc-f28a359b</vpcId>
  <availabilityZone>ap-southeast-1b</availabilityZone>
  <description>Primary network interface</description>
  <ownerId>053230519467</ownerId>
  <requesterManaged>false</requesterManaged>
  <status>in-use</status>
  <macAddress>02:78:d7:00:8a:1e</macAddress>
  <privateIpAddress>10.0.1.233</privateIpAddress>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-a2a0b2ce</groupId>
      <groupName>quick-start-1</groupName>
    </item>
  </groupSet>
  <attachment>
    <attachmentId>eni-attach-a99c57c0</attachmentId>
    <instanceId>i-886401dc</instanceId>
    <instanceOwnerId>053230519467</instanceOwnerId>
    <deviceIndex>0</deviceIndex>
    <status>attached</status>
    <attachTime>2012-06-27T20:08:44.000Z</attachTime>
```

```
    <deleteOnTermination>true</deleteOnTermination>
  </attachment>
  <tagSet/>
  <privateIpAddressesSet>
    <item>
      <privateIpAddress>10.0.1.233</privateIpAddress>
      <primary>true</primary>
    </item>
    <item>
      <privateIpAddress>10.0.1.20</privateIpAddress>
      <primary>>false</primary>
    </item>
  </privateIpAddressesSet>
</item>
</networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 80)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ResetNetworkInterfaceAttribute](#) (p. 406)

# DescribePlacementGroups

## Description

Describes one or more of your placement groups. For more information about placement groups and cluster instances, see [Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***GroupName.n***

One or more placement group names.

Type: String

Default: Describes all your placement groups, or only those otherwise specified.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filter so that the response includes information for only certain placement groups. For example, you can use a filter to specify that you're interested in groups in the `deleted` state. You can specify multiple values for a filter. The response includes information for a placement group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's that are in the `deleted` state and have a name that includes the string `Project`. The response includes information for a group only if it matches all your filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **group-name**

The name of the placement group.

Type: String

### **state**

The state of the placement group.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

### **strategy**

The strategy of the placement group.

Type: String  
Valid value: `cluster`

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**placementGroupSet**

A list of placement groups, each one wrapped in an `item` element.

Type: [PlacementGroupInfoType](#) (p. 492)

## Examples

### Example Request

This example describes the placement group named XYZ-cluster.

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=XYZ-cluster
&AUTHPARAMS
```

### Example Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>XYZ-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

### Example Request

This example filters the response to include only placement groups that include the string `Project` in the name.

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## Related Actions

- [CreatePlacementGroup](#) (p. 85)
- [DeletePlacementGroup](#) (p. 138)

# DescribeRegions

## Description

Describes one or more regions that are currently available to you.

For a list of the regions supported by Amazon EC2, see [Regions and Endpoints](#).

## Request Parameters

### *RegionName.n*

One or more region names.

Type: String

Default: Describes all regions available to the account.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain regions.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### **endpoint**

The endpoint of the region (for example, `ec2.us-east-1.amazonaws.com`).

Type: String

### **region-name**

The name of the region.

Type: String

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`



#### regionInfo

A list of regions, each one wrapped in an `item` element.

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

## Examples

### Example Request

This example displays information about all regions.

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

### Example Request

This example displays information about just the specified regions.

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1
&AUTHPARAMS
```

### Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <regionInfo>
    <item>
      <regionName>us-east-1</regionName>
      <regionEndpoint>ec2.us-east-1.amazonaws.com</regionEndpoint>
    </item>
    <item>
      <regionName>eu-west-1</regionName>
      <regionEndpoint>ec2.eu-west-1.amazonaws.com</regionEndpoint>
    </item>
  </regionInfo>
</DescribeRegionsResponse>
```

### Example Request

This example displays information about all regions that have the string `ap` in the endpoint.

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&Filter.1.Name=endpoint
&Filter.1.Value.1=*ap*
&AUTHPARAMS
```

## Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <regionInfo>
    <item>
      <regionName>ap-southeast-1</regionName>
      <regionEndpoint>ec2.ap-southeast-1.amazonaws.com</regionEndpoint>
    </item>
  </regionInfo>
</DescribeRegionsResponse>
```

## Related Actions

- [DescribeAvailabilityZones](#) (p. 172)
- [RunInstances](#) (p. 416)

# DescribeReservedInstances

## Description

Describes one or more of the Reserved Instances that you purchased.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance use. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*. You determine the type of the Reserved Instances offerings by including the optional *offeringType* parameter. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

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

## Request Parameters

### *ReservedInstancesId.n*

One or more Reserved Instance IDs.

Type: String

Default: Describes all your Reserved Instances, or only those otherwise specified.

Required: No

### *offeringType*

The Reserved Instance offering type.

Type: String

Valid values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization`

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filter so that the response includes information for only certain Reserved Instances. For example, you can use a filter to specify that you're interested in Reserved Instances in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for a Reserved Instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Reserved Instances that are in a specific Availability Zone and have a specific tag. The response includes information for a Reserved Instance only if it matches all of the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**availability-zone**

The Availability Zone where the Reserved Instance can be used.

Type: String

**duration**

The duration of the Reserved Instance (one year or three years), in seconds.

Type: Long

Valid values: 31536000 | 94608000

**fixed-price**

The purchase price of the Reserved Instance (for example, 9800.0)

Type: Double

**instance-type**

The instance type on which the Reserved Instance can be used.

Type: String

**product-description**

The product description of the Reserved Instance.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

**reserved-instances-id**

The ID of the Reserved Instance.

Type: String

**start**

The time at which the Reserved Instance purchase request was placed (for example, 2010-08-07T11:54:42.000Z).

Type: DateTime

**state**

The state of the Reserved Instance.

Type: String

Valid values: pending-payment | active | payment-failed | retired

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**usage-price**

The usage price of the Reserved Instance, per hour (for example, 0.84)

Type: Double

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**reservedInstancesSet**

A list of Reserved Instances, each one wrapped in an `item` element.

Type: [DescribeReservedInstancesResponseSetItemType](#) (p. 453)

## Examples

### Example Request

This example describes Reserved Instances owned by your account.

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

### Example Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
```

```
    </item>
    ...
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

## Example Request

This example filters the response to include only one-year, `m1.small` Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to `Linux/UNIX (Amazon VPC)`.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

## Related Actions

- [PurchaseReservedInstancesOffering](#) (p. 369)
- [DescribeReservedInstancesOfferings](#) (p. 252)

# DescribeReservedInstancesListings

## Description

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace. This call returns information, such as the ID of the Reserved Instance to which a listing is associated.

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

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price you want 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 you want to purchase, and the Marketplace will match what you're searching for with what's available. The Marketplace will first sell the lowest priced Reserved Instances to you, and continue to sell available Reserved Instance listings to you until your demand is met. You will be charged based on the total price of all of the listings that you purchase.

For more information about Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***ReservedInstancesListingId.n***

The information about the Reserved Instance listing wrapped in an `item` element.

Type: [DescribeReservedInstancesListingSetItemType](#) (p. 451)

Default: None

Required: No

### ***ReservedInstancesId.n***

The set of Reserved Instances IDs which are used to see associated listings.

Type: [DescribeReservedInstancesSetItemType](#) (p. 454)

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances listings, even though you can use other options instead.

For example, you can use a filter or an option to get the listing of Reserved Instances that are in an active state. You can also specify multiple options or filters (for example, to limit the response to the Reserved Instances listings that are in the closed state with a specific status message). The response includes information for a listing only if it matches all options or filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **status**

Status of the Reserved Instance listing.

Valid values: `pending` | `active` | `cancelled` | `closed`

Type: String

### **status-message**

Reason for the status.

Type: String

### **reserved-instances-listing-id**

The ID of the Reserved Instances listing.

Type: String

### **reserved-instances-id**

The ID of the Reserved Instances.

Type: String

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **reservedInstancesListingsSet**

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

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 450)

## Examples

### Example Request

This example shows all the listings associated with your account.



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

## Example Response

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

## Related Actions

- [CancelReservedInstancesListing](#) (p. 47)
- [CreateReservedInstancesListing](#) (p. 87)

# DescribeReservedInstancesOfferings

## Description

Describes Reserved Instance offerings that are available for purchase. With Amazon EC2 Reserved Instances, you purchase the right to launch Amazon EC2 instances for a period of time. During that time period you will not receive insufficient capacity errors, and you will pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*. You determine the type of the Reserved Instances offerings by including the optional *offeringType* parameter when calling `DescribeReservedInstancesOfferings`. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` will only list information about the Medium Utilization Reserved Instance offering type.

For information about Reserved Instances pricing, go to [Understanding Reserved Instance Pricing Tiers](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Reserved Instances, go to [Reserved Instances](#) also in the *Amazon Elastic Compute Cloud User Guide*.

Starting with the 2012-08-15 API version, AWS offers the Reserved Instance Marketplace, where you can buy and sell Reserved Instances. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS and Reserved Instance Marketplace offerings. If you are using tools that predate the 2012-08-15 API version, `DescribeReservedInstancesOfferings` will only list information about the Amazon EC2 Reserved Instance offerings.

For more information about the Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***ReservedInstancesOfferingId.n***

One or more Reserved Instances offering IDs.

Type: String

Default: None

Required: No

### ***InstanceType***

The Amazon EC2 instance type on which the Reserved Instance can be used. See [Available Instance Types](#) for more information.

Type: String

Default: None

Required: No

### ***AvailabilityZone***

The Availability Zone in which the Reserved Instance can be used.

Type: String

Default: None

Required: No

***ProductDescription***

The Reserved Instance description. Instances that include (Amazon VPC) in the description are for use with Amazon VPC.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Default: None

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

***InstanceTenancy***

The tenancy of the Reserved Instance offering. A Reserved Instance with tenancy of dedicated will run on single-tenant hardware and can only be launched within a VPC.

Type: String

Valid values: default | dedicated

Default: default

Required: No

***OfferingType***

The Reserved Instance offering type.

Type: String

Valid values: Heavy Utilization | Medium Utilization | Light Utilization

Default: None

Required: No

***IncludeMarketplace***

Include Marketplace offerings in the response.

Type: Boolean

Default: true

Required: No

***MinDuration***

Minimum duration (in seconds) to filter when searching for offerings.

Type: Long

Default: 2592000 (1 month)

Required: No

***MaxDuration***

Maximum duration (in seconds) to filter when searching for offerings.

Type: Long

Default: 94608000 (3 years)

Required: No

***MaxInstanceCount***

Maximum number of instances to filter when searching for offerings.

Type: Integer

Default: 20

Required: No

***NextToken***

Token to use when requesting the next paginated set of offerings.

Type: String

Default: First page of results if the string is empty.

Required: No

***MaxResults***

Maximum number of offerings to return.

Type: Integer

Default: 100

Maximum: 100

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances offerings, even though you can use other options instead.

For example, you could use an option or a filter to get the offerings for a specific instance type. You can specify multiple options or filters (for example, limit the response to the `m2.xlarge` instance type, and only for Windows instances). The response includes information for an offering only if it matches all options or filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

**`availability-zone`**

The Availability Zone where the Reserved Instance can be used.

Type: String

**`duration`**

The duration of the Reserved Instance (for example, one year or three years), in seconds.

Type: Long

Valid values: 31536000 | 94608000

**`fixed-price`**

The purchase price of the Reserved Instance (for example, 9800.0)

Type: Double

**`instance-type`**

The Amazon EC2 instance type on which the Reserved Instance can be used.

Type: String

**`marketplace`**

Set to `true` to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from AWS and Reserved Instance Marketplace are listed.

Type: Boolean

**`product-description`**

The description of the Reserved Instance.

Type: String

Valid values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

**reserved-instances-offering-id**

The Reserved Instances offering ID.

Type: String

**usage-price**

The usage price of the Reserved Instance, per hour (for example, 0.84)

Type: Double

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**reservedInstancesOfferingsSet**

A list of Reserved Instances offerings. Each offering's information is wrapped in an `item` element.

Type: [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 451)

**nextToken**

The next paginated set of results to return.

Type: String

## Examples

### Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/UNIX, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2013-07-15
&AUTHPARAMS
```

**Note**

When using the Query API, all strings must be URL-encoded.

This is the response listing Reserved Instance Marketplace offerings only.

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <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

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS Reserved Instances and Reserved Instance Marketplace offerings. If you want a list of AWS offerings only, set `IncludeMarketplace` to `false`.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
```

```
&Version=2013-07-15  
&AUTHPARAMS
```

## Example Using MaxResults and nextToken to Manage Results

API version 2012-08-15 provides pagination support, which means that you can query the results sequentially and in parts. Use `MaxResults` to specify the maximum number of results that will be returned in the response. Then each paginated response will contain a `nextToken`, which can be provided as input to a subsequent `DescribeReservedInstancesOfferings` call to fetch the next page.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings  
&MaxResults=5  
&Version=2013-07-15  
&AUTHPARAMS
```

The response should look similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>  
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>  
  <reservedInstancesOfferingsSet>  
    ...  
    <item>  
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</re  
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>Heavy Utilization</offeringType>  
      <recurringCharges>  
        <item>  
          <frequency>Hourly</frequency>  
          <amount>0.052</amount>  
        </item>  
      </recurringCharges>  
      <marketplace>>false</marketplace>  
      <pricingDetailsSet/>  
    </item>  
    <item>  
      <reservedInstancesOfferingId>e5a2ff3b-a4f3-477c-8928-dbd00EXAMPLE</re  
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>
```

Then, you can use the `NextToken` to fetch the next page. The request should look like the following example. Make sure that you URL encode the `NextToken` value.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&NextToken=h%2FC8YKPBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&Version=2013-07-15
&AUTHPARAMS
```

The response should be similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>652900ca-902c-42fa-b8ae-da67bEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>438012d3-496e-4ab3-b1f6-38ffeEXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>425.2</fixedPrice>
      <usagePrice>0.124</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>248e7b75-579e-4599-a34d-cb6aaEXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>780.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Heavy Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.064</amount>
```

```
    </item>
  </recurringCharges>
  <marketplace>>false</marketplace>
  <pricingDetailsSet/>
</item>
...
</reservedInstancesOfferingsSet>
<nextToken>69AJRhm9bxVUF8YCKAs2HsQjyqa246eTkVv23eNFTkw=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

This example describes available Reserved Instance offerings.

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

## Example Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>48692ald-3036-48fd-8c0e-d34681b97efdEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>248e7b75-c83a-48c1-bcf7-
b7f03e9c43feEXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>700.0</fixedPrice>
      <usagePrice>0.06</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Medium Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

This example filters the response to include only one-year, `m1.small` or `m1.large` Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
```

```
&Filter.2.Value.2=m1.large  
&Filter.3.Name=product-description  
&Filter.3.Value.1=Linux%2FUNIX  
&AUTHPARAMS
```

## Related Actions

- [PurchaseReservedInstancesOffering](#) (p. 369)
- [DescribeReservedInstances](#) (p. 244)

# DescribeRouteTables

## Description

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

### ***RouteTableId.n***

One or more route table IDs.

Type: String

Default: Describes all your route tables.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain tables. For example, you can use a filter to specify that you're interested in the tables associated with a particular subnet. You can specify multiple values for a filter. The response includes information for a table only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify tables that have a specific route and are associated with a specific subnet. The response includes information for a table only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **`association.route-table-association-id`**

The ID of an association ID for the route table.

Type: String

### **`association.route-table-id`**

The ID of the route table involved in the association.

Type: String

**association.subnet-id**

The ID of the subnet involved in the association.

Type: String

**association.main**

Indicates whether the route table is the main route table for the VPC.

Type: Boolean

**route-table-id**

The ID of the route table.

Type: String

**route.destination-cidr-block**

The CIDR range specified in a route in the table.

Type: String

**route.gateway-id**

The ID of a gateway specified in a route in the table.

Type: String

**route.instance-id**

The ID of an instance specified in a route in the table.

Type: String

**route.origin**

Describes how the route was created.

Type: String

Valid values: `CreateRouteTable` | `CreateRoute` | `EnableVgwRoutePropagation`

`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.

**route.state**

The state of a route in the route table. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, and so on).

Type: String

Valid values: `active` | `blackhole`

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

Filter.1.Value.1=X

Filter.1.Value.2=Y

**vpc-id**

The ID of the VPC for the route table.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**routeTableSet**

A list of route tables, each one wrapped in an `item` element.

Type: [RouteTableType](#) (p. 503)

## Examples

### Example Request

This example describes all route tables in the VPC.

```
https://ec2.amazonaws.com/?Action=DescribeRouteTables
```

### Example Response

The first route table in the returned list is the VPC's main route table. Its association ID represents the association between the table and the VPC

```
DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
    </item>
  </routeTableSet>
</DescribeRouteTablesResponse>
```

```
        </associationSet>
      <tagSet/>
    </item>
    <item>
      <routeTableId>rtb-f9ad4890</routeTableId>
      <vpcId>vpc-11ad4878</vpcId>
      <routeSet>
        <item>
          <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
          <gatewayId>local</gatewayId>
          <state>active</state>
          <origin>CreateRouteTable</origin>
        </item>
        <item>
          <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>
          <gatewayId>igw-eaad4883</gatewayId>
          <state>active</state>
        </item>
      </routeSet>
      <associationSet>
        <item>
          <routeTableAssociationId>rtbassoc-faad4893</routeTableAssoci
ationId>
          <routeTableId>rtb-f9ad4890</routeTableId>
          <subnetId>subnet-15ad487c</subnetId>
        </item>
      </associationSet>
      <tagSet/>
    </item>
  </routeTableSet>
</DescribeRouteTablesResponse>
```

## Related Actions

- [AssociateRouteTable](#) (p. 22)
- [DisassociateRouteTable](#) (p. 334)
- [DeleteRouteTable](#) (p. 142)
- [CreateRouteTable](#) (p. 99)
- [ReplaceRouteTableAssociation](#) (p. 389)

# DescribeSecurityGroups

## Description

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

## Request Parameters

### *GroupName.n*

One or more security group names.

Type: String

Default: Describes all your security groups.

Condition: [EC2-Classical, default VPC] You can specify either `GroupName` or `GroupId`

Required: No

### *GroupId.n*

One or more security group IDs.

Type: String

Default: Describes all your security groups.

Condition: Required for a nondefault VPC; for EC2-Classical or a default VPC, you can specify either `GroupName` or `GroupId`

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain security groups. For example, you can use a filter to specify that you're interested in groups whose name contains a specific string. You can specify multiple values for a filter. The response includes information for a security group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's whose name contains a specific string, and that give permission to another security group with a different string in its name. The response includes information for a group only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

### Important

Filters are based on literal strings only. This is important to remember when you want to use filters to return only security groups with access allowed on a specific port number or numbers. For example, suppose that you want to get all groups that have access on port 22, and that GroupA gives access on a range of ports using `fromPort=20` and `toPort=30`. If you filter with



`ip-permission.from-port=22` or `ip-permission.to-port=22` (or both), the response does not contain information for GroupA. You get information for GroupA only if you specify `ip-permission.from-port=20` or `ip-permission.to-port=30` (or both).

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**description**

The description of the security group.

Type: String

**group-id**

The ID of the security group.

Type: String

**group-name**

The name of the security group.

Type: String

**ip-permission.cidr**

The CIDR range that has been granted the permission.

Type: String

**ip-permission.from-port**

The start of port range for the TCP and UDP protocols, or an ICMP type number.

Type: String

**ip-permission.group-name**

The name of security group that has been granted the permission.

Type: String

**ip-permission.protocol**

The IP protocol for the permission.

Type: String

Valid values: `tcp` | `udp` | `icmp` or a protocol number

**ip-permission.to-port**

The end of port range for the TCP and UDP protocols, or an ICMP code.

Type: String

**ip-permission.user-id**

The ID of an AWS account that has been granted the permission.

Type: String

**owner-id**

The AWS account ID of the owner of the security group.

Type: String

**tag-key**

The key of a tag assigned to the security group.

Type: String

**tag-value**

The value of a tag assigned to the security group.

Type: String

**vpc-id**

Only return the security groups that belong to the specified EC2-VPC ID.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**securityGroupInfo**

A list of security groups, each one wrapped in an `item` element.

Type: [SecurityGroupItemType](#) (p. 508)

## Examples

### Example Request

This example returns information about two security groups that are configured for the account.

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupName.1=WebServers
&GroupName.2=RangedPortsBySource
&AUTHPARAMS
```

### Example Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>111122223333</ownerId>
      <groupId>sg-1a2b3c4d</groupId>
      <groupName>WebServers</groupName>
      <groupDescription>Web Servers</groupDescription>
      <vpcId/>
      <ipPermissions>
        <item>
          <ipProtocol>tcp</ipProtocol>
          <fromPort>80</fromPort>
          <toPort>80</toPort>
          <groups/>
          <ipRanges>
            <item>
              <cidrIp>0.0.0.0/0</cidrIp>
            </item>
          </ipRanges>
        </item>
      </ipPermissions>
      <ipPermissionsEgress/>
    </item>
    <item>
      <ownerId>111122223333</ownerId>
      <groupId>sg-2a2b3c4d</groupId>
```

```
<groupName>RangedPortsBySource</groupName>
<groupDescription>Group A</groupDescription>
<ipPermissions>
  <item>
    <ipProtocol>tcp</ipProtocol>
    <fromPort>6000</fromPort>
    <toPort>7000</toPort>
    <groups>
      <item>
        <userId>111122223333</userId>
        <groupId>sg-3a2b3c4d</groupId>
        <groupName>Group B</groupName>
      </item>
    </groups>
    <ipRanges/>
  </item>
</ipPermissions>
<ipPermissionsEgress/>
</item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## Example Request

This example describes all security groups that grant access over TCP specifically on port 22 from instances in either the `app_server_group` or `database_group`.

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&Filter.1.Name=ip-permission.protocol
&Filter.1.Value.1=tcp
&Filter.2.Name=ip-permission.from-port
&Filter.2.Value.1=22
&Filter.3.Name=ip-permission.to-port
&Filter.3.Value.1=22
&Filter.4.Name=ip-permission.group-name
&Filter.4.Value.1=app_server_group
&Filter.4.Value.2=database_group
&AUTHPARAMS
```

## Related Actions

- [CreateSecurityGroup](#) (p. 101)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [RevokeSecurityGroupIngress](#) (p. 413)
- [DeleteSecurityGroup](#) (p. 144)

# DescribeSnapshotAttribute

## Description

Describes an attribute of the specified snapshot. You can specify only one attribute at a time.

## Request Parameters

### *SnapshotId*

The ID of the Amazon EBS snapshot.

Type: String

Default: None

Required: Yes

### *Attribute*

The snapshot attribute.

Type: String

Valid values: `createVolumePermission` | `productCodes`

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `snapshotId`

The ID of the Amazon EBS snapshot.

Type: `xsd:string`

### `createVolumePermission`

A list of permissions for creating volumes from the snapshot. Each permission is wrapped in an `item` element.

Type: [CreateVolumePermissionItemType](#) (p. 445)

### `productCodes`

A list of product codes. Each product code is wrapped in an `item` element type that contains a product code and a type.

Type: [ProductCodesSetItemType](#) (p. 498)

## Examples

### Example Request

This example describes permissions for the `snap-1a2b3c4d` snapshot.

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

```
&Attribute=createVolumePermission  
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <snapshotId>snap-1a2b3c4d</snapshotId>  
  <createVolumePermission>  
    <item>  
      <group>all</group>  
    </item>  
  </createVolumePermission>  
</DescribeSnapshotAttributeResponse>
```

## Example Request

This example describes product codes associated with the snap-1a2b3c4d snapshot.

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

## Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <snapshotId>snap-1a2b3c4d</snapshotId>  
  <productCodes>  
    <item>  
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>  
      <type>marketplace</type>  
    </item>  
  </productCodes>  
</DescribeSnapshotAttributeResponse>
```

## Related Actions

- [ModifySnapshotAttribute](#) (p. 362)
- [DescribeSnapshots](#) (p. 271)
- [ResetSnapshotAttribute](#) (p. 408)
- [CreateSnapshot](#) (p. 104)

# DescribeSnapshots

## Description

Describes one or more of the Amazon EBS snapshots available to you. Snapshots available to you include public snapshots available for any AWS account to launch, private snapshots you own, and private snapshots owned by another AWS account but for which you've been given explicit create volume permissions.

The create volume permissions fall into the following categories:

### **public**

The owner of the snapshot granted create volume permissions for the snapshot to the `all` group. All AWS accounts have create volume permissions for these snapshots.

### **explicit**

The owner of the snapshot granted create volume permissions to a specific AWS account.

### **implicit**

An AWS account has implicit create volume permissions for all snapshots it owns.

The list of snapshots returned can be modified by specifying snapshot IDs, snapshot owners, or AWS accounts with create volume permissions. If no options are specified, Amazon EC2 returns all snapshots for which you have create volume permissions.

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it will not be 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 snapshot(s)), `self` for snapshots for which you own or have explicit permissions, or `all` for public snapshots.

## Request Parameters

### ***SnapshotId.n***

One or more snapshot IDs.

Type: String

Default: Describes snapshots for which you have launch permissions.

Required: No

### ***Owner.n***

Returns the snapshots owned by the specified owner. Multiple owners can be specified.

Type: String

Valid values: `self` | `amazon` | AWS Account ID

Default: None

Required: No

### ***RestorableBy.n***

One or more AWS accounts IDs that can create volumes from the snapshot.

Type: String

Default: None

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain snapshots. For example, you can use a filter to specify that you're interested in snapshots whose status is `pending`. You can specify multiple values for a filter. The response includes information for a snapshot only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify snapshot's that have a `pending` status, and have a specific tag. The response includes information for a snapshot only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**description**

A description of the snapshot.

Type: String

**owner-alias**

The AWS account alias (for example, `amazon`) that owns the snapshot.

Type: String

**owner-id**

The ID of the AWS account that owns the snapshot.

Type: String

**progress**

The progress of the snapshot, as a percentage (for example, `80%`).

Type: String

**snapshot-id**

The snapshot ID.

Type: String

**start-time**

The time stamp when the snapshot was initiated.

Type: DateTime

**status**

The status of the snapshot.

Type: String

Valid values: `pending` | `completed` | `error`

#### **tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

#### **tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

#### **tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

#### **volume-id**

The ID of the volume the snapshot is for.

Type: String

#### **volume-size**

The size of the volume, in GiB (for example, 20).

Type: String

## Response Elements

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

#### **requestId**

The ID of the request.

Type: `xsd:string`

#### **snapshotSet**

A list of snapshots. Each snapshot is wrapped in an `item` element.

Type: [DescribeSnapshotsSetItemResponseType](#) (p. 455)

## Examples

### Example Request

This example describes snapshot `snap-1a2b3c4d`.

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



## Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>80%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Example Request

This example filters the response to include only snapshots with the `pending` status, and that are also tagged with a value that includes the string `db_`.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag-value
&Filter.2.Value.1=*db_*
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 104)
- [DeleteSnapshot](#) (p. 146)

# DescribeSpotDatafeedSubscription

## Description

Describes the datafeed for Spot Instances. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

`DescribeSpotDatafeedSubscription` has no parameters.

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **spotDatafeedSubscription**

The Spot Instance datafeed subscription.

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

## Examples

### Example Request

This example describes the datafeed for the account.

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

### Example Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [CreateSpotDatafeedSubscription](#) (p. 107)
- [DeleteSpotDatafeedSubscription](#) (p. 148)

# DescribeSpotInstanceRequests

## Description

Describes the Spot Instance requests that belong to your account. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***SpotInstanceRequestId.n***

One or more Spot Instance request IDs.

Type: String

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Spot Instance requests. For example, you can use a filter to specify that you're interested in requests where the Spot Price is a specific value. (You can't use a greater than or less than comparison, however you can use \* and ? wildcards.) You can specify multiple values for a filter. The response includes information for a Spot Instance request only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify that the Spot Price is a specific value, and that the instance type is m1.small. The response includes information for a request only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **availability-zone-group**

The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone.

Type: String

**create-time**

The time stamp when the Spot Instance request was created.

Type: String

**fault-code**

The fault code related to the request.

Type: String

**fault-message**

The fault message related to the request.

Type: String

**instance-id**

The ID of the instance that fulfilled the request.

Type: String

**launch-group**

The Spot Instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

**launch.block-device-mapping.delete-on-termination**

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

**launch.block-device-mapping.device-name**

The device name (for example, /dev/sdh) for the Amazon EBS volume.

Type: String

**launch.block-device-mapping.snapshot-id**

The ID of the snapshot used for the Amazon EBS volume.

Type: String

**launch.block-device-mapping.volume-size**

The volume size of the Amazon EBS volume, in GiB.

Type: String

**launch.block-device-mapping.volume-type**

The volume type of the Amazon EBS volume.

Type: String

Valid values: `standard` | `io1`

**launch.group-id**

The security group for the instance.

Type: String

**launch.image-id**

The ID of the AMI.

Type: String

**launch.instance-type**

The type of instance (for example, `m1.small`).

Type: String

**launch.kernel-id**

The kernel ID.

Type: String

**launch.key-name**

The name of the key pair the instance launched with.

Type: String

**launch.monitoring-enabled**

Whether monitoring is enabled for the Spot Instance.

- Type: Boolean
- launch.ramdisk-id**  
The RAM disk ID.  
Type: String
- launch.network-interface.network-interface-id**  
The ID of the network interface.  
Type: String
- launch.network-interface.device-index**  
The index of the device for the network interface attachment on the instance.  
Type: Integer
- launch.network-interface.subnet-id**  
The ID of the subnet for the instance.  
Type: String
- launch.network-interface.description**  
A description of the network interface.  
Type: String
- launch.network-interface.private-ip-address**  
The primary private IP address of the network interface.  
Type: String
- launch.network-interface.delete-on-termination**  
Indicates whether the network interface is deleted when the instance is terminated.  
Type: Boolean
- launch.network-interface.group-id**  
The ID of the security group associated with the network interface.  
Type: String
- launch.network-interface.group-name**  
The name of the security group associated with the network interface.  
Type: String
- launch.network-interface.addresses.primary**  
Indicates whether the IP address is the primary private IP address.  
Type: String
- product-description**  
The product description associated with the instance.  
Type: String  
Valid values: Linux/UNIX | Windows
- spot-instance-request-id**  
The Spot Instance request ID.  
Type: String
- spot-price**  
The maximum hourly price for any Spot Instance launched to fulfill the request.  
Type: String
- state**  
The state of the Spot Instance request. Spot bid status information can help you track your Amazon EC2 Spot Instance requests. For information, see [Tracking Spot Requests with Bid Status Codes](#) in the *Amazon Elastic Compute Cloud User Guide*.  
Type: String  
Valid values: open | active | closed | cancelled | failed
- status-code**  
The short code describing the most recent evaluation of your Spot Instance request. For more information, see [Spot Bid Status](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**status-message**

The message explaining the status of the Spot Instance request.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**type**

The type of Spot Instance request.

Type: String

Valid values: `one-time` | `persistent`

**launched-availability-zone**

The Availability Zone in which the bid is launched.

Type: String

**valid-from**

The start date of the request.

Type: DateTime

**valid-until**

The end date of the request.

Type: DateTime

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**spotInstanceRequestSet**

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

Type: [SpotInstanceRequestSetItemType](#) (p. 510)

#### networkInterfaceSet

Information about the network interface.

Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 472)

## Examples

### Example Request

This example returns information about current Spot Instance requests.

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

### Example Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.09</spotPrice>
      <type>one-time</type>
      <state>active</state>
      <status>
        <code>fulfilled</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request is fulfilled.</message>
      </status>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>gsg-keypair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>webserv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
        <ebsOptimized>>false</ebsOptimized>
      </launchSpecification>
      <instanceId>i-1a2b3c4d</instanceId>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
      <launchedAvailabilityZone>us-east-1a</launchedAvailabilityZone>
    </item>
  </spotInstanceRequestSet/>
</DescribeSpotInstanceRequestsResponse>
```



## Example Request

This example describes all persistent Spot Instance requests that have resulted in the launch of at least one `m1.small` instance, that has been fulfilled in the `us-east-1a` Availability Zone, and that also has monitoring enabled.

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-east-1a
&AUTHPARAMS
```

## Find Running Spot Instances

You can use `DescribeSpotInstanceRequests` to find a running Spot Instance by examining the response. If the `status` of the Spot Instance is fulfilled, the `instanceId` will appear in the response and contain the identifier of the instance.

Alternatively, you can use [DescribeInstances](#) (p. 202) and use a filter to look for instances where `instanceLifecycle` contains `spot`. The following is an example request.

```
https://ec2.amazonaws.com/
?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
```

The following is an example response.

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>b1719f2a-5334-4479-b2f1-26926EXAMPLE</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>Linux</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-1a2b3c4d</instanceId>
          <imageId>ami-1a2b3c4d</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
          <privateDnsName>private_DNS_name</privateDnsName>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```

<dnsName>DNS_name</dnsName>
<reason/>
<keyName>gsg-keypair</keyName>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>t1.micro</instanceType>
<launchTime>YYYY-MM-DDTHH:MM:SS.000Z</launchTime>
<placement>
  <availabilityZone>us-east-1a</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<kernelId>aki-1a2b3c4d</kernelId>
<monitoring>
  <state>disabled</state>
</monitoring>
<privateIpAddress>private_IP_address</privateIpAddress>
<ipAddress>IP_address</ipAddress>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>Linux</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sdal</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sdal</deviceName>
    <ebs>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
      <deleteOnTermination>>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<i><instanceLifecycle>spot</instanceLifecycle>
<spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
</i>
<virtualizationType>paravirtual</virtualizationType>
<clientToken>client_token</clientToken>
<tagSet/>
<hypervisor>xen</hypervisor>
<networkInterfaceSet/>
<ebsOptimized>>false</ebsOptimized>
</item>
</instancesSet>
<requesterId>requester_ID</requesterId>
</item>
</reservationSet>
</DescribeInstancesResponse>"

```

## Related Actions

- [RequestSpotInstances](#) (p. 394)
- [CancelSpotInstanceRequests](#) (p. 50)

- [DescribeSpotPriceHistory](#) (p. 285)

# DescribeSpotPriceHistory

## Description

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

When you use the `availability-zone` option, this command describes the price history for the specified Availability Zone with the most recent set of prices listed first. If you don't specify an Availability Zone, the command returns the prices across all Availability Zones, starting with the most recent set. However, if you use this command with versions of the API earlier than the 2011-05-15 version, this command returns the lowest price across the region for the given time period. The prices returned are listed in chronological order — from the oldest to the most recent.

## Request Parameters

### ***StartTime***

The start date and time of the Spot Instance price history data.

Type: DateTime

Default: None

Required: No

### ***EndTime***

The end date and time of the Spot Instance price history data.

Type: DateTime

Default: None

Required: No

### ***InstanceType.n***

The instance type to return.

Type: String

Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `cg1.4xlarge`. See [Available Instance Types](#) for more information.

Default: None

Required: No

### ***ProductDescription.n***

Filters the results by basic product description.

Type: String

Valid values: `Linux/UNIX` | `SUSE Linux` | `Windows` | `Linux/UNIX (Amazon VPC)` | `SUSE Linux (Amazon VPC)` | `Windows (Amazon VPC)`

Default: Returns all information

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String  
Default: None  
Required: No

**AvailabilityZone**

Filters the results by availability zone.

Type: String  
Valid values: `us-east-1a`, etc.  
Default: None  
Required: No

**MaxResults**

The number of rows to return.

Type: Integer  
Default: None  
Required: No

**NextToken**

The next set of rows to return.

Type: String  
Valid values: A `NextToken` value returned by a previous call of the API.  
Default: None  
Required: No

## Supported Filters

**Note**

Our policy is to provide filters for all `ec2-describe` calls so you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Spot Price histories, even though you can use the options instead.

For example, you could use an option or a filter to get the history for a particular instance type. You can specify multiple request parameters or filters (for example, limit the response to the `m2.xlarge` instance type, and only for Windows instances). The response includes information for a price history only if it matches all your options or filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**instance-type**

The type of instance (for example, `m1.small`).  
Type: String

**product-description**

The product description for the Spot Price.

Type: String  
Valid values: `Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)`

**spot-price**

The Spot Price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).  
Type: String

**timestamp**

The timestamp of the Spot Price history (for example, 2010-08-16T05:06:11.000Z). You can use wildcards (\* and ?). Greater than or less than comparison is not supported.

Type: DateTime

**availability-zone**

The Availability Zone for which prices should be returned.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**spotPriceHistorySet**

A list of historical Spot Prices. Each price is wrapped in an `item` element.

Type: [SpotPriceHistorySetItemType](#) (p. 512)

**nextToken**

The string marking the next set of results returned. Displays empty if there are no more results to be returned.

Type: xsd:string

## Examples

### Example Request

This example returns Spot Price history for a particular day in December 2009 for Availability Zone us-east-1a.

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2009-12-04T00:00:00.000Z
&EndTime=2009-12-04T23:59:59.000Z
&AvailabilityZone=us-east-1a
&AUTHPARAMS
```

This request uses filters instead of regular parameters to achieve the same results.

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1=2009-12-04*
&Filter.2.Name=availability-zone
&Filter.2.Value.1=us-east-1a
&AUTHPARAMS
```

### Example Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotPriceHistorySet>
  <item>
    <instanceType>m1.small</instanceType>
    <productDescription>Linux/UNIX</productDescription>
    <spotPrice>0.287</spotPrice>
    <timestamp>2009-12-04T20:56:05.000Z</timestamp>
    <availabilityZone>us-east-1a</availabilityZone>
  </item>
  <item>
    <instanceType>m1.small</instanceType>
    <productDescription>Windows</productDescription>
    <spotPrice>0.033</spotPrice>
    <timestamp>2009-12-04T22:33:47.000Z</timestamp>
    <availabilityZone>us-east-1a</availabilityZone>
  </item>
</spotPriceHistorySet>
<nextToken/>
</DescribeSpotPriceHistoryResponse>
```

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)
- [CancelSpotInstanceRequests](#) (p. 50)

# DescribeSubnets

## Description

Describes one or more of your subnets.

## Request Parameters

### *SubnetId.n*

One or more subnet IDs.

Type: String

Default: Describes all your subnets

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain subnets. For example, you can use a filter to specify that you're interested in the subnets in the `available` state. You can specify multiple values for a filter. The response includes information for a subnet only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify subnets that are in a specific VPC and are in the `available` state. The response includes information for a subnet only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### **availability-zone**

The Availability Zone for the subnet.

Type: String

### **available-ip-address-count**

The number of IP addresses in the subnet that are available.

Type: String

### **cidr**

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.

Type: String



Constraints: Must contain the slash followed by one or two digits (for example, /28)

**defaultForAz**

Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

**state**

The state of the subnet.

Type: String

Valid values: pending | available

**subnet-id**

The ID of the subnet.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC for the subnet.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**subnetSet**

A list of subnets. Each subnet is wrapped in an `item` element.

Type: [SubnetType](#) (p. 514)

## Examples

### Example Request

This example describes the subnets with the IDs `subnet-9d4a7b6c` and `subnet-6e7f829e`.

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&SubnetId.1=subnet-9d4a7b6c
&SubnetId.2=subnet-6e7f829e
&AUTHPARAMS
```

### Example Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
```

### Example Request

This example uses filters to describe any subnet you own that is in the VPC with the ID `vpc-1a2b3c4d` or `vpc-6e7f8a92`, and whose state is `available`.

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&Filter.1.Value.2=vpc-6e7f8a92
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

## Related Actions

- [CreateSubnet](#) (p. 109)
- [DeleteSubnet](#) (p. 149)

# DescribeTags

## Description

Describes one or more of the tags for your EC2 resources.

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

## Request Parameters

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters to limit the response when describing tags. For example, you can use a filter to get only the tags for a specific resource type. You can specify multiple values for a filter. The response includes information for a tag only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify a specific resource type and tag values that contain the string `database`). The response includes information for a tag only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?`.

The following are the available filters.

### **key**

The tag key.

Type: String

### **resource-id**

The resource ID.

Type: String

### **resource-type**

The resource type.

Type: String

Valid values: `customer-gateway | dhcp-options | image | instance | internet-gateway | network-acl | network-interface | reserved-instances | route-table | security-group | snapshot | spot-instances-request | subnet | volume | vpc | vpn-connection | vpn-gateway`

**value**  
The tag value.  
Type: String

## Response Elements

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

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

**tagSet**  
A list of tags. Each tag is wrapped in an `item` element.  
Type: [TagSetItemType](#) (p. 515)

## Examples

### Example Request

This example describes all the tags in your account.

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

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
<item>
  <resourceId>i-12345678</resourceId>
  <resourceType>instance</resourceType>
  <key>database_server</key>
  <value/>
</item>
<item>
  <resourceId>i-12345678</resourceId>
  <resourceType>instance</resourceType>
  <key>stack</key>
  <value>Test</value>
</item>
</tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

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

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS
```

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>database_server</key>
      <value/>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances tagged with the key *webserver*. Note that you can use wildcards with filters. So you could specify the value as *?ebserver* to find tags with the key *webserver* or *Webserver*.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
```

```
</tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances tagged with either `stack=Test` or `stack=Production`.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=stack
&Filter.3.Name=value
&Filter.3.Value.1=Test
&Filter.3.Value.2=Production
&AUTHPARAMS
```

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

## Example Request

This example describes the tags for all your instances tagged with `Purpose=[empty string]`.

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=Purpose
&Filter.3.Name=value
&Filter.3.Value.1=
&AUTHPARAMS
```

## Related Actions

- [CreateTags](#) (p. 111)



- [DeleteTags](#) (p. 151)

# DescribeVolumeAttribute

## Description

Describes the specified attribute of the specified volume. You can specify only one attribute at a time.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *Attribute*

The instance attribute.

Type: String

Valid values: `autoEnableIO` | `productCodes`

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `volumeId`

The ID of the volume.

Type: `xsd:string`

### `autoEnableIO`

The state of `autoEnableIO` attribute.

Type: `NullableAttributeBooleanValueType`

### `productCodes`

A list of product codes. Each product code is wrapped in an `item` element that contains a product code and a type.

Type: [ProductCodesSetItemType](#) (p. 498)

## Example

### Example Request

This example describes the `autoEnableIO` attribute of the volume `vol-12345678`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
```

```
&VolumeId=vol-12345678  
&AUTHPARAMS
```

## Example Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <volumeId>vol-12345678</volumeId>  
  <autoEnableIO>  
    <value>>false</value>  
  </autoEnableIO>  
</DescribeVolumeAttributeResponse>
```

## Example Request

This example describes the `productCodes` attribute of the volume `vol-12345678`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute  
&Attribute=productCodes  
&VolumeId=vol-12345678  
&AUTHPARAMS
```

## Example Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <volumeId>vol-12345678</volumeId>  
  <productCodes>  
    <item>  
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>  
      <type>marketplace</type>  
    </item>  
  </productCodes>  
</DescribeVolumeAttributeResponse>
```

## Related Actions

- [DescribeVolumeStatus](#) (p. 305)
- [ModifyVolumeAttribute](#) (p. 364)

# DescribeVolumes

## Description

Describes the specified Amazon EBS volumes.

For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***VolumeId.n***

One or more volume IDs.

Type: String

Default: Describes all your volumes.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes whose status is `available`. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify that the volume is `available`, and has a specific tag). The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon\?\?` searches for the literal string `*amazon?\.`

The following are the available filters.

### **`attachment.attach-time`**

The time stamp when the attachment initiated.

Type: DateTime

### **`attachment.delete-on-termination`**

Whether the volume is deleted on instance termination.

Type: Boolean

**attachment.device**

The device name that is exposed to the instance (for example, /dev/sda1).

Type: String

**attachment.instance-id**

The ID of the instance the volume is attached to.

Type: String

**attachment.status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**availability-zone**

The Availability Zone in which the volume was created.

Type: String

**create-time**

The time stamp when the volume was created.

Type: DateTime

**size**

The size of the volume, in GiB (for example, 20).

Type: String

**snapshot-id**

The snapshot from which the volume was created.

Type: String

**status**

The status of the volume.

Type: String

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

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**volume-id**

The volume ID.

Type: String

**volume-type**

The Amazon EBS volume type. If the volume is an `io1` volume, the response includes the IOPS as well.

Type: String

Valid values: `standard` | `io1`

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**volumeSet**

A list of volumes. Each volume is wrapped in an `item` element.

Type: [DescribeVolumesSetItemResponseType](#) (p. 456)

## Examples

### Example Request

This example describes all volumes associated with your account.

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

### Example Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>
    </item>
```

```
</volumeSet>  
</DescribeVolumesResponse>
```

## Example Request

This example describes all volumes that are both attached to instance `i-1a2b3c4d` and also set to delete when the instance terminates.

```
https://ec2.amazonaws.com/?Action=DescribeVolumes  
&Filter.1.Name=attachment.instance-id  
&Filter.1.Value.1=i-1a2b3c4d  
&Filter.2.Name=attachment.delete-on-termination  
&Filter.2.Value.1=true  
&AUTHPARAMS
```

## Example Request

This example describes all volumes that belong to either TeamA or TeamB, and that contain log data. You use a wildcard to find the volumes that have a tag with the `Purpose` key that have a value that contains `Log`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumes  
&Filter.1.Name=tag:Owner  
&Filter.1.Value.1=TeamA  
&Filter.1.Value.2=TeamB  
&Filter.2.Name=tag:Purpose  
&Filter.2.Value.1=*Log*  
&AUTHPARAMS
```

## Related Actions

- [CreateVolume](#) (p. 113)
- [DeleteVolume](#) (p. 154)
- [AttachVolume](#) (p. 28)
- [DetachVolume](#) (p. 326)

# DescribeVolumeStatus

## Description

Describes the status of the specified volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, once the system is restored there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The `DescribeVolumeStatus` operation provides the following information about the specified volumes:

**Status:** Reflects the current status of the volume. The possible values are `ok`, `impaired`, `warning`, or `insufficient-data`. If all checks pass, the overall status of the volume is `ok`. If the check fails, the overall status is `impaired`. If the status is `insufficient-data`, then the checks may still be taking place on your volume at the time. We recommend you retry the request. For more information on volume status, see [Monitoring the Status of Your Volumes](#).

**Events:** Reflect the cause of a volume status and may require you to take an action. For example, if your volume returns an `impaired` status, then the volume event might be `potential-data-inconsistency`. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and may have inconsistent data.

**Actions:** Reflect the actions you may have to take in response to an event. For example, if the status of the volume is `impaired` and the volume event shows `potential-data-inconsistency`, then the action will show `enable-volume-io`. This means that you may want to enable the I/O operations for the volume by calling the [EnableVolumeIO](#) (p. 338) 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

### *VolumeId.n*

One or more volume IDs.  
Type: String  
Default: Describes all your volumes.  
Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.  
Type: String  
Default: None  
Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.  
Type: String  
Default: None  
Required: No

### *MaxResults*

The maximum number of paginated volume items per response.



Type: Integer

Default: None

Required: No

***NextToken***

A string specifying the next paginated set of results to return using the pagination token returned by a previous call to this API.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes that have `impaired` status. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify volumes that are in a specific Availability Zone and have the status `impaired`. The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**`availability-zone`**

The Availability Zone of the instance.

Type: String

**`volume-status.status`**

The status of the volume.

Type: String

Valid values: `ok` | `impaired` | `warning` | `insufficient-data`

**`volume-status.details-name`**

The cause for the `volume-status.status`.

Type: String

Valid values: `io-enabled` | `io-performance`

**`volume-status.details-status`**

The status of the `volume-status.details-name`.

Type: String

Valid values for `io-enabled`: `passed` | `failed`

Valid values for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`

**`event.description`**

A description of the event.

Type: String

**`event.not-after`**

The latest end time for the event.

Type: DateTime

**`event.not-before`**

The earliest start time for the event.

Type: DateTime

**event.event-id**

The event ID.

Type: String

**event.event-type**

The event type.

Type: String

Valid values for `io-enabled`: `potential-data-inconsistency`

Valid values for `io-performance`: `io-performance:degraded` |

`io-performance:severely-degraded` | `io-performance:stalled`

**action.code**

The action code for the event, for example, `enable-volume-io`

Type: String

**action.event-id**

The event ID associated with the action.

Type: String

**action.description**

A description of the action.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**volumeStatusSet**

A list of volumes. Each volume is wrapped in an `item` element.

Type: [VolumeStatusItemType](#) (p. 517)

**nextToken**

A string specifying the next paginated set of results to return.

Type: `xsd:string`

## Examples

### Example Request

This example describes the status of all the volumes associated with your account.

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

### Example Response

```
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
```

```
<VolumeId>vol-11111111</volumeId>
<availabilityZone>us-east-1d</availabilityZone>
<volumeStatus>
  <status>ok</status>
  <details>
    <item>
      <name>io-enabled</name>
      <status>passed</status>
    </item>
  </details>
</volumeStatus>
</item>
<item>
  <volumeId>vol-22222222</volumeId>
  <availabilityZone>us-east-1d</availabilityZone>
  <volumeStatus>
    <status>impaired</status>
    <details>
      <item>
        <name>io-enabled</name>
        <status>failed</status>
      </item>
    </details>
  </volumeStatus>
<eventsSet>
  <item>
    <eventId>evol-61a54008</eventId>
    <eventType>potential-data-inconsistency</eventType>
    <description>THIS IS AN EXAMPLE</description>
    <notBefore>2011-12-01T14:00:00.000Z</notBefore>
    <notAfter>2011-12-01T15:00:00.000Z</notAfter>
  </item>
</eventsSet>
<actionsSet>
  <item>
    <code>enable-volume-io</code>
    <eventId> evol-61a54008</eventId>
    <eventType>potential-data-inconsistency</eventType>
    <description>THIS IS AN EXAMPLE</description>
  </item>
</actionsSet>
</item>
</volumeStatusSet>
</DescribeVolumesStatusResponse>
```

## Example Request

This example describes all the volumes in the `us-east-1d` Availability Zone with failed `io-enabled` status.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
```

```
&Filter.3.Value.1=failed  
&AUTHPARAMS
```

## Related Actions

- [ModifyVolumeAttribute](#) (p. 364)
- [DescribeVolumeAttribute](#) (p. 299)
- [EnableVolumeIO](#) (p. 338)

# DescribeVpcAttribute

## Description

Describes the specified attribute of the specified VPC. You can specify only one attribute at a time.

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Required: Yes

### *Attribute*

The VPC attribute.

Type: String

Valid values: `enableDnsSupport` | `enableDnsHostnames`

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DescribeVpcAttributeResponse` structure.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **enableDnsSupport**

Indicates whether DNS resolution is enabled for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: `xsd:boolean`

### **enableDnsHostnames**

Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is `true`, instances in the VPC get DNS hostnames; otherwise, they do not.

Type: `xsd:boolean`

## Examples

### Example Request

This request describes the `enableDnsSupport` attribute of the VPC with the ID `vpc-1a2b3c4d`.

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

## Example Response

This example response indicates that DNS resolution is supported.

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

## Example Request

This request describes the `enableDnsHostnames` attribute of the VPC with the ID `vpc-1a2b3c4d`.

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

## Example Response

This example response indicates that DNS hostnames are supported.

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsHostnames>
    <value>true</value>
  </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

## Related Actions

- [CreateVpc](#) (p. 116)
- [DeleteVpc](#) (p. 156)
- [ModifyVpcAttribute](#) (p. 366)

# DescribeVpcs

## Description

Describes one or more of your VPCs.

## Request Parameters

### *vpcId.n*

One or more VPC IDs.

Type: String

Default: Describes all your VPCs.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain VPCs. For example, you can use a filter to specify that you're interested in VPCs in the `available` state. You can specify multiple values for a filter. The response includes information for a VPC only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify VPCs that use one of several sets of DHCP options and are in the `available` state. The results include information for a VPC only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **cidr**

The CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC.

Type: String

Constraints: Must contain the slash followed by one or two digits (for example, `/28`)

### **dhcp-options-id**

The ID of a set of DHCP options.

Type: String

### **isDefault**

Indicates whether the VPC is the default VPC.

Type: Boolean

**state**

The state of the VPC.

Type: String

Valid values: pending | available

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**vpcSet**

A list of VPCs. Each VPC is wrapped in an `item` element.

Type: [VpcType](#) (p. 520)

## Examples

### Example Request

This example describes the VPC with the ID `vpc-1a2b3c4d`.



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

## Example Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>available</state>
      <cidrBlock>10.0.0.0/23</cidrBlock>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>>false</isDefault>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcsResponse>
```

## Example Request

This example uses filters to describe any VPC you own that uses the set of DHCP options with the ID dopt-7a8b9c2d or dopt-2b2a3d3c and whose state is available.

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&Filter.1.Name=dhcp-options-id
&Filter.1.Value.1=dopt-7a8b9c2d
&Filter.1.Value.2=dopt-2b2a3d3c
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

## Related Actions

- [CreateVpc](#) (p. 116)
- [DeleteVpc](#) (p. 156)
- [CreateDhcpOptions](#) (p. 61)
- [AssociateDhcpOptions](#) (p. 20)

# DescribeVpnConnections

## Description

Describes one or more of your VPN connections.

### Important

We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your 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*.

### Note

You can get the customer gateway configuration information in a friendly format by using the **ec2-describe-vpn-connections** command instead. For more information, see [ec2-describe-vpn-connections](#).

## Request Parameters

### *VpnConnectionId.n*

One or more VPN connection IDs.

Type: String

Default: Describes your VPN connections

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain VPN connections. For example, you can use a filter to specify that you're interested in the VPN connections in the `pending` or `available` state. You can specify multiple values for a filter. The response includes information for a VPN connection only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify VPN connections that are associated with a specific virtual private gateway, and the gateway is in the `pending` or `available` state. The response includes information for a VPN connection only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

**customer-gateway-configuration**

The configuration information for the customer gateway.

Type: String

**customer-gateway-id**

The ID of a customer gateway associated with the VPN connection.

Type: String

**state**

The state of the VPN connection.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**option.static-routes-only**

Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).

Type: Boolean

**route.destination-cidr-block**

The destination CIDR block. This corresponds to the subnet used in a customer data center.

Type: String

**bgp-asn**

The BGP Autonomous System Number (ASN) associated with a BGP device.

Type: Integer

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**type**

The type of VPN connection. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: `ipsec.1`

**vpn-connection-id**

The ID of the VPN connection.

Type: String

**vpn-gateway-id**

The ID of a virtual private gateway associated with the VPN connection.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**vpnConnectionSet**

A list of VPN connections. Each VPN connection is wrapped in an `item` element.

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

## Examples

### Example Request

This example describes the VPN connection with ID `vpn-44a8938f`. The response includes the customer gateway configuration information. Because it's a long set of information, we haven't displayed it here. You can see an example in the topic for `CreateVpnConnection`.

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-44a8938f
&AUTHPARAMS
```

### Example Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
      <state>available</state>
      <CustomerGatewayConfiguration>
        Customer gateway configuration data in escaped XML format...
        ...
      </CustomerGatewayConfiguration>
      <type>ipsec.1</type>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <tagSet/>
    </item>
  </vpnConnectionSet>
</DescribeVpnConnectionsResponse>
```

### Example Request

This example describes any VPN connection you own that is associated with the customer gateway with ID `cgw-b4dc3961`, and whose state is either pending or available.

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## Related Actions

- [CreateVpnConnection](#) (p. 118)
- [DeleteVpnConnection](#) (p. 158)

# DescribeVpnGateways

## Description

Describes one or more of your virtual private gateways.

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

## Request Parameters

### ***VpnGatewayId.n***

One or more virtual private gateway IDs.

Type: String

Default: Describes your virtual private gateways.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain virtual private gateways. For example, you can use a filter to specify that you're interested in the virtual private gateways in the `pending` or `available` state. You can specify multiple values for a filter. The response includes information for a virtual private gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify virtual private gateways that are in a specific Availability Zone and are in the `pending` or `available` state. The response includes information for a virtual private gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (\*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon\?\` searches for the literal string `*amazon?\`.

The following are the available filters.

### **`attachment.state`**

The current state of the attachment between the gateway and the VPC.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

### **`attachment.vpc-id`**

The ID of an attached VPC.

Type: String

**availability-zone**

The Availability Zone for the virtual private gateway.

Type: String

**state**

The state of the virtual private gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

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

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**type**

The type of virtual private gateway. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: `ipsec.1`

**vpn-gateway-id**

The ID of the virtual private gateway.

Type: String

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**vpnGatewaySet**

A list of virtual private gateways. Each virtual private gateway is wrapped in an `item` element.

Type: [VpnGatewayType](#) (p. 522)

## Examples

### Example Request

This example describes the virtual private gateway with the ID `vgw-8db04f81`.

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

### Example Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGatewaySet>
    <item>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <availabilityZone>us-east-1a</availabilityZone>
      <attachments>
        <item>
          <vpcId>vpc-1a2b3c4d</vpcId>
          <state>attached</state>
        </item>
      </attachments>
      <tagSet/>
    </item>
  </vpnGatewaySet>
</DescribeVpnGatewaysResponse>
```

### Example Request

This example uses filters to describe any virtual private gateway you own that is in the `us-east-1a` Availability Zone, and whose state is either `pending` or `available`.

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1a
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## Related Actions

- [CreateVpnGateway](#) (p. 123)
- [DeleteVpnGateway](#) (p. 162)



# DetachInternetGateway

## Description

Detaches an Internet gateway from a VPC, disabling connectivity between the Internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses.

## Request Parameters

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

The example detaches the Internet gateway with ID `igw-eaad4883` from the VPC with ID `vpc-11ad4878`.

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

### Example Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</DetachInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 70)
- [DeleteInternetGateway](#) (p. 129)
- [DetachInternetGateway](#) (p. 24)
- [DescribeInternetGateways](#) (p. 220)

# DetachNetworkInterface

## Description

Detaches a network interface from an instance.

## Request Parameters

### *AttachmentId*

The ID of the attachment.

Type: String

Default: None

Required: Yes

### *Force*

Set to `true` to force a detachment.

Type: Boolean

Default: None

Required: No

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example detaches an elastic network interface (ENI) `eni-attach-d94b09b0`.

```
https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
```

### Example Response

```
<DetachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [CreateNetworkInterface](#) (p. 80)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ResetNetworkInterfaceAttribute](#) (p. 406)

# DetachVolume

## Description

Detaches an Amazon EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so will result in the volume being stuck in "busy" state while detaching. For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

If an Amazon EBS volume is the root device of an instance, it can't be detached while the instance is in the "running" state. To detach the root volume, stop the instance first.

If the root volume is detached from an instance with an AWS Marketplace product code, then the AWS Marketplace product codes from that volume are no longer associated with the instance.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: No

### *Device*

The device name.

Type: String

Default: None

Required: No

### *Force*

Forces detachment if the previous detachment attempt did not occur cleanly (logging into an instance, unmounting the volume, and detaching normally). This option can lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won't have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.

Type: Boolean

Default: None

Required: No

## Response Elements

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

### `requestId`

The ID of the request.

Type: xsd:string

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

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

**device**  
The device name exposed to the instance.  
Type: xsd:string

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

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

## Examples

### Example Request

This example detaches volume `vol-1a2b3c4d`.

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

### Example Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 113)
- [DeleteVolume](#) (p. 154)
- [DescribeVolumes](#) (p. 301)
- [AttachVolume](#) (p. 28)

# DetachVpnGateway

## Description

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to `detached` before you can delete the VPC or attach a different VPC to the virtual private gateway.

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

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

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

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

## Example Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DetachVpnGatewayResponse>
```

## Related Actions

- [AttachVpnGateway](#) (p. 30)
- [DescribeVpnGateways](#) (p. 319)



# DisableVgwRoutePropagation

## Description

Disables a virtual private gateway (VGW) from propagating routes to the routing tables of a VPC.

## Request Parameters

### *RouteTableId*

The ID of the routing table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example disables the virtual private gateway `vgw-d8e09e8a` from automatically propagating routes to the routing table with ID `rtb-c98a35a0`.

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

### Example Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2013-
07-15/">>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
```

```
<return>true</return>  
</DisableVgwRoutePropagationResponse>
```

## Related Actions

- [DisableVgwRoutePropagation](#) (p. 330)

# DisassociateAddress

## Description

Disassociates an Elastic IP address from the instance or network interface it's associated with.

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

This is an idempotent action. If you enter it more than once, Amazon EC2 does not return an error.

## Request Parameters

### *PublicIp*

[EC2-Classic] The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic

### *AssociationId*

[EC2-VPC] The association ID.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example disassociates the EC2 Elastic IP address `192.0.2.1` from the instance to which it is assigned.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

## Example Request

This example disassociates the Elastic IP address with association ID `eipassoc-aa7486c3` from the instance in a VPC to which it is assigned.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationID=eipassoc-aa7486c3
&AUTHPARAMS
```

## Example Response

```
<DisassociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 168)
- [ReleaseAddress](#) (p. 380)
- [AssociateAddress](#) (p. 17)

# DisassociateRouteTable

## Description

Disassociates a subnet from a route table.

After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses the routes in the VPC's main route table. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *AssociationId*

The association ID representing the current association between the route table and subnet.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example disassociates the route table with association ID `rtbassoc-fdad4894` from the subnet it's associated to.

```
https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-fdad4894
&AUTHPARAMS
```

### Example Response

```
<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateRouteTableResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 99)
- [AssociateRouteTable](#) (p. 22)
- [DeleteRouteTable](#) (p. 142)
- [DescribeRouteTables](#) (p. 261)
- [ReplaceRouteTableAssociation](#) (p. 389)

# EnableVgwRoutePropagation

## Description

Enables a virtual private gateway (VGW) to propagate routes to the routing tables of a VPC.

## Request Parameters

### *RouteTableId*

The ID of the routing table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **return**

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

Type: xsd:boolean

## Examples

### Example Request

This example enables the virtual private gateway `vgw-d8e09e8a` to automatically propagate routes to the routing table with ID `rtb-c98a35a0`.

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

### Example Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
```

```
<return>true</return>  
</EnableVgwRoutePropagation>
```

## Related Actions

- [DisableVgwRoutePropagation](#) (p. 330)



# EnableVolumeIO

## Description

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example enables the I/O operations of the volume `vol-88888888`.

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-88888888
&AUTHPARAMS
```

### Example Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVolumeIOResponse>
```

## Related Actions

- [DescribeVolumeStatus](#) (p. 305)
- [ModifyVolumeAttribute](#) (p. 364)

- [DescribeVolumeAttribute](#) (p. 299)

# GetConsoleOutput

## Description

Gets the console output for the specified instance.

Instances do not have a physical monitor through which you can view their console output. They also lack physical controls that allow you to power up, reboot, or shut them down. To allow these actions, we provide them through the Amazon EC2 API and command line interface.

Instance console output is buffered and posted shortly after instance boot, reboot, and termination. Amazon EC2 preserves the most recent 64 KB output which will be available for at least one hour after the most recent post.

For Linux/UNIX instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a machine. This output is buffered because the instance produces it and then posts it to a store where the instance's owner can retrieve it.

For Windows instances, the instance console output displays the last three system event log errors.

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceId`

The ID of the instance.

Type: `xsd:string`

### `timestamp`

The time the output was last updated.

Type: `xsd:dateTime`

### `output`

The console output, Base64 encoded.

Type: `xsd:string`

## Examples

### Example Request

This example retrieves the console output for the `i-10a64379` Linux and UNIX instance.

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

## Example Response

```
<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChSZWQgSGF0IDQuMC4xLTUpKSAjMSBTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDIwMDYKQklPUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFWOgpY
ZW46IDAuMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhdAwMDAwIChlc2FibGUpcjk4ME1CIEhJ
R0hNRU0gYXZhaWxhYmxlLgo3MjdNQiBMT1dNRU0gYXZhaWxhYmxlLgpOWCAoRXhlY3V0ZSBEaXNh
YmxlKSBwcm90ZWNoaW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRLY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbG1zdHMKS2VybVVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCBzZXN0b3JlLi4uIGRvbmUuCG==</output>
</GetConsoleOutputResponse>
```

## Related Actions

- [RunInstances](#) (p. 416)

# GetPasswordData

## Description

Retrieves the encrypted administrator password for an instance running Windows.

The Windows password is only generated the first time an AMI is launched. It is not generated for rebundled AMIs or after the password is changed on an instance.

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. Please wait up to 15 minutes after launching an instance before trying to retrieve the generated password.

## Request Parameters

### *InstanceId*

The ID of a Windows instance.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceId`

The ID of the instance.

Type: `xsd:string`

### `timestamp`

The time the data was last updated.

Type: `xsd:dateTime`

### `passwordData`

The password of the instance.

Type: `xsd:string`

## Examples

### Example Request

This example returns the encrypted version of the administrator password for the `i-2574e22a` instance.

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

## Example Response

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-2574e22a</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
```

## Related Actions

- [RunInstances](#) (p. 416)

# ImportInstance

## Description

Creates an import instance task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-upload-disk-image` 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*.

## Request Parameters

### *Description*

A description for the instance being imported.

Type: String

Default: None

Required: No

### *LaunchSpecification.Architecture*

The architecture of the instance.

Type: String

Valid values: `i386` | `x86_64`

Default: None

Required: Yes

### *LaunchSpecification.GroupName.n*

One or more security group names.

Type: String

Default: None

Required: No

### *LaunchSpecification UserData*

User data to be made available to the instance.

Type: String

Default: None

Required: No

### *LaunchSpecification.InstanceType*

The instance type. See [Available Instance Types](#) for more information.

Type: String

Default: None

Required: Yes

### *LaunchSpecification.Placement.AvailabilityZone*

The Availability Zone to launch the instance into.

Type: String

Default: We choose a zone for you

Required: No

### *LaunchSpecification.Monitoring.Enabled*

Specifies whether to enable detailed monitoring for the instance.

Type: Boolean

Default: `false`

Required: No

***LaunchSpecification.SubnetId***

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Default: None

Required: No

***LaunchSpecification.InstanceInitiatedShutdownBehavior***

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid values: `stop` | `terminate`

Default: `stop`

Required: No

***LaunchSpecification.PrivateIpAddress***

[EC2-VPC] You can optionally use this parameter to assign the instance a specific available IP address from the IP address range of the subnet.

Type: String

Default: We selects an IP address from the IP address range of subnet for the instance

Required: No

***DiskImage.n.Image.Format***

The file format of the disk image.

Type: String

Valid values: `VMDK` | `RAW` | `VHD`

Default: None

Required: Yes

***DiskImage.n.Image.Bytes***

The number of bytes in the disk image.

Type: Long

Default: None

Required: Yes

***DiskImage.n.Image.ImportManifestUrl***

The manifest for the disk image, stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Signing and Authenticating REST Requests" section of the [Signing and Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Default: None

Required: Yes

***DiskImage.n.Image.Description***

An optional description for the disk image.

Type: String

Default: None

Required: No

***DiskImage.n.Volume.Size***

The size, in GB (2<sup>30</sup> bytes), of the Amazon EBS volume that will hold the converted image.

Required: Yes

***Platform***

The instance operating system.

Type: String

Default: None



Valid value: Windows

Required: No

## Response Elements

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

### **conversionTask**

Information about the import instance task.

Type: [ConversionTaskType](#) (p. 444)

## Examples

### Example Request

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

```
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signa
ture=5snej01T1TtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

### Example Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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?AWSAccess
KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01T1TtL0uR7KEx
tEXAMPLE%3D
            </importManifestUrl>
          </image>
        </item>
      </volumes>
    </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

```
        <description/>
        <volume>
          <size>12</size>
          <id>vol-1a2b3c4d</id>
        </volume>
        <status>active</status>
        <statusMessage/>
      </item>
    </volumes>
    <instanceId>i-12655a7f</instanceId>
    <description/>
  </importInstance>
</conversionTask>
</ImportInstanceResponse>
```

## Related Actions

- [ImportVolume](#) (p. 350)
- [DescribeConversionTasks](#) (p. 178)
- [CancelConversionTask](#) (p. 44)

# ImportKeyPair

## Description

Imports the public key from an RSA key pair that you created with a third-party tool. Compare this with `CreateKeyPair`, in which AWS creates the key pair and gives the keys to you (AWS keeps a copy of the public key). With `ImportKeyPair`, you create the key pair and give AWS just the public key. The private key is never transferred between you and AWS.

You can easily create an RSA key pair on Windows and Linux using the `ssh-keygen` command line tool (provided with the standard OpenSSH installation). Standard library support for RSA key pair creation is also available in Java, Ruby, Python, and many other programming languages.

Supported formats:

- OpenSSH public key format (e.g., the format in `~/.ssh/authorized_keys`)
- Base64 encoded DER format
- SSH public key file format as specified in [RFC4716](#)

DSA keys are not supported. Make sure your key generator is set up to create RSA keys.

Supported lengths: 1024, 2048, and 4096.

Note that you can have up to five thousand key pairs per region.

## Request Parameters

### ***KeyName***

A unique name for the key pair.

Type: String

Default: None

Required: Yes

### ***PublicKeyMaterial***

The public key. You must base64 encode the public key material before sending it to AWS.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **`requestId`**

The ID of the request.

Type: `xsd:string`

### **`keyName`**

The key pair name you provided.

Type: `xsd:string`

### **`keyFingerprint`**

The MD5 public key fingerprint as specified in section 4 of [RFC4716](#).

Type: xsd:string

## Examples

### Example Request

This example imports the public key named my-key-pair.

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAFICCCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAKGA1UEBh
MC
VVMxCzAJBgNVBAGTAldBMRAdG9YDVQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAstC0lBTSBDb25zb2x1MRIwEAYDVQQDEw1UZXR0Q21sYWMxH2Ad
BgkqhkiG9w0BCQEWEG5vb25lQGFTYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI1MjA0NTIxWjCBiDELMAKGA1UEBhMCMVVMxCzAJBgNVBAGTAldBMRAdG9YD
VQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAstC0lBTSBDb25z
b2x1MRIwEAYDVQQDEw1UZXR0Q21sYWMxH2AdBgkqhkiG9w0BCQEWEG5vb25lQGFT
YXpvbi5jb20wGZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLyGVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZncvcQAaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJiLJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvJx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
&AUTHPARAMS
```

### Example Response

The response includes the MD5 public key fingerprint as specified in section 4 of [RFC4716](#).

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <keyName>my-key-pair</keyName>
  <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</key
Fingerprint>
</ImportKeyPairResponse>
```

## Related Actions

- [CreateKeyPair](#) (p. 72)
- [DescribeKeyPairs](#) (p. 223)
- [DeleteKeyPair](#) (p. 131)

# ImportVolume

## Description

Creates an import volume task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-upload-disk-image` 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*.

## Request Parameters

### *AvailabilityZone*

The Availability Zone for the resulting Amazon EBS volume.

Type: String

Default: None

Required: Yes

### *Image.Format*

The file format of the disk image.

Type: String

Valid values: `VMDK` | `RAW` | `VHD`

Default: None

Required: Yes

### *Image.Bytes*

The number of bytes in the disk image.

Type: Long

Default: None

Required: Yes

### *Image.ImportManifestUrl*

The manifest for the disk image, stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Signing and Authenticating REST Requests" section of the [Signing and Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Default: None

Required: Yes

### *Description*

An optional description for the volume being imported.

Type: String

Default: None

Required: No

### *Volume.Size*

The size, in GB (2<sup>30</sup> bytes), of an Amazon EBS volume to hold the converted image.

Type: Integer

Default: None

Required: Yes

## Response Elements

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

### **conversionTask**

Information about the import volume task.

Type: [ConversionTaskType](#) (p. 444)

## Examples

### Example Request

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the AWS us-east-1 region.

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-
43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmani
fest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS>
```

### Example Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>0</bytesConverted>
      <availabilityZone>us-east-1c</availabilityZone>
      <description/>
      <image>
        <format>VMDK</format>
        <size>128696320</size>
        <importManifestUrl>
          https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
          15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
          KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx
          tEXAMPLE%3D
        </importManifestUrl>
        <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
      </image>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
```

```
<statusMessage/>
</conversionTask>
</ImportVolumeResponse>
```

## Related Actions

- [ImportInstance](#) (p. 344)
- [DescribeConversionTasks](#) (p. 178)
- [CancelConversionTask](#) (p. 44)

# ModifyImageAttribute

## Description

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

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *LaunchPermission.Add.n.UserId*

Adds the specified AWS account ID to the AMI's list of launch permissions.

Type: String

Default: None

Required: No

### *LaunchPermission.Remove.n.UserId*

Removes the specified AWS account ID from the AMI's list of launch permissions.

Type: String

Default: None

Required: No

### *LaunchPermission.Add.n.Group*

Adds the specified group to the image's list of launch permissions. The only valid value is `all`.

Type: String

Valid value: `all` (for all EC2 users)

Default: None

Required: No

### *LaunchPermission.Remove.n.Group*

Removes the specified group from the image's list of launch permissions. The only valid value is `all`.

Type: String

Valid value: `all` (for all EC2 users)

Default: None

Required: No

### *ProductCode.n*

Adds the specified product code to the specified instance store-backed AMI. After you add a product code to an AMI, it can't be removed.

Type: String

Default: None

Required: No

### *Description.Value*

Changes the AMI's description to the specified value.

Type: String



Default: None

Required: No

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example makes the AMI public (for example, so any AWS account can use it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Request

This example makes the AMI private (for example, so that only you as the owner can use it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

### Example Request

This example grants launch permission to the AWS account with ID 111122223333.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=111122223333
&AUTHPARAMS
```

### Example Request

This example removes launch permission from the AWS account with ID 111122223333.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
```

```
&LaunchPermission.Remove.1.UserId=111122223333  
&AUTHPARAMS
```

## Example Request

This example adds the 774F4FF8 product code to the ami-61a54008 AMI.

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute  
&ImageId=ami-61a54008  
&ProductCode.1=774F4FF8  
&AUTHPARAMS
```

## Example Request

This example changes the description of the AMI to New Description

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute  
&ImageId=ami-61a54008  
&Description.Value=New Description  
&AUTHPARAMS
```

## Example Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  
  <return>true</return>  
</ModifyImageAttributeResponse>
```

## Related Actions

- [ResetImageAttribute](#) (p. 402)
- [DescribeImageAttribute](#) (p. 189)

# ModifyInstanceAttribute

## Description

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

### Note

To modify some attributes, the instance must be stopped. For more information, see [Modifying Attributes of a Stopped Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *InstanceType.Value*

Changes the instance type to the specified value. See [Available Instance Types](#) for more information. An `InvalidInstanceAttributeValue` error will be returned if the instance type is not valid.

Type: String

Default: None

Required: No

### *Kernel.Value*

Changes the instance's kernel to the specified value.

Type: String

Default: None

Required: No

### *Ramdisk.Value*

Changes the instance's RAM disk to the specified value.

Type: String

Default: None

Required: No

### *UserData.Value*

Changes the instance's user data to the specified value.

Type: String

Default: None

Required: No

### *DisableApiTermination.Value*

If the value is `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise you can.

Type: Boolean

Default: None

Required: No

### *InstanceInitiatedShutdownBehavior.Value*

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid values: `stop` | `terminate`

Default: None

Required: No

***BlockDeviceMapping.Value***

Modifies the `DeleteOnTermination` attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for `DeleteOnTermination`, the default is `true` and the volume is deleted when the instance is terminated.

**Note**

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see [Updating the Block Device Mapping when Launching an Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [InstanceBlockDeviceMappingItemType](#) (p. 467)

Default: None

Example: `&BlockDeviceMapping.1.Ebs.DeleteOnTermination=true`

Required: No

***SourceDestCheck.Value***

Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: Boolean

Default: None

Required: No

***GroupId.n***

[EC2-VPC] Changes the instance's security group. You must specify at least one security group, even if it's just the default security group for the VPC. You must specify the security group ID, not the security group name.

For example, if you want the instance to be in `sg-1a1a1a1a` and `sg-9b9b9b9b`, specify `GroupId.1=sg-1a1a1a1a` and `GroupId.2=sg-9b9b9b9b`.

Type: String

Default: None

Required: No

***EbsOptimized***

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example changes the instance type of the specified instance. The instance must be in the `stopped` state.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceType.Value=m1.small
&AUTHPARAMS
```

### Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</ModifyInstanceAttributeResponse>
```

### Example Request

This example changes the `InstanceInitiatedShutdownBehavior` attribute of the specified instance.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceInitiatedShutdownBehavior.Value=terminate
&AUTHPARAMS
```

### Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</ModifyInstanceAttributeResponse>
```

### Example Request

This example changes the `DisableApiTermination` attribute of the specified instance.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&DisableApiTermination.Value=true
&AUTHPARAMS
```

## Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

## Related Actions

- [ResetInstanceAttribute](#) (p. 404)
- [DescribeInstanceAttribute](#) (p. 199)

# ModifyNetworkInterfaceAttribute

## Description

Modifies the specified network interface attribute. You can specify only one attribute at a time.

## Request Parameters

### ***NetworkInterfaceId***

The ID of the network interface.

Type: String

Default: None

Required: Yes

### ***Description.Value***

A description for the network interface.

Type: String

Default: None

Required: No

### ***SecurityGroupId.n***

Changes the security groups that a network interface is in. 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 group ID and not the group name.

For example, if you want the instance to be in sg-1a1a1a1a and sg-9b9b9b9b, specify GroupId.1=sg-1a1a1a1a and GroupId.2=sg-9b9b9b9b.

Type: String

Default: None

Required: No

### ***SourceDestCheck.Value***

Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: Boolean

Default: None

Required: No

### ***Attachment.AttachmentId***

The ID of the interface attachment.

Type: String

Default: None

Required: Conditional

Condition: This parameter is required if you are modifying the `DeleteOnTermination` attribute of an interface attachment.

### ***Attachment.DeleteOnTermination***

Specifies whether to delete the attachment when terminating the instance.

Type: Boolean

Default: None

Required: Conditional

Condition: You must specify a specific attachment ID to change this attribute.

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example request sets source/destination checking to `false` for the network interface `eni-ffda3197`.

```
https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS
```

### Example Response

```
<ModifyNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 80)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ResetNetworkInterfaceAttribute](#) (p. 406)



# ModifySnapshotAttribute

## Description

Adds or remove permission settings for the specified snapshot.

### Note

Snapshots with AWS Marketplace product codes cannot be made public.

## Request Parameters

### *SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Add.n.UserId*

Adds the specified AWS account ID to the volume's list of create volume permissions.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Add.n.Group*

Adds the specified group to the volume's list of create volume permissions. The only valid value is `all`.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Remove.n.UserId*

Removes the specified AWS account ID from the volume's list of create volume permissions.

Type: String

Default: None

Required: No

### *CreateVolumePermission.Remove.n.Group*

Removes the specified group from the volume's list of create volume permissions.

Type: String

Default: None

Required: No

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example makes the `snap-1a2b3c4d` snapshot public, and gives the account with ID `111122223333` permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

This example makes the `snap-1a2b3c4d` snapshot public, and removes the account with ID `111122223333` from the list of users with permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

## Related Actions

- [DescribeSnapshotAttribute](#) (p. 269)
- [DescribeSnapshots](#) (p. 271)
- [ResetSnapshotAttribute](#) (p. 408)
- [CreateSnapshot](#) (p. 104)

# ModifyVolumeAttribute

## Description

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first calling [EnableVolumeIO \(p. 338\)](#) action to enable I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations without calling [EnableVolumeIO \(p. 338\)](#) action by setting the `AutoEnableIO` attribute of the volume to `true`. We recommend that you change this attribute only for volumes that are stateless, or disposable, or for boot volumes.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Required: Yes

### *AutoEnableIO.Value*

Specifies whether the volume should be auto-enabled for I/O operations.

Type: Boolean

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example modifies the attribute of the volume `vol-12345678`

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-12345678
&AutoEnableIO.Value=true
&AUTHPARAMS
```

## Example Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <return>true</return>  
</ModifyVolumeAttributeResponse>
```

## Related Actions

- [DescribeVolumeAttribute](#) (p. 299)
- [DescribeVolumeStatus](#) (p. 305)

# ModifyVpcAttribute

## Description

Modifies the specified attribute of the specified VPC.

## Request Parameters

### *vpcId*

The ID of the VPC.

Type: String

Required: Yes

### **enableDnsSupport**

Specifies whether DNS resolution is supported for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: Boolean

Required: No

### **enableDnsHostnames**

Specifies 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.

You can only set `enableDnsHostnames` to `true` if you also set the `EnableDnsSupport` attribute to `true`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned in a `ModifyVpcAttributeResponse` structure.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This request disables support for DNS hostnames in the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute
&VpcId=vpc-1a2b3c4d
&EnableDnsHostnames.Value=false
&AUTHPARAMS
```

# MonitorInstances

## Description

Enables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instances. Each instance is wrapped in an `item` element.

Type: [MonitorInstancesResponseSetItemType](#) (p. 486)

## Examples

### Example Request

This example enables monitoring for i-43a4412a and i-23a3397d.

```
https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

### Example Response

```
<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
        <state>pending</state>
      </monitoring>
    </item>
```

```
<item>
  <instanceId>i-23a3397d</instanceId>
  <monitoring>
    <state>pending</state>
  </monitoring>
</item>
</instancesSet>
</MonitorInstancesResponse>
```

## Related Actions

- [UnmonitorInstances](#) (p. 432)
- [RunInstances](#) (p. 416)

# PurchaseReservedInstancesOffering

## Description

Purchases a Reserved Instance for use with your account. With Amazon EC2 Reserved Instances, you obtain a capacity reservation for a certain instance configuration over a specified period of time. You pay a lower usage rate than with On-Demand instances for the time that you actually use the capacity reservation.

Starting with the 2011-11-01 API version, AWS expanded its offering of Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*.

The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` will only list information about the `Medium Utilization` Reserved Instance offering type.

For information about Reserved Instance pricing tiers, go to [Understanding Reserved Instance pricing tiers](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Reserved Instances, go to [Reserved Instances](#) also in the *Amazon Elastic Compute Cloud User Guide*.

You determine the type of the Reserved Instances offerings by including the optional `offeringType` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `ReservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

Starting with the 2012-08-15 API version, you can also purchase Reserved Instances from the Reserved Instance Marketplace. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about Amazon EC2 Reserved Instances available directly from AWS, plus instance offerings available on the Reserved Instance Marketplace. If you are using tools that predate the 2012-08-15 API version, the `DescribeReservedInstancesOfferings` action will only list information about Amazon EC2 Reserved Instances available directly from AWS.

For more information about the Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

You determine the Reserved Instance Marketplace offerings by specifying `true` for the optional `includeMarketplace` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `reservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

## Request Parameters

### `reservedInstancesOfferingId`

The ID of the Reserved Instance offering you want to purchase.

Type: String

Default: None

Required: Yes



***instanceCount***

The number of Reserved Instances to purchase.

Type: Integer

Default: None

Required: Yes

***limitPrice***

Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: [ReservedInstanceLimitPriceType](#) (p. 501)

Required: No

## Response Elements

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

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`reservedInstancesId`**

The IDs of the purchased Reserved Instances.

Type: `xsd:string`

## Examples

### Set the limit price for Reserved Instance Marketplace purchase

This example uses `LimitPrice` to limit the total purchase order of Reserved Instances from Reserved Instance Marketplace.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

The response looks like the following example.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

### Example Request

This example illustrates a purchase of a Reserved Instances offering.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS
```

The response looks like the following example.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

## Find and Purchase a Reserved Instance

### To find and purchase a Reserved Instance

1. Use [DescribeReservedInstancesOfferings \(p. 252\)](#) to get a list of Reserved Instance offerings that match your specifications. In this example, we'll requests a list of Linux/UNIX, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2013-07-15
&AUTHPARAMS
```

#### Note

When using the Query API, all strings must be URL-encoded.

The following is an example response.

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2013-07-15/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-
0841cEXAMPLE</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>90720000</duration>
      <fixedPrice>96.03</fixedPrice>
      <usagePrice>0.027</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>true</marketplace>
```

```
<pricingDetailsSet>
  <item>
    <price>96.03</price>
    <count>1</count>
  </item>
</pricingDetailsSet>
</item>
<item>
  <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</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>
```

2. From the list of available Reserved Instances in the previous example, select the marketplace offering and specify a limit price.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE
&InstanceCount=1
&LimitPrice.Amount=200
&AUTHPARAMS
```

The following is an example response.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedIn
stancesId>
</PurchaseReservedInstancesOfferingResponse>
```

3. To verify the purchase, check for your new Reserved Instance with [DescribeReservedInstances](#) (p. 244).

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

The following is an example response:

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-
07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    ...
    <item>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <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>
```

You can run your Reserved Instance any time after your purchase is complete. To run your Reserved Instance, you launch it in the same way you launch an On-Demand EC2 instance. Make sure to specify the same criteria that you specified for your Reserved Instance. AWS will automatically charge you the lower hourly rate.

## Related Actions

- [DescribeReservedInstancesOfferings](#) (p. 252)
- [DescribeReservedInstances](#) (p. 244)

# RebootInstances

## Description

Requests a reboot of one or more instances. This operation is asynchronous; it only queues a request to reboot the specified instance(s). The operation will succeed if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.

### Note

If a Linux/UNIX instance does not cleanly shut down within four minutes, Amazon EC2 will perform a hard reboot.

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example reboots two instances.

```
https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1a2b3c4d
&InstanceId.2=i-4d3acf62
&AUTHPARAMS
```

### Example Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RebootInstancesResponse>
```

## Related Actions

- [RunInstances](#) (p. 416)

# RegisterImage

## Description

Registers an AMI. When you're creating an AMI, this is the final step you must complete before you can launch an instance from the AMI. For more information about creating AMIs, see [Creating Your Own AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

For Amazon EBS-backed instances, the `CreateImage` operation creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use the `RegisterImage` action to create an EBS-backed AMI from a snapshot of a root device volume. For more information, see [Launching an Instance from a Snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by instance store invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

### Note

You cannot register an image where a secondary (non-root) snapshot has AWS Marketplace product codes.

## Request Parameters

### *ImageLocation*

The full path to your AMI manifest in Amazon S3 storage.

Type: String

Default: None

Required: Conditional

Condition: Required if registering an instance store-backed AMI

### *Name*

A name for your AMI.

Type: String

Default: None

Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(\_)

Required: Yes

### *Description*

A description for your AMI.

Type: String

Default: None

Constraints: Up to 255 characters.

Required: No

### *Architecture*

The architecture of the image.

Type: String

Valid values: `i386` | `x86_64`

Default: `i386` for Amazon EBS-backed AMIs. Instance store-backed AMIs try to use the architecture specified in the manifest file.

Required: No

***KernelId***

The ID of the kernel.

Type: String

Default: None

Required: No

***RamdiskId***

The ID of the RAM disk.

Type: String

Default: None

Required: No

***VirtualizationType***

The type of virtualization.

Type: String

Valid values: `paravirtual` | `hvm`

Default: `paravirtual`

Required: No

***RootDeviceName***

The name of the root device (for example, `/dev/sda1`, or `xvda`).

Type: String

Default: None

Required: Conditional

Condition: Required if registering an Amazon EBS-backed AMI

***BlockDeviceMapping.n.DeviceName***

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify

*DeviceName* with the root device name (for example, `/dev/sda1` or `xvda`), and

*BlockDeviceMapping.n.Ebs.SnapshotId* with the snapshot ID

***BlockDeviceMapping.n.NoDevice***

Suppresses a device mapping.

Type: Boolean

Default: `true`

Required: No

***BlockDeviceMapping.n.VirtualName***

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

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: Conditional



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

***BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

Valid values: If the volume type is *io1*, the minimum size of the volume is 10 GiB.

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

Required: Conditional

Condition: Required unless you're creating the volume from a snapshot.

***BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Default: *true*

Required: No

***BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: *standard* | *io1*

Default: *standard*

Required: No

***BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Conditional

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

## Response Elements

The following elements are returned in a *RegisterImageResponse* element.

***requestId***

The ID of the request.

Type: *xsd:string*

***imageId***

The ID of the newly registered AMI.

Type: *xsd:string*

## Examples

### Example Request

This example registers the AMI specified in the *my-new-image.manifest.xml* manifest file, located in the bucket called *myawsbucket*.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

## Example Request

This example registers an Amazon EBS snapshot to create an AMI backed by Amazon EBS.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&Name=MyImage
&AUTHPARAMS
```

## Example Request

This example registers the AMI with an Amazon EBS snapshot as the root device, a separate snapshot as a secondary device, and an empty 100 GiB Amazon EBS volume as a storage device.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-2a2b3c4d
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

## Example Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## Related Actions

- [DescribeImages](#) (p. 192)
- [DeregisterImage](#) (p. 164)

# ReleaseAddress

## Description

Releases the specified Elastic IP address.

### Important

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to you. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an `AuthFailure` error if the address is already allocated to another AWS account.

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

[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 the `ec2-disassociate-address` command.

[Nondefault VPC] You must use the `ec2-disassociate-address` command to disassociate the Elastic IP address before you try to release it. Otherwise, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).

## Request Parameters

### *PublicIp*

[EC2-Classic] The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic

### *AllocationId*

[EC2-VPC] The allocation ID.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example releases an Elastic IP address (192.0.2.1).

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

### Example Request

This example releases an Elastic IP address with the allocation ID eipalloc-5723d13e.

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

### Example Response

```
<ReleaseAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReleaseAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 168)
- [AssociateAddress](#) (p. 17)
- [DisassociateAddress](#) (p. 332)

# ReplaceNetworkAclAssociation

## Description

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *AssociationId*

The ID representing the current association between the original network ACL and the subnet.

Type: String

Default: None

Required: Yes

### *NetworkAclId*

The ID of the new ACL to associate with the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `newAssociationId`

The ID of the new association.

Type: `xsd:string`

## Examples

### Example Request

This example starts with a network ACL associated with a subnet, and a corresponding association ID `aassoc-e5b95c8c`. You want to associate a different network ACL (`acl-5fb85d36`) with the subnet. The result is a new association ID representing the new association.

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```

## Example Response

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

## Related Actions

- [CreateNetworkAcl](#) (p. 75)
- [DeleteNetworkAcl](#) (p. 132)
- [DescribeNetworkAcls](#) (p. 225)

# ReplaceNetworkAclEntry

## Description

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

### ***NetworkAclId***

The ID of the ACL.

Type: String

Default: None

Required: Yes

### ***RuleNumber***

The rule number of the entry to replace.

Type: Integer

Default: None

Required: Yes

### ***Protocol***

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

Type: Integer

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

Required: Yes

### ***RuleAction***

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

Type: String

Default: None

Valid values: allow | deny

Required: Yes

### ***Egress***

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

Type: Boolean

Default: `false`

Valid values: `true` | `false`

Required: No

### ***CidrBlock***

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

Type: String

Default: None

Required: Yes

### ***Icmp.Code***

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

Type: Integer

Default: None

Required: Conditional

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

***icmp.Type***

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

Type: Integer

Default: None

Required: Conditional

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

***PortRange.From***

The first port in the range.

Type: Integer

Default: None

Required: Conditional

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

***PortRange.To***

The last port in the range.

Type: Integer

Default: None

Required: Conditional

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

## Response Elements

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

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`return`**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example replaces the egress entry numbered 110 in the network ACL with ID `acl-2cb85d45`. The new rule denies egress traffic destined for anywhere (`0.0.0.0/0`) on TCP port 139.

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol=tcp
&RuleAction=deny
&Egress=true
&CidrBlock=0.0.0.0/0
&PortRange.From=139
&PortRange.To=139
&AUTHPARAMS
```



## Example Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

## Related Actions

- [CreateNetworkAclEntry](#) (p. 77)
- [DeleteNetworkAclEntry](#) (p. 134)
- [DescribeNetworkAcls](#) (p. 225)

# ReplaceRoute

## Description

Replaces an existing route within a route table in a VPC. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### ***RouteTableId***

The ID of the route table.

Type: String

Default: None

Required: Yes

### ***DestinationCidrBlock***

The CIDR address block used for the destination match. The value you provide must match the CIDR of an existing route in the table.

Type: String

Default: None

Required: Yes

### ***GatewayId***

The ID of a gateway attached to your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### ***InstanceId***

The ID of a NAT instance in your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### ***NetworkInterfaceId***

Allows routing to network interface attachments.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

## Response Elements

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

### **`requestId`**

The ID of the request.

Type: xsd:string

**return**

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

Type: xsd:boolean

## Examples

### Example Request

This example replaces a route in the route table with the ID `rtb-e4ad488d`. The new route matches the CIDR `10.0.0.0/8` and sends the traffic to the virtual private gateway with the ID `vgw-1d00376e`.

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

### Example Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
```

## Related Actions

- [DeleteRoute](#) (p. 140)
- [CreateRoute](#) (p. 96)
- [DescribeRouteTables](#) (p. 261)

# ReplaceRouteTableAssociation

## Description

Changes the route table associated with a given subnet in a VPC. After you execute this action, 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 this action to change which table is the main route table in the VPC. You just specify the main route table's association ID and the route table that you want to be the new main route table.

## Request Parameters

### *AssociationId*

The association ID.

Type: String

Default: None

Required: Yes

### *RouteTableId*

The ID of the new route table to associate with the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: xsd:string

### **newAssociationId**

The ID of the new association.

Type: xsd:string

## Examples

### Example Request

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.

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-f8ad4891
&RouteTableId=rtb-f9ad4890
&AUTHPARAMS
```

## Example Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 99)
- [DisassociateRouteTable](#) (p. 334)
- [DeleteRouteTable](#) (p. 142)
- [DescribeRouteTables](#) (p. 261)
- [AssociateRouteTable](#) (p. 22)

# ReportInstanceStatus

## Description

Use this action to submit feedback about an instance's status. This action works only for instances that are in the `running` state. If your experience with the instance differs from the instance status returned by the `DescribeInstanceStatus` action, use `ReportInstanceStatus` to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

### Note

Use of this action does not change the value returned by `DescribeInstanceStatus`.

To report an instance's status, specify an instance ID with the `InstanceId.n` parameter and a reason code with the `ReasonCode.n` parameter that applies to that instance. The following table contains descriptions of all available reason codes.

### **instance-stuck-in-state**

My instance is stuck in a state.

### **unresponsive**

My instance is unresponsive.

### **not-accepting-credentials**

My instance is not accepting my credentials.

### **password-not-available**

A password is not available for my instance.

### **performance-network**

My instance is experiencing performance problems which I believe are network related.

### **performance-instance-store**

My instance is experiencing performance problems which I believe are related to the instance stores.

### **performance-ebs-volume**

My instance is experiencing performance problems which I believe are related to an EBS volume.

### **performance-other**

My instance is experiencing performance problems.

### **other**

Other, explained in the submitted description parameter.

## Request Parameters

### ***InstanceId.n***

One or more instance IDs.

Type: String

Required: Yes

### ***Status***

The status of all instances listed in the `InstanceId.n` parameter.

Type: String

Valid values: `ok` | `impaired`

Required: Yes

### ***StartTime***

The time at which the reported instance health state began.

Type: DateTime

Required: No

***EndTime***

The time at which the reported instance health state ended.

Type: DateTime

Required: No

***ReasonCode.n***

A reason code that describes a specific instance's health state. Each code you supply corresponds to an instance ID that you supply with the *InstanceId.n* parameter. See the [Description \(p. 391\)](#) section for descriptions of each reason code.

Type: String

Valid values: instance-stuck-in-state | unresponsive | not-accepting-credentials | password-not-available | performance-network | performance-instance-store | performance-ebs-volume | performance-other | other

Required: Yes

***Description***

Descriptive text about the instance health state.

Type: String

Default: None

Required: No

## Response Elements

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

**`requestId`**

The ID of the request.

Type: xsd:string

**`return`**

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

Type: xsd:boolean

## Examples

### Example Request

This example reports instance health state for two instances.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.0=i-9440effb
&InstanceId.1=i-0cf27c63
&Version=2013-07-15
&AuthParams
```

### Example Request

This example reports instance health state for two instances with reason codes.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
```

```
&Status=impaired
&InstanceId.0=i-9440effb
&InstanceId.1=i-0cf27c63
&ReasonCode.0=instance-performance-network
&ReasonCode.1=instance-performance-disk
&Version=2013-07-15
&AuthParams
```

## Example Response

```
<ReportInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>b8131cff-dfbd-4277-bafe-be006fd0c4da</requestId>
  <return>>true</return>
</ReportInstanceStatusResponse>
```



# RequestSpotInstances

## Description

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

### Note

Users must be subscribed to the required product to run an instance with AWS Marketplace product codes.

## Request Parameters

### *SpotPrice*

The maximum hourly price for any Spot Instance launched to fulfill the request.

Type: String

Default: None

Required: Yes

### *InstanceCount*

The maximum number of Spot Instances to launch.

Type: Integer

Default: 1

Required: No

### *Type*

The Spot Instance request type.

Type: String

Valid values: one-time | persistent

Default: one-time

Required: No

### *ValidFrom*

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: DateTime

Default: Request is effective independently

Required: No

### *ValidUntil*

The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached.

Type: DateTime

Default: Request is effective indefinitely

Required: No

### *LaunchGroup*

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

Default: Instances are launched and terminated individually

Required: No

***AvailabilityZoneGroup***

The user-specified name for a logical grouping of bids.

When you specify *AvailabilityZoneGroup* in a Spot Instance request, all Spot Instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but choice of Availability Zone is not. *AvailabilityZoneGroup* applies only to bids for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same *AvailabilityZoneGroup* name will be launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot Instance request (i.e., all instances are terminated, the bid is expired, or the bid falls below current market), then Amazon EC2 will launch the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot Instances could be placed in a different zone from the original request, even if the same *AvailabilityZoneGroup* name was specified.

To ensure that all Spot Instances across all bids are launched into a particular Availability Zone, specify *LaunchSpecification.Placement.AvailabilityZone* in the API or *availability-zone* in the CLI.

Type: String

Default: Instances are launched in any available Availability Zone.

Required: No

***LaunchSpecification.ImageId***

The ID of the AMI.

Type: String

Default: None

Required: Yes

***LaunchSpecification.KeyName***

The name of the key pair.

Type: String

Default: None

Required: No

***LaunchSpecification.SecurityGroupId.n***

The ID of the security group.

Type: String

Default: The instance uses the default security group

Required: Conditional

Condition: If you want to specify one or more security groups, you can use either

*LaunchSpecification.SecurityGroupId.n* or *LaunchSpecification.SecurityGroup.n*.

***LaunchSpecification.SecurityGroup.n***

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

Type: String

Default: The instance uses the default security group

Required: Conditional

Condition: If you want to specify one or more security groups, you can use either

*LaunchSpecification.SecurityGroupId.n* or *LaunchSpecification.SecurityGroup.n*.

***LaunchSpecification UserData***

The MIME, Base64-encoded user data to make available to the instances.

Type: String

Default: None

Required: No

***LaunchSpecification.InstanceType***

The instance type.

Type: String

Valid values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.xlarge | m3.2xlarge | c1.medium | c1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge. See [Available Instance Types](#) for more information.

Default: m1.small

Required: Yes

***LaunchSpecification.Placement.AvailabilityZone***

The placement constraint (for example, specific Availability Zone) for launching the instances.

Specify if you want all of the Spot Instances in all of your bids to be launched in a particular Availability Zone. Specifying this option requires Amazon EC2 to find capacity in the specified Availability Zone instead of letting Amazon EC2 pick the best Availability Zone available; this can potentially delay the fulfillment of your bid, and/or require a higher bid price.

Type: String

Default: Amazon EC2 selects an Availability Zone.

Required: No

***LaunchSpecification.Placement.GroupName***

The name of an existing placement group you want to launch the instance into (for cluster instances).

Type: String

Default: None.

Required: No

***LaunchSpecification.KernelId***

The ID of the kernel.

Type: String

Default: None

Required: No

***LaunchSpecification.RamdiskId***

The ID of the RAM disk.

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.DeviceName***

The device named exposed to the instance (for example, /dev/sdh or xvdh). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.NoDevice***

Suppresses the device mapping.

Type: Boolean

Default: true

Required: No

***LaunchSpecification.BlockDeviceMapping.n.VirtualName***

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

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

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

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

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Default: true

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

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

***LaunchSpecification.Monitoring.Enabled***

Enables monitoring for the instance.

Type: String

Default: Disabled

Required: No

***LaunchSpecification.SubnetId***

The ID of the subnet in which to launch the Spot Instance.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.NetworkInterfaceId***

[EC2-VPC] Attaches an existing interface to a single instance. Requires `n=1` instances.

Type: String

Default:

Required: No

***LaunchSpecification.NetworkInterface.n.DeviceIndex***

[EC2-VPC] Applies to both attaching existing network interfaces and when creating a network interface.

Type: Integer

Default:

Required: No

***LaunchSpecification.NetworkInterface.n.SubnetId***

[EC2-VPC] Applies only when creating a network interface.

Type: String

Default:

Required: No

***LaunchSpecification.NetworkInterface.n.Description***

[EC2-VPC] Applies only when creating a network interface.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.PrivateIpAddress***

[EC2-VPC] The primary private IP address of the network interface. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if you are also specifying

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary` with a value of `true` with the

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress***

[EC2-VPC] The primary private IP address of the network interface. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter with `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary` with a value of `true` if you are also specifying the

`LaunchSpecification.NetworkInterface.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary***

[EC2-VPC] Indicates whether the private IP address is the primary private IP address. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter with a value of `true` with the

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option if you specify the `LaunchSpecification.NetworkInterface.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.SecondaryPrivateIpAddressCount***

[EC2-VPC] The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, AWS automatically assigns these IP addresses within the subnet's range.

The number of IP addresses you can assign to a network interface varies by instance type. For more information, go to [Available Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*.

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

Type: Integer

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.AssociatePublicIpAddress***

Indicates whether to assign an AWS public IP address to the instance that will be launched. Instances launched into a default subnet are assigned a public IP address by default. For information about instance IP addressing, see [Amazon EC2 Instance IP Addressing](#).

Type: Boolean

Default: If launching into a default subnet, the default value is `true`. If launching into a nondefault subnet, the default value is `false`.

Required: No

***LaunchSpecification.NetworkInterface.n.SecurityGroupId.n***

The security group IDs to associate with the created instance. Applies only when creating a network interface.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.DeleteOnTermination***

Applies to all network interfaces.

Type: Boolean

Default:

Required: No

***LaunchSpecification.IamInstanceProfile.Arn***

The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***LaunchSpecification.IamInstanceProfile.Name***

The name of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***LaunchSpecification.EbsOptimized***

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

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

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`spotInstanceRequestSet`**

Information about the Spot Instance request, wrapped in an `item` element.

Type: [SpotInstanceRequestSetItemType](#) (p. 510)

## Examples

### Example Request

This example creates a Spot Instances request for two `m1.small` instances and associates an IAM instance profile called `s3access` with them.

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=gsg-keypair
&LaunchSpecification.SecurityGroup.1=websrv
&LaunchSpecification.InstanceType=m1.small
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

### Example Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <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>gsg-keypair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>websrv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <blockDeviceMapping/>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
        <ebsOptimized>>false</ebsOptimized>
      </launchSpecification>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
    </item>
  </spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

```
</item>  
</spotInstanceRequestSet>  
</RequestSpotInstancesResponse>
```

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 277)
- [CancelSpotInstanceRequests](#) (p. 50)
- [DescribeSpotPriceHistory](#) (p. 285)



# ResetImageAttribute

## Description

Resets an attribute of an AMI to its default value.

### Note

The `productCodes` attribute can't be reset.

## Request Parameters

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Default: None

Valid value: `launchPermission`

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example resets the `launchPermission` attribute for the specified AMI.

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

## Example Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

## Related Actions

- [ModifyImageAttribute](#) (p. 353)
- [DescribeImageAttribute](#) (p. 189)

# ResetInstanceAttribute

## Description

Resets an attribute of an instance to its default value. To reset the kernel or RAM disk, the instance must be in a stopped state. To reset the `SourceDestCheck`, the instance can be either running or stopped.

The `SourceDestCheck` attribute controls whether source/destination checking is enabled. The default value is `true`, which means checking is enabled. This value must be `false` for a NAT instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset.

Type: String

Valid values: `kernel` | `ramdisk` | `sourceDestCheck`

Default: None

Required: Yes

## Response Elements

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

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example resets the `sourceDestCheck` attribute.

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1a2b3c4d
&Attribute=sourceDestCheck
&AUTHPARAMS
```

## Example Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

## Related Actions

- [ModifyInstanceAttribute](#) (p. 356)
- [DescribeInstanceAttribute](#) (p. 199)

# ResetNetworkInterfaceAttribute

## Description

Resets a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *Attribute*

The name of the attribute to reset.

Type: String

Valid values: SourceDestCheck (reset to true)

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: xsd:string

### `return`

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

Type: xsd:boolean

## Examples

### Example Request

This example resets the `sourceDestCheck` attribute for the network interface `eni-ffda3197`.

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

### Example Response

```
<ResetNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-
07-15/">
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
```

```
<return>true</return>  
</ResetNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 26)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 80)
- [DeleteNetworkInterface](#) (p. 136)
- [DescribeNetworkInterfaceAttribute](#) (p. 230)
- [DescribeNetworkInterfaces](#) (p. 232)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)

# ResetSnapshotAttribute

## Description

Resets permission settings for the specified snapshot.

## Request Parameters

### *SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset (currently only the attribute for permission to create volumes can be reset)

Type: String

Default: None

Valid value: `createVolumePermission`

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

This example resets the permissions for `snap-1a2b3c4d`, making it a private snapshot that can only be used by the account that created it.

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

### Example Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<return>>true</return>  
</ResetSnapshotAttributeResponse>
```

## Related Actions

- [ModifySnapshotAttribute](#) (p. 362)
- [DescribeSnapshotAttribute](#) (p. 269)
- [DescribeSnapshots](#) (p. 271)
- [CreateSnapshot](#) (p. 104)



# RevokeSecurityGroupEgress

## Description

Removes one or more egress rules from a security group for EC2-VPC. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be revoked.

Each rule consists of the protocol and the CIDR range or destination security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

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

For more information, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *GroupId*

The ID of the security group to modify.

Type: String

Default: None

Required: Yes

### *IpPermissions.n.IpProtocol*

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

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

Type: String

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

Required: Yes

### *IpPermissions.n.FromPort*

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

### *IpPermissions.n.ToPort*

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

### *IpPermissions.n.Groups.m.GroupId*

The name of the destination security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Condition: Required if modifying access for one or more destination security groups.

Required: Conditional

*IpPermissions.n.IpRanges.m.CidrIp*

The CIDR range. Cannot be used when specifying a destination security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

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

**requestId**

The ID of the request.

Type: xsd:string

**return**

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

Type: xsd:boolean

## Examples

### Example Request

This example revokes the access that the `webserv` security group for EC-VPC (with the ID `sg-1a2b3c4d`) has to the `205.192.0.0/16` and `205.159.0.0/16` address ranges on TCP port 80.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupName=webserv
&GroupName=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.2.CidrIp=205.159.0.0/16
&AUTHPARAMS
```

### Example Request

This example revokes the access that the security group for EC2-VPC (with the ID `sg-1a2b3c4d`) has to the security group for EC2-VPC with the ID `sg-9a8d7f5c` on TCP port 1433.

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

## Example Response

```
<RevokeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupEgressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 101)
- [DescribeSecurityGroups](#) (p. 265)
- [AuthorizeSecurityGroupEgress](#) (p. 32)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [AuthorizeSecurityGroupIngress](#) (p. 413)
- [DeleteSecurityGroup](#) (p. 144)

# RevokeSecurityGroupIngress

## Description

Removes one or more ingress rules from a security group. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be removed.

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

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

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

## Request Parameters

### *UserId*

Deprecated  
Required: No

### *GroupId*

The ID of the security group to modify. The security group must belong to your account.  
Type: String  
Default: None  
Required: Conditional  
Condition: Required for EC2-VPC; can be used instead of *GroupName* otherwise

### *GroupName*

The name of the security group to modify.  
Type: String  
Default: None  
Required: Conditional  
Condition: For EC2-Classic, can be used instead of *GroupId*.

### *IpPermissions.n.IpProtocol*

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

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

Type: String  
Valid values for EC2-Classic: `tcp` | `udp` | `icmp` or the corresponding protocol number (6 | 17 | 1).  
Valid values for EC2-VPC: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use -1 to specify all.

Required: Yes

### *IpPermissions.n.FromPort*

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

Type: Integer  
Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.ToPort***

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.Groups.m.UserId***

The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For security groups in EC2-Classic only. Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupName***

The name of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupId***

The ID of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For EC2-VPC only. Required if modifying access for one or more source security groups.

***IpPermissions.n.IpRanges.m.CidrIp***

The CIDR range. Cannot be used when specifying a source security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

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

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

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

Type: `xsd:boolean`

## Examples

### Example Request

This example revokes TCP port 80 access from the 205.192.0.0/16 address range for the security group named `webserv`. If the security group were for a VPC, you'd specify the ID of the security group instead of the name.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=webserv
&IpProtocol=tcp
&FromPort=80
&ToPort=80
&CidrIp=205.192.0.0/16
&AUTHPARAMS
```

### Example Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 101)
- [DescribeSecurityGroups](#) (p. 265)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [DeleteSecurityGroup](#) (p. 144)

# RunInstances

## Description

Launches the specified number of instances of 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. 202).

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*.

### Warning

If any of the AMIs have a product code attached for which the user has not subscribed, `RunInstances` fails.

## Request Parameters

### *ImageId*

The ID of the AMI, which you can get by calling `DescribeImages`.

Type: String

Default: None

Required: Yes

### *MinCount*

The minimum number of instances to launch. If you specify a minimum that is more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches no instances.

Type: Integer

Default: None

Constraints: Between 1 and the maximum number allowed for your account (the default for each account is 20, but this limit can be increased).

Required: Yes

### *MaxCount*

The maximum number of instances to launch. If you specify more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches the largest possible number of instances above `MinCount`.

Type: Integer

Default: None

Constraints: Between 1 and the maximum number allowed for your account (the default limit for each account is 20, but this limit can be increased).

Required: Yes

### *KeyName*

The name of the key pair. You can create a key pair using `CreateKeyPair` or `ImportKeyPair`.

### Important

If you launch an instance without specifying a key pair, you can't connect to the instance.

Type: String  
Default: None  
Required: No

***SecurityGroupId.n***

One or more security group IDs. You can create a security group using `CreateSecurityGroup`.

Type: String  
Default: Amazon EC2 uses the default security group  
Required: No

***SecurityGroup.n***

[EC2-Classic, default VPC] One or more security group names. For a nondefault VPC, you must use *SecurityGroupId.n*.

Type: String  
Default: Amazon EC2 uses the default security group  
Required: No

***UserData***

The Base64-encoded MIME user data for the instances.

Type: String  
Default: None  
Required: No

***InstanceType***

The instance type. See [Available Instance Types](#) for more information.

Type: String  
Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `hi1.4xlarge` | `hs1.8xlarge` | `cc2.8xlarge` | `cg1.4xlarge`  
Default: `m1.small`  
Required: No

***Placement.AvailabilityZone***

The Availability Zone for the instance.

Type: String  
Default: Amazon EC2 selects the Availability Zone  
Required: No

***Placement.GroupName***

The name of an existing placement group.

Type: String  
Default: None  
Required: No

***Placement.Tenancy***

The tenancy of the instance. An instance with a tenancy of `dedicated` runs on single-tenant hardware and can only be launched into a VPC.

Type: String  
Valid values: `default` | `dedicated`  
Default: `default`  
Required: No

***KernelId***

The ID of the kernel.



### Important

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB: A New Amazon Kernel Image](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String  
Default: None  
Required: No

#### ***RamdiskId***

The ID of the RAM disk.

Type: String  
Default: None  
Required: No

#### ***BlockDeviceMapping.n.DeviceName***

The device name exposed to the instance (for example, /dev/sdh or xvdh). For more information, see [Block Device Mapping](#).

Type: String  
Default: None  
Required: No

#### ***BlockDeviceMapping.n.VirtualName***

The virtual device name (ephemeral[0..3]). The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Type: String  
Default: None  
Required: No

#### ***BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String  
Default: None  
Required: No

#### ***BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

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

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

Required: No

#### ***BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Indicates whether to delete the volume on instance termination.

Type: Boolean

Default: `true`

Required: No

#### ***BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

#### ***BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

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

***BlockDeviceMapping.n.NoDevice***

Suppresses the device mapping.

Type: empty element

Default: None

Required: No

***Monitoring.Enabled***

Enables monitoring for the instance.

Type: Boolean

Default: `false`

Required: No

***SubnetId***

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Default: None

Required: No

***DisableApiTermination***

If you set this parameter to `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. If you set this parameter to `true` and then later want to be able to terminate the instance, you must first change the value of the `disableApiTermination` attribute to `false` using `ModifyInstanceAttribute`. Alternatively, if you set `InstanceInitiatedShutdownBehavior` to `terminate`, you can terminate the instance by running the shutdown command from the instance.

Type: Boolean

Default: `false`

Required: No

***InstanceInitiatedShutdownBehavior***

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid values: `stop` | `terminate`

Default: `stop`

Required: No

***PrivateIpAddress***

[EC2-VPC] The primary IP address. You must specify a value from the IP address range of the subnet.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if `PrivateIpAddresses.n.Primary` is set to `true` and `PrivateIpAddresses.n.PrivateIpAddress` is set to an IP address.

Type: String

Default: We select an IP address from the IP address range of the subnet

Required: No

***ClientToken***

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

Type: String

Default: None

Constraints: Maximum 64 ASCII characters

Required: No

***NetworkInterface.n.NetworkInterfaceId***

An existing interface to attach to a single instance. Requires n=1 instances.

Type: String

Default: None

Required: No

***NetworkInterface.n.DeviceIndex***

The device index. Applies to both attaching an existing network interface and when creating a network interface.

Type: Integer

Default: None

Required: Conditional

Condition: If you are specifying a network interface in the request, you must provide the device index.

***NetworkInterface.n.SubnetId***

The subnet ID. Applies only when creating a network interface.

Type: String

Default: None

Required: No

***NetworkInterface.n.Description***

A description. Applies only when creating a network interface.

Type: String

Default: None

Required: No

***NetworkInterface.n.PrivateIpAddress***

The primary private IP address. Applies only when creating a network interface. Requires n=1 network interfaces in launch.

Type: String

Default: None

Required: No

***NetworkInterface.n.SecurityGroupId.n***

The ID of the security group. Applies only when creating a network interface.

Type: String

Default: None

Required: No

***NetworkInterface.n.DeleteOnTermination***

Indicates whether to delete the network interface on instance termination.

Type: Boolean

Default: None

Required: No

***NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress***

The private IP address. This parameter can be used multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if `NetworkInterface.n.PrivateIpAddresses.n.Primary` is set to `true` and `NetworkInterface.n.PrivateIpAddress` is set to an IP address.

Type: String

Default: None

Required: No

***NetworkInterface.n.PrivateIpAddresses.n.Primary***

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

Type: Boolean

Default: None

Required: No

***NetworkInterface.n.SecondaryPrivateIpAddressCount***

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

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

Required: No

***NetworkInterface.n.AssociatePublicIpAddress***

Indicates whether to assign a public IP address to an instance in a VPC. The public IP address is associated with a specific network interface. If set to `true`, the following rules apply:

- Can only be associated with a single network interface with the device index of 0. You can't associate a public IP address with a second network interface, and you can't associate a public IP address if you are launching more than one network interface.
- Can only be associated with a new network interface, not an existing one.

Type: Boolean

Default: If launching into a default subnet, the default value is `true`. If launching into a nondefault subnet, the default value is `false`.

Required: No

***IamInstanceProfile.Arn***

The Amazon Resource Name (ARN) of the IAM instance profile to associate with the instances.

Type: String

Default: None

Required: No

***IamInstanceProfile.Name***

The name of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***EbsOptimized***

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

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

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`reservationId`**

The ID of the reservation.

Type: `xsd:string`

**ownerId**

The ID of the AWS account that owns the reservation.

Type: `xsd:string`

**groupSet**

A list of security groups the instance belongs to. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 463)

**instancesSet**

A list of instances. Each instance is wrapped in an `item` element.

Type: [RunningInstancesItemType](#) (p. 505)

**requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console, Auto Scaling).

Type: `xsd:string`

## Examples

### Example Request

This example launches three instances using the AMI with the ID `ami-60a54009`.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS
```

### Example Request

This example launches an `m1.small` instance into a subnet. Because no network interface is specified, the default network interface is used.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

### Example Request

This example launches an `m1.large` instance into a subnet. The network interface specifies a primary private IP address of `10.0.2.106` and two secondary private IP addresses (`10.0.2.107` and `10.0.2.108`).

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=m1.large
```

```
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.0.DeviceIndex=0
&NetworkInterface.0.PrivateIpAddresses.0.Primary=true
&NetworkInterface.0.PrivateIpAddresses.0.PrivateIpAddress=10.0.2.106
&NetworkInterface.0.PrivateIpAddresses.1.Primary=false
&NetworkInterface.0.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.107
&NetworkInterface.0.PrivateIpAddresses.2.Primary=false
&NetworkInterface.0.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.108
&NetworkInterface.0.SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example Request

This example launches a Dedicated Instance into the specified subnet.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2alfec43
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&AUTHPARAMS
```

## Example Request

This request launches an instance into a nondefault subnet, and requests a public IP address for a new network interface with the device index of 0.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&MaxCount=1
&MinCount=1
&NetworkInterface.0.DeviceIndex=0
&NetworkInterface.0.AssociatePublicIpAddress=true
&NetworkInterface.0.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

## Related Actions

- [DescribeInstances](#) (p. 202)
- [StopInstances](#) (p. 426)
- [StartInstances](#) (p. 424)
- [TerminateInstances](#) (p. 428)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [RevokeSecurityGroupIngress](#) (p. 413)
- [DescribeSecurityGroups](#) (p. 265)
- [CreateSecurityGroup](#) (p. 101)
- [CreateKeyPair](#) (p. 72)
- [ImportKeyPair](#) (p. 348)

# StartInstances

## Description

Starts an Amazon EBS-backed AMI that you've previously stopped.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Each time you transition an instance from stopped to started, we charge 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

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

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

## Examples

### Example Request

This example starts the i-10a64379 instance.

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

## Example Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
        <code>0</code>
        <name>pending</name>
      </currentState>
      <previousState>
        <code>80</code>
        <name>stopped</name>
      </previousState>
    </item>
  </instancesSet>
</StartInstancesResponse>
```

## Related Actions

- [StopInstances](#) (p. 426)
- [RunInstances](#) (p. 416)
- [DescribeInstances](#) (p. 202)
- [TerminateInstances](#) (p. 428)



# StopInstances

## Description

Stops an Amazon EBS-backed instance. Each time you transition an instance from stopped to started, we charge 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 S3-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 [Stopping Instances](#) in the *Amazon Elastic Compute Cloud User Guide*

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

### *Force*

Forces the instances to stop. The instances will not have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures. This option is not recommended for Windows instances.

Type: Boolean

Default: `false`

Required: No

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

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

## Examples

### Example Request

This example stops the instance with the ID `i-10a64379`.

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

### Example Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
        <code>64</code>
        <name>stopping</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</StopInstancesResponse>
```

### Related Actions

- [StartInstances](#) (p. 424)
- [RunInstances](#) (p. 416)
- [DescribeInstances](#) (p. 202)
- [TerminateInstances](#) (p. 428)

# TerminateInstances

## Description

Shuts down one or more instances. This operation is idempotent; if you terminate an instance more than once, each call will succeed.

Terminated instances will remain visible after termination (approximately one hour).

### Note

By default, Amazon EC2 deletes all Amazon EBS volumes that were attached when the instance launched. Amazon EBS volumes attached after instance launch continue running.

You can stop, start, and terminate EBS-backed instances. You can only terminate S3-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 [Stopping Instances](#) in the *Amazon Elastic Compute Cloud User Guide*

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

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

## Examples

### Example Request

This example terminates the instance with the ID `i-3ea74257`.

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-3ea74257
&AUTHPARAMS
```

## Example Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-3ea74257</instanceId>
      <currentState>
        <code>32</code>
        <name>shutting-down</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</TerminateInstancesResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)
- [StopInstances](#) (p. 426)
- [StartInstances](#) (p. 424)

# UnassignPrivateIpAddresses

## Description

Unassigns one or more secondary private IP addresses from a network interface.

## Request Parameters

### *NetworkInterfaceId*

The network interface from which the secondary private IP address will be unassigned.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress.n*

The secondary private IP addresses that you want to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 438)

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

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

Type: `xsd:boolean`

## Examples

### Example Request

The following request unassigns two secondary private IP addresses from the specified network interface.

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.0=10.0.2.60
&PrivateIpAddress.1=10.0.2.65
&AUTHPARAMS
```

### Example Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</UnassignPrivateIpAddresses>
```

## Related Actions

- [AssignPrivateIpAddresses](#) (p. 14)

# UnmonitorInstances

## Description

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

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

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

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of monitoring information for one or more instances. Each set of information is wrapped in an `item` element.

Type: [MonitorInstancesResponseSetItemType](#) (p. 486)

## Examples

### Example Request

This example disables monitoring for the instances with the IDs `i-43a4412a` and `i-23a3397d`.

```
https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

### Example Response

```
<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-07-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
  </instancesSet>
</UnmonitorInstancesResponse>
```

```
</item>
<item>
  <instanceId>i-23a3397d</instanceId>
  <monitoring>
    <state>disabled</state>
  </monitoring>
</item>
</instancesSet>
</UnmonitorInstancesResponse>
```

## Related Actions

- [MonitorInstances](#) (p. 367)
- [RunInstances](#) (p. 416)



# Data Types

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## Topics

- [AccountAttributeSetItemType](#) (p. 437)
- [AccountAttributeValueSetItemType](#) (p. 437)
- [AssignPrivateIpAddressesSetItemRequestType](#) (p. 438)
- [AttachmentSetItemResponseType](#) (p. 438)
- [AttachmentType](#) (p. 439)
- [AvailabilityZoneItemType](#) (p. 439)
- [AvailabilityZoneMessageType](#) (p. 440)
- [BlockDeviceMappingItemType](#) (p. 440)
- [BundleInstanceS3StorageType](#) (p. 441)
- [BundleInstanceTaskErrorType](#) (p. 442)
- [BundleInstanceTaskStorageType](#) (p. 442)
- [BundleInstanceTaskType](#) (p. 443)
- [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 444)
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- [CreateVolumePermissionItemType](#) (p. 445)
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## AccountAttributeSetItemType

Describes an account attribute.

### Ancestors

- [AccountAttributeSetType](#)

### Relevant Operations

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

### Contents

**attributeName**

The name of the attribute.

Type: String

**attributeValueSet**

A list of the attribute values, each one wrapped in an `item` element.

Type: [AccountAttributeValueSetItemType](#) (p. 437)

## AccountAttributeValueSetItemType

Describes a value of an account attribute.

### Ancestors

- [AccountAttributeSetItemType](#) (p. 437)

### Relevant Operations

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

### Contents

**attributeValue**

The value of the attribute.

Type: String

# AssignPrivateIpAddressesSetItemRequestType

Describes a private IP address.

## Ancestors

- [AssignPrivateIpAddressesType](#)

## Relevant Operations

- [AssignPrivateIpAddresses](#) (p. 14)
- [UnassignPrivateIpAddresses](#) (p. 430)

## Contents

### **privateIpAddress**

The private IP address.

Type: String

# AttachmentSetItemResponseType

Describes an attachment between a volume and an instance.

## Ancestors

- [AttachmentSetResponseType](#)

## Relevant Operations

- [DescribeVolumes](#) (p. 301)

## Contents

### **volumeId**

The ID of the volume.

Type: String

### **instanceId**

The ID of the instance.

Type: String

### **device**

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

Type: String

### **status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**attachTime**

The time stamp when the attachment initiated.

Type: DateTime

**deleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

## AttachmentType

Describes an attachment between a virtual private gateway and a VPC.

### Ancestors

- AttachmentSetType

### Relevant Operations

- [AttachVpnGateway](#) (p. 30)
- [CreateVpnGateway](#) (p. 123)
- [DescribeVpnGateways](#) (p. 319)

### Contents

**vpcId**

The ID of the VPC.

Type: String

**state**

The current state of the attachment.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

## AvailabilityZoneItem

Describes an Availability Zone.

### Ancestors

- AvailabilityZoneSetType

### Relevant Operations

- [DescribeAvailabilityZones](#) (p. 172)

## Contents

### **zoneName**

The name of the Availability Zone.

Type: String

### **zoneState**

The state of the Availability Zone.

Type: String

Valid values: `available`

### **regionName**

The name of the region.

Type: String

### **messageSet**

Any messages about the Availability Zone, each one wrapped in an `item` element.

Type: [AvailabilityZoneMessageType](#) (p. 440)

## AvailabilityZoneMessageType

Describes a message about an Availability Zone.

### Ancestors

- [AvailabilityZoneMessageSetType](#)

### Relevant Operations

- [DescribeAvailabilityZones](#) (p. 172)

## Contents

### **message**

The message about the Availability Zone.

Type: String

## BlockDeviceMappingItemType

Describes a block device mapping.

### Ancestors

- [BlockDeviceMappingType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 189)
- [DescribeImages](#) (p. 192)
- [DescribeSpotInstanceRequests](#) (p. 277)
- [RegisterImage](#) (p. 376)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

## Contents

### **deviceName**

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

Type: String

### **virtualName**

The virtual device name.

Type: String

### **ebs**

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsBlockDeviceType](#) (p. 460)

### **noDevice**

Include this empty element to suppress the specified device included in the block device mapping of the AMI.

## BundleInstanceS3StorageType

Describes the S3 bucket for an instance store-backed AMI.

## Ancestors

- [BundleInstanceTaskStorageType](#) (p. 442)

## Relevant Operations

- [BundleInstance](#) (p. 39)
- [CancelBundleTask](#) (p. 42)
- [DescribeBundleTasks](#) (p. 175)

## Contents

### **awsAccessKeyId**

The access key ID of the owner of the bucket.

Type: String



**bucket**

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

Type: String

**prefix**

The beginning of the file name of the AMI.

Type: String

**uploadPolicy**

A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on the user's behalf.

Type: String

**uploadPolicySignature**

The signature of the Base64 encoded JSON document.

Type: String

## BundleInstanceTaskErrorType

Describes an error for `BundleInstance`.

### Ancestors

- [BundleInstanceTaskType](#) (p. 443)

### Relevant Operations

- [BundleInstance](#) (p. 39)
- [CancelBundleTask](#) (p. 42)
- [DescribeBundleTasks](#) (p. 175)

### Contents

**code**

The error code.

Type: String

**message**

The error message.

Type: String

## BundleInstanceTaskStorageType

Describes the storage location for an instance store-backed AMI.

## Ancestors

- [BundleInstanceTaskType](#) (p. 443)

## Relevant Operations

- [BundleInstance](#) (p. 39)
- [CancelBundleTask](#) (p. 42)
- [DescribeBundleTasks](#) (p. 175)

## Contents

### s3

An Amazon S3 storage location.

Type: [BundleInstanceS3StorageType](#) (p. 441)

# BundleInstanceTaskType

Describes a bundle task.

## Ancestors

- [BundleInstanceTasksSetType](#)

## Relevant Operations

- [BundleInstance](#) (p. 39)
- [CancelBundleTask](#) (p. 42)
- [DescribeBundleTasks](#) (p. 175)

## Contents

### **instanceId**

The ID of the instance associated with this bundle task.

Type: String

### **bundleId**

The ID for this bundle task.

Type: String

### **state**

The state of the task.

Type: String

Valid values: `pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling` | `complete` | `failed`

**startTime**

The time this task started.

Type: DateTime

**updateTime**

The time of the most recent update for the task.

Type: DateTime

**storage**

The Amazon S3 storage locations.

Type: [BundleInstanceTaskStorageType](#) (p. 442)

**progress**

The level of task completion, as a percent (for example, 20%).

Type: String

**error**

If the task fails, a description of the error.

Type: [BundleInstanceTaskErrorType](#) (p. 442)

## CancelSpotInstanceRequestsResponseSetItemType

Describes a request to cancel a Spot Instance.

### Ancestors

- [CancelSpotInstanceRequestsResponseSetType](#)

### Relevant Operations

- [CancelSpotInstanceRequests](#) (p. 50)

### Contents

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

**state**

The state of the Spot Instance request.

Type: String

Valid values: `active` | `open` | `closed` | `cancelled` | `failed`

## ConversionTaskType

Describes a conversion task.

### Ancestors

- [ConversionTaskSetType](#)

## Relevant Operations

- [DescribeConversionTasks](#) (p. 178)
- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)

## Contents

### **conversionTaskId**

The ID of the conversion task

Type: String

### **expirationTime**

The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.

Type: String

### **importVolume**

If the task is for importing a volume, this contains information about the import volume task.

Type: [ImportVolumeTaskDetailsType](#) (p. 467)

### **importInstance**

If the task is for importing an instance, this contains information about the import instance task.

Type: [ImportInstanceTaskDetailsType](#) (p. 465)

### **state**

The state of the conversion task.

Type: String

Valid values: `active` | `cancelling` | `cancelled` | `completed`

### **statusMessage**

The status message related to the conversion task.

Type: String

## CreateVolumePermissionItemType

Describes volume creation permissions.

## Ancestors

- [CreateVolumePermissionListType](#)

## Relevant Operations

- [DescribeSnapshotAttribute](#) (p. 269)
- [ModifySnapshotAttribute](#) (p. 362)

## Contents

### **userId**

The ID of an AWS account that can create volumes from the snapshot.

Type: String

### **group**

The group that is allowed to create volumes from the snapshot.

Type: String

Valid value: `all`

## CustomerGatewayType

Describes a customer gateway.

## Ancestors

- [CustomerGatewaySetType](#)

## Relevant Operations

- [CreateCustomerGateway](#) (p. 59)
- [DescribeCustomerGateways](#) (p. 180)

## Contents

### **customerGatewayId**

The ID of the customer gateway.

Type: String

### **state**

The current state of the customer gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

### **type**

The type of VPN connection the customer gateway supports.

Type: String

Valid values: `ipsec.1`

### **ipAddress**

The Internet-routable IP address of the customer gateway's outside interface.

Type: String

### **bgpAsn**

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: Integer

### **tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

# DescribeAddressesResponseItemType

Describes an IP address.

## Ancestors

- DescribeAddressesResponseInfoType

## Relevant Operations

- [DescribeAddresses](#) (p. 168)

## Contents

### **publicIp**

The public IP address.

Type: String

### **allocationId**

The ID representing the allocation of the address for use with EC2-VPC.

Type: String

### **domain**

Indicates whether this Elastic IP address is for instances in EC2-Classic or EC2-VPC.

Type: String

Valid values: `standard` | `vpc`

### **instanceId**

The ID of the instance the address is associated with (if any).

Type: String

### **associationId**

The ID representing the association of an Elastic IP address with an instance in a VPC.

Type: String

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **networkInterfaceOwnerId**

The ID of the AWS account that owns the network interface.

Type: String

# DescribeImagesResponseItemType

Describes an image.

## Ancestors

- DescribeImagesResponseInfoType

## Relevant Operations

- [DescribeImages](#) (p. 192)

## Contents

### **imageId**

The ID of the AMI.

Type: String

### **imageLocation**

The location of the AMI.

Type: String

### **imageState**

Current state of the AMI. If the operation returns `available`, the image is successfully registered and available for launching.

Type: String

Valid values: `available` | `pending` | `failed`

### **imageOwnerId**

AWS account ID of the image owner.

Type: String

### **isPublic**

Indicates whether the image has public launch permissions. The value is `true` if this image has public launch permissions or `false` if it has only implicit and explicit launch permissions.

Type: Boolean

### **productCodes**

Any product codes associated with the AMI, each one wrapped in an `item` element.

Type: [ProductCodesSetItemType](#) (p. 498)

### **architecture**

The architecture of the image.

Type: String

Valid values: `i386` | `x86_64`

### **imageType**

The type of image.

Type: String

Valid values: `machine` | `kernel` | `ramdisk`

### **kernelId**

The kernel associated with the image, if any. Only applicable for machine images.

Type: String

### **ramdiskId**

The RAM disk associated with the image, if any. Only applicable for machine images.

Type: String

### **platform**

The value is `windows` for Windows AMIs; otherwise blank.

Type: String

### **stateReason**

The reason for the state change.

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

**imageOwnerAlias**

The AWS account alias (for example, `amazon`, `self`, etc.) or AWS account ID that owns the AMI.

Type: String

**name**

The name of the AMI that was provided during image creation.

Type: String

**description**

The description of the AMI that was provided during image creation.

Type: String

**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`

**rootDeviceName**

The device name of the root device (for example, `/dev/sda1` or `xvda`).

Type: String

**blockDeviceMapping**

Any block device mapping entries, each one wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 440)

**virtualizationType**

The type of virtualization of the AMI.

Type: String

Valid values: `paravirtual` | `hvm`

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

**hypervisor**

The image's hypervisor type.

Type: String

Valid values: `ovm` | `xen`

## DescribeKeyPairsResponseItem

Describes a key pair.

### Ancestors

- [DescribeKeyPairsResponseInfoType](#)

### Relevant Operations

- [DescribeKeyPairs](#) (p. 223)



## Contents

### **keyName**

The name of the key pair.

Type: String

### **keyFingerprint**

If you used `CreateKeyPair` to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used `ImportKeyPair` to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of [RFC4716](#).

Type: String

## DescribeReservedInstancesListingsResponseSetItemType

Describes a Reserved Instance listing.

## Ancestors

- [DescribeReservedInstancesListingsResponseType](#)

## Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 248)

## Contents

### **reservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

### **createDate**

The time the listing was created.

Type: DateTime

### **updateDate**

The last modified timestamp of the listing.

Type: DateTime

### **status**

The status of the Reserved Instance listing.

Type: String

Valid values: `active` | `pending` | `cancelled` | `closed`.

### **statusMessage**

The reason for the current status of the Reserved Instance listing. The response can be blank.

Type: String

### **instanceCounts**

The number of instances in this state.

Type: [InstanceCountsSetType](#) (p. 469)

**priceSchedules**

The price of the Reserved Instance listing.

Type: [PriceScheduleSetType](#) (p. 496)

**tagSet**

The tags assigned to the resource. Each tag's information is wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

**clientToken**

The idempotency token you provided when you created the listing.

Type: String

## DescribeReservedInstancesListingSetItemType

Describes a Reserved Instance listing.

### Ancestors

- [DescribeReservedInstancesListings](#)

### Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 248)

### Contents

**reservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

## DescribeReservedInstancesOfferingsResponseSetItemType

Describes a Reserved Instance offering.

### Ancestors

- [DescribeReservedInstancesOfferingsResponseSetType](#)

### Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 252)

## Contents

### **reservedInstancesOfferingId**

The ID of the Reserved Instance offering.

Type: String

### **instanceType**

The instance type on which the Reserved Instance can be used.

Type: String

### **availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

### **duration**

The duration of the Reserved Instance, in seconds.

Type: Long

### **fixedPrice**

The purchase price of the Reserved Instance.

Type: Double

### **usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Double

### **productDescription**

The Reserved Instance description.

Type: String

Valid values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

### **instanceTenancy**

The tenancy of the reserved instance.

Type: String

Valid values: `default` | `dedicated`

### **currencyCode**

The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is `USD`.

Type: String

### **offeringType**

The Reserved Instance offering type.

Type: String

Valid values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization`

### **recurringCharges**

The recurring charge tag assigned to the resource.

Type: [RecurringChargesSetItemType](#) (p. 499)

### **marketplace**

Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. Returns `true` if it is a Marketplace offering.

Type: Boolean

### **pricingDetailsSet**

The pricing details of the Reserved Instance offering wrapped in an `item` element.

Type: [PricingDetailsSetItemType](#) (p. 496).

## DescribeReservedInstancesOfferingsResponseType

Describes a Reserved Instance offering.

### Ancestors

- [DescribeReservedInstancesOfferings](#)

### Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 252)

### Contents

#### **requestId**

The ID of the Reserved Instance offering request.

Type: String

#### **reservedInstancesOfferingsSet**

The instance type on which the Reserved Instance can be used.

Type: [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 451)

#### **nextToken**

The next paginated set of results to return.

Type: String

## DescribeReservedInstancesResponseSetItemType

Describes a Reserved Instance.

### Ancestors

- [DescribeReservedInstancesResponseSetType](#)

### Relevant Operations

- [DescribeReservedInstances](#) (p. 244)

### Contents

#### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

#### **instanceType**

The instance type on which the Reserved Instance can be used.

Type: String

<b>availabilityZone</b>	The Availability Zone in which the Reserved Instance can be used. Type: String
<b>start</b>	The date and time the Reserved Instance started. Type: DateTime
<b>duration</b>	The duration of the Reserved Instance, in seconds. Type: Long
<b>fixedPrice</b>	The purchase price of the Reserved Instance. Type: Double
<b>usagePrice</b>	The usage price of the Reserved Instance, per hour. Type: Double
<b>instanceCount</b>	The number of Reserved Instances purchased. Type: Integer
<b>productDescription</b>	The Reserved Instance description. Type: String Valid values: Linux/UNIX   Linux/UNIX (Amazon VPC)   Windows   Windows (Amazon VPC)
<b>state</b>	The state of the Reserved Instance purchase. Type: String Valid values: payment-pending   active   payment-failed   retired
<b>tagSet</b>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 502)
<b>instanceTenancy</b>	The tenancy of the reserved instance. Type: String Valid values: default   dedicated
<b>currencyCode</b>	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
<b>offeringType</b>	The Reserved Instance offering type. Type: String Valid values: Heavy Utilization   Medium Utilization   Light Utilization
<b>recurringCharges</b>	The recurring charge tag assigned to the resource. Type: <a href="#">RecurringChargesSetItemType</a> (p. 499)

## DescribeReservedInstancesSetItemType

Describes a Reserved Instance.

## Ancestors

- DescribeReservedInstancesListings

## Relevant Operations

- [DescribeReservedInstances](#) (p. 244)

## Contents

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

# DescribeSnapshotsSetItemResponseType

Describes a snapshot.

## Ancestors

- DescribeSnapshotsSetResponseType

## Relevant Operations

- [DescribeSnapshots](#) (p. 271)

## Contents

### **snapshotId**

The ID of the snapshot.

Type: String

### **volumeId**

The ID of the volume.

Type: String

### **status**

The snapshot state.

Type: String

Valid values: pending | completed | error

### **startTime**

The time stamp when the snapshot was initiated.

Type: DateTime

### **progress**

The progress of the snapshot, as a percentage.

Type: String

**ownerId**  
The ID of the AWS account that owns the snapshot.  
Type: String

**volumeSize**  
The size of the volume, in GiB.  
Type: String

**description**  
The description of the snapshot.  
Type: String

**ownerAlias**  
The AWS account alias (for example, `amazon`, `self`) or AWS account ID that owns the AMI.  
Type: String

**tagSet**  
Any tags assigned to the resource, each one wrapped in an `item` element.  
Type: [ResourceTagSetItem](#) (p. 502)

## DescribeVolumesSetItemResponseType

Describes an Amazon EBS volume.

### Ancestors

- [ItemType-DescribeVolumesSetResponse](#)

### Relevant Operations

- [DescribeVolumes](#) (p. 301)

### Contents

**volumeId**  
The ID of the volume.  
Type: String

**size**  
The size of the volume, in GiBs.  
Type: String

**snapshotId**  
The snapshot from which the volume was created (optional).  
Type: String

**availabilityZone**  
The Availability Zone in which the volume was created.  
Type: String

**status**  
The state of the volume.  
Type: String  
Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

**createTime**

The time stamp when volume creation was initiated.

Type: DateTime

**attachmentSet**

Any volumes attached, each one wrapped in an `item` element.

Type: [AttachmentSetItemResponseType](#) (p. 438)

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

**volumeType**

The volume type.

Type: String

Valid values: `standard` | `io1`

**iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

## DhcpConfigurationItemType

Describes a DHCP configuration option.

### Ancestors

- [DhcpConfigurationItemSetType](#)

### Relevant Operations

- [CreateDhcpOptions](#) (p. 61)
- [DescribeDhcpOptions](#) (p. 183)

### Contents

**key**

The name of a DHCP option.

Type: String

**valueSet**

Any values for a DHCP option, each one wrapped in an `item` element.

Type: [DhcpValueType](#) (p. 458)

## DhcpOptionsType

Describes a set of DHCP options.



## Ancestors

- [DhcpOptionsSetType](#)

## Relevant Operations

- [CreateDhcpOptions](#) (p. 61)
- [DescribeDhcpOptions](#) (p. 183)

## Contents

### **dhcpOptionsId**

The ID of the set of DHCP options.

Type: String

### **dhcpConfigurationSet**

The DHCP options in the set. Each option's key and set of values are wrapped in an `item` element.

Type: [DhcpConfigurationItemType](#) (p. 457)

### **tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

## DhcpValueType

Describes the value of a DHCP option.

## Ancestors

- [DhcpValueSetType](#)

## Relevant Operations

- [CreateDhcpOptions](#) (p. 61)
- [DescribeDhcpOptions](#) (p. 183)

## Contents

### **value**

A value for the DHCP option.

Type: String

## DiskImageDescriptionType

Describes a disk image.

## Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 466)
- [ImportVolumeTaskDetailsType](#) (p. 467)

## Relevant Operations

- [DescribeConversionTasks](#) (p. 178)
- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)

## Contents

### **format**

The disk image format.

Type: String

### **size**

The size of the disk image.

Type: Long

### **importManifestUrl**

A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

### **checksum**

The checksum computed for the disk image.

Type: String

# DiskImageVolumeDescriptionType

Describes the disk image for a volume.

## Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 466)
- [ImportVolumeTaskDetailsType](#) (p. 467)

## Relevant Operations

- [DescribeConversionTasks](#) (p. 178)
- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)

## Contents

### **size**

The size of the volume.

Type: Integer

### **id**

The volume identifier.

Type: String

## EbsBlockDeviceType

Describe an Amazon EBS block device.

## Ancestors

- [BlockDeviceMappingItemType](#) (p. 440)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 189)
- [DescribeImages](#) (p. 192)
- [DescribeSpotInstanceRequests](#) (p. 277)
- [RegisterImage](#) (p. 376)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

## Contents

### **snapshotId**

The ID of the snapshot.

Type: String

### **volumeSize**

The size of the volume, in GiB.

Type: Integer

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

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

### **deleteOnTermination**

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

### **volumeType**

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

**iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

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

## EbsInstanceBlockDeviceMappingResponseType

Describes a parameter used to set up an Amazon EBS volume in a block device mapping.

### Ancestors

- [InstanceBlockDeviceMappingResponseItem](#) (p. 468)

### Relevant Operations

- [DescribeInstanceAttribute](#) (p. 199)
- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

### Contents

**volumeId**

The ID of the Amazon EBS volume.

Type: String

**status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**attachTime**

The time stamp when the attachment initiated.

Type: DateTime

**deleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

## ExportTaskResponseType

Describes an export task.

### Ancestors

- [CreateInstanceExportTaskResponse](#)
- [DescribeExportTasksResponse](#)

- [ExportTaskSetResponseType](#)

## Relevant Operations

- [CreateInstanceExportTask](#) (p. 67)
- [DescribeExportTasks](#) (p. 187)

## Contents

### **exportTaskId**

The ID of the export task.

Type: String

### **description**

A description of the resource being exported.

Type: String

### **state**

The state of the conversion task.

Type: String

Valid values: active | cancelling | cancelled | completed

### **statusMessage**

The status message related to the export task.

Type: String

### **instanceExport**

The instance being exported.

Type: [InstanceExportTaskResponseType](#) (p. 470)

### **exportToS3**

The destination Amazon S3 bucket.

Type: [ExportToS3TaskResponseType](#) (p. 462)

## ExportToS3TaskResponseType

Describes an export task.

## Ancestors

- [CreateInstanceExportTaskResponseType](#)
- [DescribeExportTasksResponseType](#)
- [ExportTaskSetResponseType](#)
- [ExportTaskResponseType](#)

## Relevant Operations

- [CreateInstanceExportTask](#) (p. 67)
- [DescribeExportTasks](#) (p. 187)

## Contents

### **diskImageFormat**

The format for the exported image.

Type: String

Valid values: vmdk | vhd

### **containerFormat**

The container format used to combine disk images with metadata (such as OVF).

Type: String

Valid values: ova

### **s3Bucket**

The Amazon S3 bucket for the destination image.

Type: String

### **s3Key**

The image written to a single object in s3bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

## GroupItemType

Describes a security group.

## Ancestors

- [GroupSetType](#)

## Relevant Operations

- [CreateNetworkInterface](#) (p. 80)
- [DescribeInstanceAttribute](#) (p. 199)
- [DescribeInstances](#) (p. 202)
- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

## Contents

### **groupId**

The ID of the security group.

Type: String

### **groupName**

The name of the security group.

Type: String

## iamInstanceProfileRequestType

Describes an IAM instance profile.

### Ancestors

- LaunchSpecificationRequestType
- LaunchSpecificationResponseType
- RunInstancesType

### Relevant Operations

- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

### Contents

**arn**

The Amazon Resource Name (ARN) of the instance profile.

Type: String

**name**

The name of the instance profile.

Type: String

## iamInstanceProfileResponseType

Describes an IAM instance profile.

### Ancestors

- RunningInstancesItemType

### Relevant Operations

- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

### Contents

**arn**

The Amazon Resource Name (ARN) of the instance profile.

Type: String

**id**  
The ID of the instance profile.  
Type: String

## IcmpTypeCodeType

Describes the ICMP type and code.

### Ancestors

- [NetworkAclEntryType](#) (p. 487)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 75)
- [DescribeNetworkAcls](#) (p. 225)

### Contents

**code**  
The ICMP code. A value of -1 means all codes for the specified ICMP type.  
Type: Integer

**type**  
The ICMP type. A value of -1 means all types.  
Type: Integer

## ImportInstanceTaskDetailsType

Describes an import instance task.

### Ancestors

- [ConversionTaskType](#) (p. 444)

### Relevant Operations

- [DescribeConversionTasks](#) (p. 178)
- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)



## Contents

### volumes

Any instance volumes for import, each one wrapped in an `item` element.

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

### instanceId

The ID of the instance.

Type: String

### platform

The value is `Windows` for Windows AMIs; otherwise blank.

Type: String

### description

An optional description of the instance.

Type: String

## ImportInstanceVolumeDetailItemType

Describes an import volume task.

## Ancestors

- [ImportInstanceVolumeDetailSetType](#)

## Relevant Operations

- [DescribeConversionTasks](#) (p. 178)
- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)

## Contents

### bytesConverted

The number of bytes converted so far.

Type: Long

### availabilityZone

The Availability Zone where the resulting instance will reside.

Type: String

### image

The image.

Type: [DiskImageDescriptionType](#) (p. 458)

### description

The description you provided when starting the import instance task.

Type: String

### volume

The volume.

Type: [DiskImageVolumeDescriptionType](#) (p. 459)

**status**

The status of the import of this particular disk image.

Type: String

**statusMessage**

The status information or errors related to the disk image.

Type: String

## ImportVolumeTaskDetailsType

Describes an import volume task.

### Ancestors

- [ConversionTaskType](#) (p. 444)

### Relevant Operations

- [DescribeConversionTasks](#) (p. 178)
- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)

### Contents

**bytesConverted**

The number of bytes converted so far.

Type: Long

**availabilityZone**

The Availability Zone where the resulting volume will reside.

Type: String

**description**

The description you provided when starting the import volume task.

Type: String

**image**

The image.

Type: [DiskImageDescriptionType](#) (p. 458)

**volume**

The volume.

Type: [DiskImageVolumeDescriptionType](#) (p. 459)

## InstanceBlockDeviceMappingItemType

Describes a block device mapping.

## Ancestors

- [InstanceBlockDeviceMappingType](#)

## Relevant Operations

- [ModifyInstanceAttribute](#) (p. 356)

## Contents

### **deviceName**

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

Type: String

### **virtualName**

The virtual device name.

Type: String

### **ebs**

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [InstanceEbsBlockDeviceType](#) (p. 470)

### **noDevice**

Include this empty element to suppress the specified device included in the block device mapping of the AMI.

# InstanceBlockDeviceMappingResponseItemType

Describes a block device mapping.

## Ancestors

- [InstanceBlockDeviceMappingResponseType](#)

## Relevant Operations

- [DescribeInstanceAttribute](#) (p. 199)
- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

## Contents

### **deviceName**

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

Type: String

### **ebs**

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsInstanceBlockDeviceMappingResponseType](#) (p. 461)

## InstanceCountsSetItemType

Describes a Reserved Instance listing state.

### Ancestors

- [DescribeReservedInstancesListingSetType](#)
- [InstanceCountsSetType](#)

### Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 248)

### Contents

#### **state**

The states of the listed Reserved Instances.

Type: String

Valid values: `available` | `sold` | `cancelled` | `pending`

#### **instanceCount**

The number of listed Reserved Instances in the state specified by the `state`.

Type: Integer

## InstanceCountsSetType

Contains a set of Reserved Instance listing states.

### Ancestors

- [DescribeReservedInstancesListingSetType](#)

### Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 248)

### Contents

#### **item**

The Reserved Instance listing item.

Type: [InstanceCountsSetItemType](#) (p. 469)

## InstanceEbsBlockDeviceType

Describes parameters used to set up an Amazon EBS volume.

### Ancestors

- [InstanceBlockDeviceMappingItemType](#) (p. 467)

### Relevant Operations

- [ModifyInstanceAttribute](#) (p. 356)

### Contents

#### **deleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

#### **volumeId**

The ID of the volume.

Type: String

## InstanceExportTaskResponseType

Describes an instance export task.

### Ancestors

- [CreateInstanceExportTaskResponseType](#)
- [DescribeExportTasksResponseType](#)
- [ExportTaskSetResponseType](#)
- [ExportTaskResponseType](#)

### Relevant Operations

- [CreateInstanceExportTask](#) (p. 67)
- [DescribeExportTasks](#) (p. 187)

### Contents

#### **instanceId**

The ID of the resource being exported.

Type: String

**targetEnvironment**

The target virtualization environment.

Type: String

Valid values: `vmware` | `citrix`

## InstanceMonitoringStateType

Describes the monitoring information for an instance.

### Ancestors

- [MonitorInstancesResponseSetItemType](#) (p. 486)
- [RunningInstancesItemType](#) (p. 505)

### Relevant Operations

- [DescribeInstances](#) (p. 202)
- [MonitorInstances](#) (p. 367)
- [RunInstances](#) (p. 416)
- [UnmonitorInstances](#) (p. 432)

### Contents

**state**

The state of monitoring for the instance. The `disabled` state means that Detailed Monitoring is disabled for the instance. The `enabled` state means that Detailed Monitoring is enabled for the instance. The `pending` state means that the instance is launching or that you recently enabled Detailed Monitoring for the instance.

Type: String

Valid values: `disabled` | `enabled` | `pending`

## InstanceNetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

### Relevant Operations

- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

### Contents

**publicIp**

The address of the Elastic IP address bound to the network interface.

Type: String  
**publicDnsName**  
The public DNS name.  
Type: String  
**ipOwnerId**  
The ID of the owner of the Elastic IP address.  
Type: String

## InstanceNetworkInterfaceAttachmentType

Describes a network interface attachment.

### Relevant Operations

- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

### Contents

**attachmentID**  
The ID of the network interface attachment.  
Type: String

**deviceIndex**  
The index of the device on the instance for the network interface attachment.  
Type: Integer

**status**  
The attachment state.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

**attachTime**  
The time stamp when the attachment initiated.  
Type: DateTime

**deleteOnTermination**  
Indicates whether the network interface is deleted when the instance is terminated.  
Type: Boolean

## InstanceNetworkInterfaceSetItemRequestType

Describes a network interface.

### Ancestors

- `InstanceNetworkInterfaceSetRequestType`

## Relevant Operations

- [DescribeNetworkInterfaces](#) (p. 232)

## Contents

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **deviceIndex**

Required. The index of the device on the instance for the network interface attachment.

Type: Integer

### **subnetId**

The ID of the subnet associated with the network string.

Type: String

### **description**

The description of the network interface.

Type: String

### **privateIpAddress**

The private IP address of the network interface.

Type: String

### **groupSet**

The IDs of the security groups for use by the network interface.

Type: [SecurityGroupIdSetItemType](#) (p. 507)

### **deleteOnTermination**

If set to `true`, the interface is deleted when the instance is terminated.

Type: Boolean

### **privateIpAddressesSet**

The list of IP addresses to assign to the network interface.

Type: [PrivateIpAddressesSetItemRequestType](#) (p. 497)

### **secondaryPrivateIpAddressCount**

The number of secondary private IP addresses. You cannot specify this option with `privateIpAddressesSet`.

Type: Integer

## InstanceNetworkInterfaceSetItemType

Describes a network interface.

## Ancestors

- InstanceNetworkInterfaceSetType

## Relevant Operations

- [DescribeInstances](#) (p. 202)



- [RunInstances](#) (p. 416)

## Contents

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **subnetId**

The ID of the subnet.

Type: String

### **vpcId**

The ID of the VPC.

Type: String

### **description**

The description.

Type: String

### **ownerId**

The ID of the customer who created the network interface.

Type: String

### **status**

The status of the network interface.

Type: String

Valid values: `available` | `attaching` | `in-use` | `detaching`

### **macAddress**

The MAC address.

Type: String

### **privateIpAddress**

The IP address of the network interface within the subnet.

Type: String

### **privateDnsName**

The private DNS name.

Type: String

### **sourceDestCheck**

Indicates whether to validate network traffic to or from this network interface.

Type: Boolean

### **groupSet.item**

A security group.

Type: [GroupItemType](#) (p. 463)

### **attachment**

The network interface attachment.

Type: [InstanceNetworkInterfaceAttachmentType](#) (p. 472)

### **association**

The association information for an Elastic IP associated with the network interface.

Type: [InstanceNetworkInterfaceAssociationType](#) (p. 471)

### **privateIpAddressesSet**

The private IP addresses associated with the network interface.

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

## InstancePrivateIpAddressesSetItemType

Describes a private IP address.

### Ancestors

- InstancePrivateIpAddressesSetType

### Relevant Operations

- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

### Contents

#### **privateIpAddress**

The private IP address of the network interface

Type: String

#### **privateDnsName**

The private DNS name.

Type: String

#### **primary**

Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

#### **association**

The association information for an Elastic IP address associated with the network interface.

Type: [InstanceNetworkInterfaceAssociationType](#) (p. 471)

## InstanceStateChangeType

Describes an instance state change.

### Ancestors

- InstanceStateChangeSetType

### Relevant Operations

- [StartInstances](#) (p. 424)
- [StopInstances](#) (p. 426)
- [TerminateInstances](#) (p. 428)

## Contents

- instanceId**  
The instance ID.  
Type: String
- currentState**  
The current state of the instance.  
Type: [InstanceStateType](#) (p. 476)
- previousState**  
The previous state of the instance.  
Type: [InstanceStateType](#) (p. 476)

## InstanceStateType

Describes the current state of the instance.

### Ancestors

- [InstanceStateChangeType](#) (p. 475)
- [RunningInstancesItemType](#) (p. 505)

### Relevant Operations

- [DescribeInstances](#) (p. 202)
- [DescribeInstanceStatus](#) (p. 213)
- [RunInstances](#) (p. 416)
- [StartInstances](#) (p. 424)
- [StopInstances](#) (p. 426)
- [TerminateInstances](#) (p. 428)

## Contents

- code**  
The low byte represents the state. The high byte is an opaque internal value and should be ignored.  
Type: Integer (16-bit unsigned)  
Valid values: 0 (pending) | 16 (running) | 32 (shutting-down) | 48 (terminated) | 64 (stopping) | 80 (stopped)
- name**  
The current state of the instance.  
Type: String  
Valid values: pending | running | shutting-down | terminated | stopping | stopped

## InstanceStatusDetailsSetType

Describes the instance status.

### Ancestors

- [InstanceStatusItemType](#) (p. 478)
- [InstanceStatusType](#) (p. 479)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 213)

### Contents

#### **name**

The type of instance status detail.

Type: String

Valid values: `reachability`

#### **status**

The status.

Type: String

Valid values: `passed` | `failed` | `insufficient-data`

#### **impairedSince**

The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.

Type: DateTime

## InstanceStatusEventsSetType

Describes a set of instance events.

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 213)

### Contents

#### **item**

The scheduled events for the instance.

Type: [InstanceStatusEventType](#) (p. 478)

## InstanceStatusEventType

Describes an instance event.

### Ancestors

- [InstanceStatusEventsSetType](#) (p. 477)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 213)

### Contents

#### **code**

The associated code of the event.

Type: String

Valid parameters: `instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`

#### **description**

A description of the event.

Type: String

#### **notBefore**

The earliest scheduled start time for the event.

Type: DateTime

#### **notAfter**

The latest scheduled end time for the event.

Type: DateTime

## InstanceStatusItemType

Describes the status of an instance.

### Ancestors

- [InstanceStatusSetType](#)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 213)

## Contents

### **instanceId**

The ID of the instance.

Type: String

### **availabilityZone**

The Availability Zone of the instance.

Type: String

### **eventsSet**

Extra information regarding events associated with the instance.

Type: [InstanceStatusEventsSetType](#) (p. 477)

### **instanceState**

The intended state of the instance. Calls to `DescribeInstanceState` require that an instance be in the `running` state.

Type: [InstanceStateType](#) (p. 476)

### **systemStatus**

Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.

Type: [InstanceStatusType](#) (p. 479)

### **instanceStatus**

Reports impaired functionality that arises from problems internal to the instance. The [DescribeInstanceState](#) (p. 213) response elements report such problems as impaired reachability.

Type: [InstanceStatusType](#) (p. 479)

## InstanceStatusSetType

Describes the status of an instance.

## Relevant Operations

- [DescribeInstanceState](#) (p. 213)

## Contents

### **item**

The status of the instance.

Type: [InstanceStatusItemType](#) (p. 478)

## InstanceStatusType

Describes the state of an instance.

## Ancestors

- [InstanceStatusItemType](#) (p. 478)

## Relevant Operations

- [DescribeInstanceStatus](#) (p. 213)

## Contents

### **status**

The status.

Type: String

Valid values: ok | impaired | insufficient-data | not-applicable

### **details**

The system instance health or application instance health.

Type: [InstanceStatusDetailsSetType](#) (p. 477)

## InternetGatewayAttachmentType

Describes the attachment of a VPC to an Internet gateway.

## Ancestors

- [InternetGatewayAttachmentSetType](#)

## Relevant Operations

- [AttachInternetGateway](#) (p. 24)
- [CreateInternetGateway](#) (p. 70)
- [DescribeInternetGateways](#) (p. 220)

## Contents

### **vpcId**

The ID of the VPC.

Type: String

### **state**

The current state of the attachment.

Type: String

Valid values: attaching | attached | detaching | detached

## InternetGatewayType

Describes an Internet gateway.

## Ancestors

- [InternetGatewaySetType](#)

## Relevant Operations

- [CreateInternetGateway](#) (p. 70)
- [DescribeInternetGateways](#) (p. 220)

## Contents

### `internetGatewayId`

The ID of the Internet gateway.

Type: String

### `attachmentSet`

Any VPCs attached to the Internet gateway, each one wrapped in an `item` element.

Type: [InternetGatewayAttachmentType](#) (p. 480)

### `tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

## IpPermissionType

Describes a security group rule.

## Ancestors

- [IpPermissionSetType](#)

## Relevant Operations

- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [DescribeSecurityGroups](#) (p. 265)
- [RevokeSecurityGroupIngress](#) (p. 413)

## Contents

### `ipProtocol`

The protocol.

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`). For a list of protocol numbers, see [Protocol Numbers](#).

Type: String



**fromPort**

The start of port range for the TCP and UDP protocols, or an ICMP type number. A value of -1 indicates all ICMP types.

Type: Integer

**toPort**

The end of port range for the TCP and UDP protocols, or an ICMP code. A value of -1 indicates all ICMP codes for the given ICMP type.

Type: Integer

**groups**

A list of security group and AWS account ID pairs. Each pair is wrapped in an `item` element.

Type: [UserIdGroupPairType](#) (p. 516)

**ipRanges**

A list of IP ranges. Each range is wrapped in an `item` element.

Type: [IpRangeItemType](#) (p. 482)

## IpRangeItemType

Describes an IP range.

### Ancestors

- [IpRangeSetType](#)

### Relevant Operations

- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [DescribeSecurityGroups](#) (p. 265)
- [RevokeSecurityGroupIngress](#) (p. 413)

### Contents

**cidrIp**

The CIDR range. You can either specify a CIDR range or a source security group, not both.

Type: String

## LaunchPermissionItemType

Describes a launch permission.

### Ancestors

- [LaunchPermissionListType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 189)
- [ModifyImageAttribute](#) (p. 353)

## Contents

### **group**

The name of the group.

Type: String

Valid value: all

### **userId**

The AWS account ID.

Type: String

## LaunchSpecificationRequestType

Describes the launch specification of a Spot Instance.

## Ancestors

- [RequestSpotInstancesType](#)

## Relevant Operations

- [RequestSpotInstances](#) (p. 394)

## Contents

### **imageId**

The AMI ID.

Type: String

### **keyName**

The name of the key pair.

Type: String

### **groupSet**

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 463)

### **userData**

Base64-encoded MIME user data made available to the instance(s) in the reservation.

Type: [UserDataTypes](#) (p. 516)

### **instanceType**

The instance type.

Type: String

**placement**

The placement information for the instance.

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

**kernelId**

The ID of the kernel to select.

Type: String

**ramdiskId**

The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID.

Type: String

**blockDeviceMapping**

Any block device mapping entries for the instance. Each entry is wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 440)

**monitoring**

The monitoring information for the instance.

Type: [MonitoringInstanceType](#) (p. 486)

**subnetId**

The ID of the subnet.

Type: String

**networkInterfaceSet**

The network interfaces associated with the instance.

Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 472)

**iamInstanceProfile**

The IAM Instance Profile (IIP) associated with the instance.

Type: [IamInstanceProfileRequestType](#) (p. 464)

**ebsOptimized**

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

## LaunchSpecificationResponseType

Describes the launch specification of a Spot Instance.

### Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 510)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 277)

## Contents

### **imageId**

The AMI ID.

Type: String

### **keyName**

The name of the key pair.

Type: String

### **groupSet**

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 463)

### **instanceType**

The instance type.

Type: String

### **placement**

The placement information for the instance.

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

### **kernelId**

The ID of the kernel to select.

Type: String

### **ramdiskId**

The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID.

Type: String

### **blockDeviceMapping**

Any block device mapping entries for the instance. Each entry is wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 440)

### **monitoring**

The monitoring information for the instance.

Type: [MonitoringInstanceType](#) (p. 486)

### **subnetId**

The ID of the subnet.

Type: String

### **networkInterfaceSet**

The network interfaces for the instance.

Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 472)

### **iamInstanceProfile**

The IAM Instance Profile (IIP) associated with the instance.

Type: [IamInstanceProfileRequestType](#) (p. 464)

### **ebsOptimized**

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

## MonitoringInstanceType

Describes the monitoring for the instance.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 483)
- [LaunchSpecificationResponseType](#) (p. 484)
- [RunInstancesType](#)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

### Contents

#### **enabled**

Indicates whether monitoring is enabled for the instance.

Type: Boolean

## MonitorInstancesResponseSetItem

Describes the monitoring for the instance.

### Ancestors

- [MonitorInstancesResponseType](#)

### Relevant Operations

- [MonitorInstances](#) (p. 367)
- [UnmonitorInstances](#) (p. 432)

### Contents

#### **instanceId**

The instance ID.

Type: String

#### **monitoring**

The monitoring information.

Type: [InstanceMonitoringStateType](#) (p. 471)

## NetworkAclAssociationType

Describes an association between a network ACL and a subnet.

### Ancestors

- [NetworkAclAssociationSetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 75)
- [DescribeNetworkAcls](#) (p. 225)

### Contents

**networkAclAssociationId**

An identifier representing the association between a network ACL and a subnet.

Type: String

**networkAclId**

The ID of the network ACL.

Type: String

**subnetId**

The ID of the subnet.

Type: String

## NetworkAclEntryType

Describes an entry in a network ACL.

### Ancestors

- [NetworkAclEntrySetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 75)
- [DescribeNetworkAcls](#) (p. 225)

### Contents

**ruleNumber**

The rule number for the entry. ACL entries are processed in ascending order by rule number.

Type: Integer

**protocol**

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

Type: Integer

Valid values: Any protocol number (see [Protocol Numbers](#)).

**ruleAction**

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

Type: String

**egress**

Indicates an egress rule (rule is applied to traffic leaving the subnet). Value of `true` indicates egress.

Type: Boolean

**cidrBlock**

The network range to allow or deny, in CIDR notation.

Type: String

**icmpTypeCode**

ICMP protocol: The ICMP type and code.

Type: [IcmpTypeCodeType](#) (p. 465)

**portRange**

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

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

## NetworkACLType

Describes a network ACL.

### Ancestors

- [NetworkACLSetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 75)
- [DescribeNetworkAcls](#) (p. 225)

### Contents

**networkAclId**

The ID of the network ACL.

Type: String

**vpcId**

The ID of the VPC for the network ACL.

Type: String

**default**

Indicates whether this is the default network ACL for the VPC.

Type: Boolean

**entrySet**

A list of entries (rules) in the network ACL. Each entry is wrapped in an `item` element.

Type: [NetworkAclEntryType](#) (p. 487)

**associationSet**

A list of associations between the network ACL and one or more subnets. Each association is wrapped in an `item` element.

Type: [NetworkAclAssociationType](#) (p. 487)

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

## NetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

### Ancestors

- [InstanceNetworkInterfaceSetItemType](#)

### Relevant Operations

- [CreateNetworkInterface](#) (p. 80)
- [DescribeNetworkInterfaces](#) (p. 232)

### Contents

**publicIp**

The address of the Elastic IP address bound to the network interface.

Type: String

**publicDnsName**

The public DNS name.

Type: String

**ipOwnerId**

The ID of the Elastic IP address owner.

Type: String

**allocationID**

The allocation ID.

Type: String

**associationID**

The association ID.

Type: String

## NetworkInterfaceAttachmentType

Describes a network interface attachment.



## Relevant Operations

- [CreateNetworkInterface](#) (p. 80)
- [DescribeNetworkInterfaces](#) (p. 232)

## Contents

### **attachmentId**

The ID of the network interface attachment.

Type: String

### **instanceId**

The ID of the instance.

Type: String

### **instanceOwnerId**

The owner of the instance.

Type: String

### **deviceIndex**

The device index of the network interface attachment on the instance.

Type: Integer

### **status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

### **attachTime**

The timestamp indicating when the attachment initiated.

Type: `dateTime`

### **deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

## NetworkInterfacePrivateIpAddressSetItemType

Describes the private IP address of a network interface.

## Relevant Operations

- [DescribeNetworkInterfaces](#) (p. 232)

## Contents

### **privateIpAddress**

The private IP address of the network interface.

Type: String

### **privateDnsName**

The private DNS name.

Type: String

**primary**

Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

**association**

The association information for an Elastic IP address associated with the network interface.

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

## NetworkInterfaceType

Describes a network interface.

### Ancestors

- [NetworkInterfaceSetType](#)

### Relevant Operations

- [CreateNetworkInterface](#) (p. 80)
- [DescribeNetworkInterfaces](#) (p. 232)

### Contents

**networkInterfaceId**

The ID of the network interface.

Type: String

**subnetId**

The ID of the subnet.

**networkInterfaceId**

The ID of the network interface.

Type: String

**subnetId**

The ID of the subnet.

Type: String

**vpcId**

The ID of the VPC.

Type: String

**availabilityZone**

The Availability Zone.

Type: String

**description**

A description.

Type: String

**ownerId**

The ID of the customer who created the interface.

Type: String

**requesterId**

The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling)

Type: String

**requesterManaged**

Indicates whether the network interface is being managed by AWS.

Type: String

**status**

The status of the network interface.

Type: String

Valid values: `available` | `attaching` | `in-use` | `detaching`

**macAddress**

The MAC address.

Type: String

**privateIpAddress**

The IP address of the network interface within the subnet.

Type: String

**privateDnsName**

The private DNS name.

Type: String

**sourceDestCheck**

Indicates whether traffic to or from the instance is validated.

Type: Boolean

**groupSet**

The security group.

Type: [GroupItemType](#) (p. 463)

**attachment**

The network interface attachment.

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

**association**

The association information for an Elastic IP associated with the network interface.

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

**tagSet**

The tags assigned to the resource.

Type: [ResourceTagSetItemType](#) (p. 502)

**privateIpAddressesSet**

The private IP addresses associated with the network interface. Items are returned in a set.

Type: [NetworkInterfacePrivateIpAddressesSetItemType](#) (p. 490)

## PlacementGroupInfoType

Describes a placement group.

### Ancestors

- [PlacementGroupSetType](#)

## Relevant Operations

- [DeletePlacementGroup](#) (p. 138)

## Contents

**groupName**

The name of the placement group.

Type: String

**strategy**

The placement strategy.

Type: String

Valid values: `cluster`

**state**

The status of the placement group.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

## PlacementRequestType

Describes a placement group.

## Ancestors

- [LaunchSpecificationRequestType](#) (p. 483)
- [LaunchSpecificationResponseType](#) (p. 484)
- [RunInstancesType](#)

## Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

## Contents

**availabilityZone**

The Availability Zone for the instance.

Type: String

**groupName**

The name of a placement group for the instance.

Type: String

## PlacementResponseType

Describes a placement group.

### Ancestors

- [RunningInstancesItemType](#) (p. 505)

### Relevant Operations

- [DescribeInstances](#)
- [RunInstances](#)

### Contents

#### **availabilityZone**

The Availability Zone of the instance.

Type: String

#### **groupName**

The name of the placement group the instance is in (for cluster compute instances).

Type: String

#### **tenancy**

The tenancy of the instance (if the instance is running within a VPC). An instance with a tenancy of `dedicated` runs on single-tenant hardware.

Type: String

Valid values: `default` | `dedicated`

## PortRangeType

Describes a range of ports.

### Ancestors

- [NetworkAclEntryType](#) (p. 487)

### Relevant Operations

- [DescribeNetworkAcls](#) (p. 225)

### Contents

#### **from**

The first port in the range.

Type: Integer

**to**  
The last port in the range.  
Type: Integer

## PriceScheduleRequestSetItem

Describes the price for a Reserved Instance.

### Ancestors

- PriceScheduleRequestSetType

### Relevant Operations

- [CreateReservedInstancesListing](#) (p. 87)

### Contents

**term**  
The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.  
Type: Long

**price**  
The fixed price for the term.  
Type: Double

**currencyCode**  
The currency for transacting the Reserved Instance resale. At this time, the only supported currency is `USD`.  
Type: String  
Valid value: `USD`

## PriceScheduleSetItem

Describes the price for a Reserved Instance.

### Ancestors

- DescribeReservedInstancesListingsResponseSetItem
- PriceScheduleSetType

### Relevant Operations

- [CreateReservedInstancesListing](#) (p. 87)

## Contents

### **term**

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

### **price**

The fixed price for the term.

Type: Double

### **currencyCode**

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid value: USD

### **active**

The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.

A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.

Type: Boolean

## PriceScheduleSetType

Describes the price for a Reserved Instance.

## Ancestors

- [DescribeReservedInstancesListingSetType](#)

## Relevant Operations

- [DescribeReservedInstancesListings](#) (p. 248)

## Contents

### **item**

The Reserved Instance listing price schedule item.

Type: [PriceScheduleSetItemType](#) (p. 495).

## PricingDetailsSetItemType

Describes a Reserved Instance offering.

## Ancestors

- [DescribeReservedInstancesOfferings](#)

## Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 252)

## Contents

### **price**

The price per instance.

Type: Integer

### **count**

The number of instances available for the price.

Type: Integer

# PrivateIpAddressesSetItemRequestType

Describes a secondary private IP address for a network interface.

## Ancestors

- [PrivateIpAddressesSetRequestType](#)

## Relevant Operations

- [AssignPrivateIpAddresses](#) (p. 14)
- [UnassignPrivateIpAddresses](#) (p. 430)

## Contents

### **privateIpAddressesSet**

The list of private IP addresses.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 438)

### **primary**

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

Type: Boolean

# ProductCodeItem Type

Describes a product code.



## Ancestors

- [ProductCodeListType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 189)
- [ModifyImageAttribute](#) (p. 353)

## Contents

### `productCode`

The product code.

Type: String

# ProductCodesSetItemType

Describes a product code.

## Ancestors

- [ProductCodesSetType](#)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 189)
- [DescribeImages](#) (p. 192)
- [DescribeInstanceAttribute](#) (p. 199)
- [DescribeInstances](#) (p. 202)
- [DescribeSnapshotAttribute](#) (p. 269)
- [DescribeVolumeAttribute](#) (p. 299)
- [RunInstances](#) (p. 416)

## Contents

### `productCode`

The product code.

Type: String

### `type`

The type of product code.

Type: String

Valid values: `devpay` | `marketplace`

## ProductDescriptionSetItemType

Specifies a basic product description.

### Ancestors

- ProductDescriptionSetType

### Relevant Operations

- DescribeSpotPriceHistory (p. 285)

### Contents

#### **productDescription**

The description of the AMI.

Type: String

Valid values: Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)

## PropagatingVgwType

Describes a virtual private gateway propagating route.

### Ancestors

- PropagatingVgwSetType

### Relevant Operations

- CreateRouteTable (p. 99)
- DescribeRouteTables (p. 261)

### Contents

#### **gatewayID**

The ID of the virtual private gateway (VGW).

Type: String

## RecurringChargesSetItemType

Describes a recurring charge.

## Relevant Operations

- [DescribeReservedInstances](#) (p. 244)
- [DescribeReservedInstancesOfferings](#) (p. 252)

## Contents

### **frequency**

The frequency of the recurring charge.

Type: String

Valid value: Hourly

### **amount**

The amount of the recurring charge.

Type: Double

## RegionItemType

Describes a region.

## Ancestors

- RegionSetType

## Relevant Operations

- [DescribeRegions](#) (p. 241)

## Contents

### **regionName**

The name of the region.

Type: String

### **regionEndpoint**

The region service endpoint.

Type: String

## ReservationInfoType

Describes a reservation.

## Ancestors

- ReservationSetType

## Relevant Operations

- [DescribeInstances](#) (p. 202)

## Contents

### **reservationId**

The ID of the reservation.

Type: String

### **ownerId**

The ID of the AWS account that owns the reservation.

Type: String

### **groupSet**

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 463)

### **instancesSet**

A list of instances. Each instance is wrapped in an `item` element.

Type: [RunningInstancesItemType](#) (p. 505)

### **requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

## ReservedInstanceLimitPriceType

Describes the limit price of a Reserved Instance offering.

## Ancestors

- [PurchaseReservedInstancesOfferings](#)

## Relevant Operations

- [DescribeReservedInstancesOfferings](#) (p. 252)

## Contents

### **amount**

Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount \* price).

Type: Double

### **currencyCode**

Currency in which the `limitPrice` amount is specified. At this time, the only supported currency is USD.

Type: Double

# ResourceTagSetItemType

Describes the tags assigned to an EC2 resource.

## Ancestors

- ResourceTagSetType

## Relevant Operations

- DescribeImages (p. 192)
- DescribeInstances (p. 202)
- DescribeVolumes (p. 301)
- DescribeSnapshots (p. 271)
- DescribeSpotInstanceRequests (p. 277)

## Contents

### key

The tag key.

Type: String

### value

The tag value.

Type: String

# RouteTableAssociationType

Describes an association between a route table and a subnet.

## Ancestors

- RouteTableAssociationSetType

## Relevant Operations

- CreateRouteTable (p. 99)
- DescribeRouteTables (p. 261)

## Contents

### routeTableAssociationId

An identifier representing the association between a route table and a subnet.

Type: String

**routeTableId**  
The ID of the route table.  
Type: String

**subnetId**  
The ID of the subnet.  
Type: String

**main**  
Indicates whether this is the main route table.  
Type: Boolean

## RouteTableType

Describes a route table.

### Ancestors

- [RouteTableSetType](#)

### Relevant Operations

- [CreateRouteTable](#) (p. 99)
- [DescribeRouteTables](#) (p. 261)

### Contents

**routeTableId**  
The route table's ID.  
Type: String

**vpcId**  
The ID of the VPC for the route table.  
Type: String

**routeSet**  
A list of routes in the route table. Each route is wrapped in an `item` element.  
Type: [RouteType](#) (p. 504)

**associationSet**  
A list of associations between the route table and one or more subnets. Each association is wrapped in an `item` element.  
Type: [RouteTableAssociationType](#) (p. 502)

**propagatingVgwSet**  
The IDs of any virtual private gateways (VGW) propagating routes, each route wrapped in an `item` element.  
Type: [PropagatingVgwType](#) (p. 499)

**tagSet**  
Any tags assigned to the resource, each one wrapped in an `item` element.  
Type: [ResourceTagSetItemType](#) (p. 502)

# RouteType

Describes a route in a route table.

## Ancestors

- [RouteSetType](#)

## Relevant Operations

- [CreateRouteTable](#) (p. 99)
- [DescribeRouteTables](#) (p. 261)

## Contents

### *destinationCidrBlock*

The CIDR address block used for the destination match.

Type: String

### *gatewayId*

The ID of a gateway attached to your VPC.

Type: String

### *instanceId*

The ID of a NAT instance in your VPC.

Type: String

### *instanceOwnerId*

The owner of the instance.

Type: String

### *networkInterfaceId*

The network interface ID.

Type: String

### *state*

The state of the route. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).

Type: String

Valid values: `active` | `blackhole`

### *origin*

Describes how the route was created.

Type: String

Valid values: `Valid values: CreateRouteTable | CreateRoute | EnableVgwRoutePropagation`

- `CreateRouteTable` indicates that route was automatically created when the route table was create.
- `CreateRoute` indicates that the route was manually added to the route table.
- `EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.

# RunningInstancesItemType

Describes a running instance.

## Ancestors

- [RunningInstancesSetType](#)

## Relevant Operations

- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

## Contents

### **instanceId**

The ID of the instance launched.

Type: String

### **imageId**

The ID of the AMI used to launch the instance.

Type: String

### **instanceState**

The current state of the instance.

Type: [InstanceStateType](#) (p. 476)

### **privateDnsName**

The private DNS name assigned to the instance. This DNS name can only be used inside the Amazon EC2 network. This element remains empty until the instance enters the `running` state.

Type: String

### **dnsName**

The public DNS name assigned to the instance. This element remains empty until the instance enters the `running` state.

Type: String

### **reason**

The reason for the most recent state transition. This might be an empty string.

Type: String

### **keyName**

The key pair name, if this instance was launched with an associated key pair.

Type: String

### **amiLaunchIndex**

The AMI launch index, which can be used to find this instance in the launch group.

Type: String

### **productCodes**

The product codes attached to this instance. Each product code is wrapped in an `item` element.

Type: [ProductCodesSetItemType](#) (p. 498)

### **instanceType**

The instance type.

Type: String



Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `hi1.4xlarge` | `hs1.8xlarge` | `cc2.8xlarge` | `cg1.4xlarge`

**launchTime**

The time the instance was launched.

Type: `DateTime`

**placement**

The location where the instance launched.

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

**kernelId**

The kernel associated with this instance.

Type: `String`

**ramdiskId**

The RAM disk associated with this instance.

Type: `String`

**platform**

The value is `windows` for Windows AMIs; otherwise blank.

Type: `String`

**monitoring**

The monitoring information for the instance.

Type: [InstanceMonitoringStateType](#) (p. 471)

**subnetId**

The ID of the subnet in which the instance is running.

Type: `String`

**vpcId**

The ID of the VPC in which the instance is running.

Type: `String`

**privateIpAddress**

The private IP address assigned to the instance.

Type: `String`

**ipAddress**

The IP address of the instance.

Type: `String`

**sourceDestCheck**

Specifies whether to enable an instance launched in a VPC to perform NAT. This controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, go to [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: `Boolean`

**groupSet**

A list of the security groups for the instance. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 463)

**stateReason**

The reason for the most recent state transition. See [StateReasonType](#) (p. 513) for a listing of supported state change codes.

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

**architecture**

The architecture of the image.

Type: `String`

Valid values: `i386` | `x86_64`

**rootDeviceType**

The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device.

Type: String

Valid values: `ebs` | `instance-store`

**rootDeviceName**

The root device name (for example, `/dev/sda1`).

Type: String

**blockDeviceMapping**

Any block device mapping entries for the instance, each one wrapped in an `item` element.

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

**instanceLifecycle**

Indicates whether this is a Spot Instance.

Type: String

Valid values: `spot` | blank (no value)

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

**virtualizationType**

The instance's virtualization type.

Type: String

Valid values: `paravirtual` | `hvm`

**clientToken**

The idempotency token you provided when you launched the instance.

Type: String

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

**hypervisor**

The instance's hypervisor type.

Type: String

Valid values: `ovm` | `xen`

**networkInterfaceSet**

The network interfaces for the instance.

Type: [InstanceNetworkInterfaceSetItemType](#) (p. 473)

**iamInstanceProfile**

The IAM Instance Profile (IIP) associated with the instance.

Type: [IamInstanceProfileResponseType](#) (p. 464)

**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

Default: `false`

## SecurityGroupIdSetItemType

Describes a security group.

## Ancestors

- [LaunchSpecificationResponseType](#)
- [LaunchSpecificationRequestType](#)
- [InstanceNetworkInterfaceSetItemRequestType](#)

## Relevant Operations

- [CreateNetworkInterface](#) (p. 80)
- [DescribeSpotInstanceRequests](#) (p. 277)
- [ModifyNetworkInterfaceAttribute](#) (p. 360)
- [ModifyInstanceAttribute](#) (p. 356)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

## Contents

### **groupId**

The ID of the security group associated with the network interface.

Type: String

## SecurityGroupItemType

Describes a security group

## Ancestors

- [SecurityGroupSetType](#)

## Relevant Operations

- [DescribeSecurityGroups](#) (p. 265)

## Contents

### **ownerId**

The AWS account ID of the owner of the security group.

Type: String

### **groupId**

The ID of the security group.

Type: String

### **groupName**

The name of the security group.

<b>Type:</b>	String
<b>groupDescription</b>	A description of the security group. Type: String
<b>vpcId</b>	[EC2-VPC] The ID of the VPC for the security group. Type: String
<b>ipPermissions</b>	A list of inbound rules associated with the security group. Each permission is wrapped in an <code>item</code> element. Type: <a href="#">IpPermissionType</a> (p. 481)
<b>ipPermissionsEgress</b>	[EC2-VPC] A list of outbound rules associated with the security group. Each permission is wrapped in an <code>item</code> element. Type: <a href="#">IpPermissionType</a> (p. 481)
<b>tagSet</b>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 502)

## SpotDatafeedSubscriptionType

Describes the datafeed for a Spot Instance.

### Ancestors

- [CreateSpotDatafeedSubscriptionResponseType](#)
- [DescribeSpotDatafeedSubscriptionResponseType](#)

### Relevant Operations

- [CreateSpotDatafeedSubscription](#) (p. 107)
- [DescribeSpotDatafeedSubscription](#) (p. 276)

### Contents

<b>ownerId</b>	The AWS account ID of the account. Type: String
<b>bucket</b>	The Amazon S3 bucket where the Spot Instance datafeed is located. Type: String
<b>prefix</b>	The prefix that is prepended to datafeed files. Type: String
<b>state</b>	The state of the Spot Instance datafeed subscription.

Type: String

Valid values: `Active` | `Inactive`

**fault**

The fault codes for the Spot Instance request, if any.

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

## SpotInstanceRequestSetItemType

Describe a Spot Instance request.

### Ancestors

- [SpotInstanceRequestSetType](#)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)

### Contents

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

**spotPrice**

The maximum hourly price for any Spot Instance launched to fulfill the request.

Type: String

**type**

The Spot Instance request type.

Type: String

Valid values: `one-time` | `persistent`

**state**

The state of the Spot Instance request. Spot bid status information can help you track your Spot Instance requests. For information, see [Tracking Spot Requests with Bid Status Codes](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid values: `open` | `active` | `closed` | `cancelled` | `failed`

**fault**

The fault codes for the Spot Instance request, if any.

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

**status**

The status code and status message describing the Spot Instance request.

Type: [SpotInstanceStatusMessageType](#) (p. 512)

**validFrom**

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled.

If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: `DateTime`

**validUntil**

The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date is reached.

Type: `DateTime`

**launchGroup**

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: `String`

**availabilityZoneGroup**

The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone.

Type: `String`

**launchedAvailabilityZone**

The Availability Zone in which the bid is launched.

Type: `String`

**launchSpecification**

Additional information for launching instances.

Type: [LaunchSpecificationResponseType](#) (p. 484)

**instanceId**

The instance ID, if an instance has been launched to fulfill the Spot Instance request.

Type: `String`

**createTime**

The time stamp when the Spot Instance request was created.

Type: `DateTime`

**productDescription**

The product description associated with the Spot Instance.

Type: `String`

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

## SpotInstanceStateFaultType

Describes a Spot Instance state change.

### Ancestors

- [SpotDatafeedSubscriptionType](#) (p. 509)
- [SpotInstanceRequestSetItemType](#) (p. 510)

### Relevant Operations

- [CreateSpotDatafeedSubscription](#) (p. 107)
- [DescribeSpotDatafeedSubscription](#) (p. 276)

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)

## Contents

### **code**

The reason code for the Spot Instance state change.

Type: String

### **message**

The message for the Spot Instance state change.

Type: String

## SpotInstanceStatusMessageType

Describes a Spot Instance request.

## Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 510)

## Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 277)

## Contents

### **code**

The status code of the request.

Type: String

### **updateTime**

The time of the most recent status update.

Type: DateTime

### **message**

The description for the status code for the Spot request.

Type: String

## SpotPriceHistorySetItemType

Describes the Spot Price history.

## Ancestors

- [SpotPriceHistorySetType](#)

## Relevant Operations

- [DescribeSpotPriceHistory](#) (p. 285)

## Contents

### **instanceType**

The instance type.

Type: String

### **productDescription**

A general description of the AMI.

Type: String

Valid values: Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)

### **spotPrice**

The maximum price you will pay to launch one or more Spot Instances.

Type: String

### **timestamp**

The date and time the request was created.

Type: DateTime

### **availabilityZone**

The Availability Zone.

Type: String

## StateReasonType

Describes a state change.

## Ancestors

- [DescribeImagesResponseItemType](#) (p. 447)
- [RunningInstancesItemType](#) (p. 505)

## Relevant Operations

- [DescribeImages](#) (p. 192)
- [DescribeInstances](#) (p. 202)
- [RunInstances](#) (p. 416)

## Contents

### **code**

The reason code for the state change.

Type: String



Valid values: `Server.InsufficientInstanceCapacity` | `Server.InternalError` | `Server.SpotInstanceTermination` | `Client.InstanceInitiatedShutdown` | `Client.InternalError` | `Client.InvalidSnapshot.NotFound` | `Client.UserInitiatedShutdown` | `Client.VolumeLimitExceeded`

**message**

The message for the state change.

Type: String

**Server.SpotInstanceTermination**

A Spot Instance was terminated due to an increase in the market price.

**Server.InternalError**

An internal error occurred during instance launch, resulting in termination.

**Server.InsufficientInstanceCapacity**

There was insufficient instance capacity to satisfy the launch request.

**Client.InternalError**

A client error caused the instance to terminate on launch.

**Client.InstanceInitiatedShutdown**

The instance initiated shutdown by a shutdown -h command issued from inside the instance.

**Client.UserInitiatedShutdown**

The instance was shut down by a user via an API call.

**Client.VolumeLimitExceeded**

The volume limit was exceeded.

**Client.InvalidSnapshot.NotFound**

The specified snapshot was not found.

## SubnetType

Describes a subnet.

### Ancestors

- SubnetSetType

### Relevant Operations

- [CreateSubnet](#) (p. 109)
- [DescribeSubnets](#) (p. 289)

### Contents

**subnetId**

The ID of the subnet.

Type: String

**state**

The current state of the subnet.

Type: String

Valid values: `pending` | `available`

<b>vpcId</b>	The ID of the VPC the subnet is in. Type: String
<b>cidrBlock</b>	The CIDR block assigned to the subnet. Type: String
<b>availableIpAddressCount</b>	The number of unused IP addresses in the subnet (the IP addresses for any stopped instances are considered unavailable). Type: Integer
<b>availabilityZone</b>	The Availability Zone of the subnet. Type: String
<b>defaultForAz</b>	Indicates whether this is the default subnet for the Availability Zone. Type: Boolean
<b>mapPublicIpOnLaunch</b>	Indicates whether instances launched in this subnet receive a public IP address. Type: Boolean
<b>tagSet</b>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 502)

## TagSetItemType

Describes a tag.

### Relevant Operations

- [DescribeTags](#) (p. 293)

### Contents

<b>resourceId</b>	The ID of the resource. For example, <code>ami-1a2b3c4d</code> . Type: String
<b>resourceType</b>	The type of resource. Type: String Valid values: <code>customer-gateway</code>   <code>dhcp-options</code>   <code>image</code>   <code>instance</code>   <code>internet-gateway</code>   <code>network-acl</code>   <code>network-interface</code>   <code>reserved-instances</code>   <code>route-table</code>   <code>security-group</code>   <code>snapshot</code>   <code>spot-instances-request</code>   <code>subnet</code>   <code>volume</code>   <code>vpc</code>   <code>vpn-connection</code>   <code>vpn-gateway</code>
<b>key</b>	The key of the tag. Type: String
<b>value</b>	The value of the tag.

Type: String

## UserDataTypes

Specifies user data.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 483)

### Relevant Operations

- [DescribeSpotInstanceRequests](#) (p. 277)
- [RequestSpotInstances](#) (p. 394)
- [RunInstances](#) (p. 416)

### Contents

#### **data**

The Base64-encoded MIME user data made available to the instance(s) in the reservation.

Type: String

## UserGroupPairType

Describes a security group and AWS account ID pair.

### Ancestors

- [UserGroupPairSetType](#)

### Relevant Operations

- [AuthorizeSecurityGroupEgress](#) (p. 32)
- [AuthorizeSecurityGroupIngress](#) (p. 35)
- [DescribeSecurityGroups](#) (p. 265)
- [RevokeSecurityGroupEgress](#) (p. 410)
- [RevokeSecurityGroupIngress](#) (p. 413)

### Contents

#### **userId**

The ID of an AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

**groupId**

The ID of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

**groupName**

The name of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

## VolumeStatusItemType

Describes the volume status.

### Ancestors

- [VolumeStatusSetType](#)

### Relevant Operation

- [DescribeVolumeStatus](#) (p. 305)

### Contents

**volumeId**

The volume ID.

Type: String

**availabilityZone**

The Availability Zone of the volume.

Type: String

**volumeStatus**

The volume status. The status of each volume is wrapped in an `item` element.

Type: [VolumeStatusInfoType](#) (p. 517).

**eventSet**

A list of events associated with the volume. Each event is wrapped in an `item` element.

Type: [VolumeStatusEventItemType](#) (p. 519).

**actionSet**

The details of the action. Each action detail is wrapped in an `item` element.

Type: [VolumeStatusActionItemType](#) (p. 519).

## VolumeStatusInfoType

Describes the status of a volume.

## Ancestors

- [VolumeStatusItemType](#)

## Relevant Operation

- [DescribeVolumeStatus](#) (p. 305)

## Contents

### **status**

The status of the volume.

Type: String

Valid values : `ok` | `impaired` | `insufficient-data`

### **details**

The details of the volume status. Each volume status detail is wrapped in an `item` type.

Type: [VolumeStatusDetailsItemType](#) (p. 518).

# VolumeStatusDetailsItemType

Describes a volume status.

## Ancestors

- [VolumeStatusInfoType](#)

## Relevant Operation

- [DescribeVolumeStatus](#) (p. 305)

## Contents

### **name**

The name of the volume status.

Type: String

Valid values: `io-enabled` | `io-performance`

### **status**

The intended status of the volume status.

Type: String

Valid values for `io-enabled`: `passed` | `failed`

Valid values for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`

## VolumeStatusEventItemType

Describes a volume status event.

### Ancestors

- VolumeStatusItemType

### Relevant Operation

- [DescribeVolumeStatus](#) (p. 305)

### Contents

**eventType**

The type of this event.

Type: String

**eventId**

The ID of this event.

Type: String

**description**

A description of the event.

Type: String

**notBefore**

The earliest start time of the event.

Type: DateTime

**notAfter**

The latest end time of the event.

Type: DateTime

## VolumeStatusActionItemType

Describes a volume status action code.

### Ancestors

- VolumeStatusItemType

### Relevant Operation

- [DescribeVolumeStatus](#) (p. 305)

## Contents

### **code**

The code identifying the action, for example, `enable-volume-io`.

Type: String

### **eventType**

The event type associated with this action.

Type: String

### **eventId**

The ID of the event associated with this action.

Type: String

### **description**

A description of the action.

Type: String

## VpcType

Describes a VPC.

## Ancestors

- [VpcSetType](#)

## Relevant Operations

- [CreateVpc](#) (p. 116)
- [DescribeVpcs](#) (p. 312)

## Contents

### **vpcId**

The ID of the VPC.

Type: String

### **state**

The current state of the VPC.

Type: String

Valid values: `pending` | `available`

### **cidrBlock**

The CIDR block for the VPC.

Type: String

### **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

### **tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

**instanceTenancy**

The allowed tenancy of instances launched into the VPC.

Type: String

Valid values: default | dedicated

**isDefault**

Indicates whether the VPC is the default VPC.

Type: Boolean

## VpnConnectionOptionsResponseType

Describes VPN connection options.

### Relevant Operations

- [CreateVpnConnection](#) (p. 118)
- [DescribeVpnConnections](#) (p. 315)

### Contents

**staticRoutesOnly**

Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

## VpnConnectionType

Describes a VPN connection.

### Ancestors

- [VpnConnectionSetType](#)

### Relevant Operations

- [CreateVpnConnection](#) (p. 118)
- [DescribeVpnConnections](#) (p. 315)

### Contents

**vpnConnectionId**

The ID of the VPN connection.

Type: String



**state**

The current state of the VPN connection.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**customerGatewayConfiguration**

The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the `CreateVpnConnection` response; however, it's present in the `DescribeVpnConnections` response only if the VPN connection is in the `pending` or `available` state.

Type: String

**type**

The type of VPN connection.

Type: String

Valid values: `ipsec.1`

**customerGatewayId**

The ID of the customer gateway at your end of the VPN connection.

Type: String

**vpnGatewayId**

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

**vgwTelemetry**

The virtual private gateway. Each gateway is wrapped in an `item` element.

Type: [VpnTunnelTelemetryType](#) (p. 524)

**options**

The option set describing the VPN connection.

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

**routes**

The set of static routes associated with a VPN connection.

Type: [VpnStaticRouteType](#) (p. 523)

## VpnGatewayType

Describes a virtual private gateway.

### Ancestors

- [VpnGatewaySetType](#)

### Relevant Operations

- [CreateVpnGateway](#) (p. 123)
- [DescribeVpnGateways](#) (p. 319)

## Contents

### **vpnGatewayId**

The ID of the virtual private gateway.

Type: String

### **state**

The current state of the virtual private gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

### **type**

The type of VPN connection the virtual private gateway supports.

Type: String

Valid values: `ipsec.1`

### **availabilityZone**

The Availability Zone where the virtual private gateway was created.

Type: String

### **attachments**

Any VPCs attached to the virtual private gateway, each one wrapped in an `item` element.

Type: [AttachmentType](#) (p. 439)

### **tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 502)

## VpnStaticRouteType

Describes a static route for a VPN connection.

## Ancestors

- [VpnStaticRoutesSetType](#)

## Relevant Operations

- [CreateVpnConnection](#) (p. 118)
- [DescribeVpnConnections](#) (p. 315)

## Contents

### **destinationCidrBlock**

The CIDR block associated with the local subnet of the customer data center.

Type: String

### **source**

Indicates how the routes were provided.

Type: String

Valid value: `Static`

**state**

The current state of the static route.

Type: String

Valid values: pending | available | deleting | deleted

## VpnTunnelTelemetryType

Describes telemetry for a VPN tunnel.

### Ancestors

- VgwTelemetryType

### Relevant Operations

- [CreateVpnConnection](#) (p. 118)
- [DescribeVpnConnections](#) (p. 315)

### Contents

**outsideIpAddress**

The Internet-routable IP address of the virtual private gateway's outside interface.

Type: String

**status**

The status of the VPN tunnel.

Type: String

Valid values: UP | DOWN

**lastStatusChange**

The date and time of the last change in status.

Type: DateTime

**statusMessage**

If an error occurs, a description of the error.

Type: String

**acceptedRouteCount**

The number of accepted routes.

Type: Integer

# Common Query Parameters

Most Amazon EC2 API actions support the parameters described in the following table.

Name	Description	Required
<i>Action</i>	The action to perform. Example: RunInstances	Yes
<i>Version</i>	The API version to use, as specified in the WSDL file. Example: 2013-07-15	Yes
<i>AWSSessionToken</i>	The access key ID for the request sender. This identifies the account which will be charged for usage of the service. The account that's associated with the access key ID must be signed up for Amazon EC2, or the request isn't accepted. AKIAIOSFODNN7EXAMPLE	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 <code>DryRunOperation</code> ; otherwise, it returns <code>UnauthorizedOperation</code> .	No
<i>Timestamp</i>	The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see <a href="#">ISO 8601</a> . Example: 2006-07-07T15:04:56Z	Yes
<i>Expires</i>	The date and time at which the signature included in the request expires, in the format YYYY-MM-DDThh:mm:ssZ. Example: 2006-07-07T15:04:56Z	Yes
<i>SecurityToken</i>	The temporary security token obtained through a call to AWS Security Token Service. Default: None Type: String	No

Name	Description	Required
<i>Signature</i>	The request signature. For more information, see <a href="#">Signature Version 2 Signing Process</a> in the <i>Amazon Web Services General Reference</i> . Example: Qnp14Qk/7tINHzfXCiT7VEEXAMPLE	Yes
<i>SignatureMethod</i>	The hash algorithm you use to create the request signature. Valid values: HmacSHA256   HmacSHA1. For more information, see <a href="#">Signature Version 2 Signing Process</a> in the <i>Amazon Web Services General Reference</i> . Example: HmacSHA256	Yes
<i>SignatureVersion</i>	The signature version you use to sign the request. Set this value to 2. For more information, see <a href="#">Signature Version 2 Signing Process</a> in the <i>Amazon Web Services General Reference</i> . Example: 2	Yes

**Note**

The *Timestamp* parameter can be used instead of *Expires*. Requests must include either *Timestamp* or *Expires*, but cannot contain both.

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.

# Granting IAM Users Required Permissions for Amazon EC2 Resources

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By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API. To allow IAM users to create or modify resources and perform tasks, you must create IAM policies that grant IAM users permissions for the specific resources and API actions they'll need to use, and then attach those policies to the IAM users or groups that require those permissions.

For more information, see [IAM Policies for Amazon EC2](#) in the *Amazon Elastic Compute Cloud 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.

The following sections describe the resources that are 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 modify particular Amazon EC2 resources. (We'll add support for additional actions, ARNs, and condition keys later in 2013.)

## Topics

- [Instances](#) (p. 527)
- [Security Groups](#) (p. 529)
- [Volumes](#) (p. 529)

## Instances

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">RebootInstances</a> (p. 374)		

**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
<b>Action:</b> <a href="#">StartInstances</a> (p. 424)		
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
<b>Action:</b> <a href="#">StopInstances</a> (p. 426)		
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
<b>Action:</b> <a href="#">TerminateInstances</a> (p. 428)		
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

## Security Groups

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">AuthorizeSecurityGroupEgress</a> (p. 32)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">AuthorizeSecurityGroupIngress</a> (p. 35)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">DeleteSecurityGroup</a> (p. 144)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">RevokeSecurityGroupEgress</a> (p. 410)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc
<b>Action:</b> <a href="#">RevokeSecurityGroupIngress</a> (p. 413)		
Security group	<i>arn:aws:ec2:region:account:security-group/security-group-id</i>	ec2:Region ec2:ResourceTag/tag-key ec2:Vpc

## Volumes

Resource	ARN Format	Condition Keys
<b>Action:</b> <a href="#">AttachVolume</a> (p. 28)		
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



**Amazon Elastic Compute Cloud API Reference**  
**Volumes**

Resource	ARN Format	Condition Keys
Volume	<i>arn:aws:ec2:region:account:volume/volume-id</i>	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/tag-key ec2:Volumelops ec2:VolumeSize ec2:VolumeType
<b>Action:</b> <a href="#">DeleteVolume</a> (p. 154)		
Volume	<i>arn:aws:ec2:region:account:volume/volume-id</i>	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/tag-key ec2:Volumelops ec2:VolumeSize ec2:VolumeType
<b>Action:</b> <a href="#">DetachVolume</a> (p. 326)		
Instance	<i>arn:aws:ec2:region:account:instance/instance-id</i>	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/tag-key ec2:RootDeviceType ec2:Tenancy
Volume	<i>arn:aws:ec2:region:account:volume/volume-id</i>	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/tag-key ec2:Volumelops ec2:VolumeSize ec2:VolumeType

# Error Codes

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## Topics

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- [Common Causes of Client Errors](#) (p. 531)
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## Overview

There are two types of error codes: client and server.

Client error codes suggest that the error was caused by something the client did, such as use an action or resource he or she doesn't have permission to use, or specify an identifier that is not valid. In the Query API, these errors are accompanied by a 400-series HTTP response code.

Server error codes suggest a server-side issue caused the error. In the Query API, these errors are accompanied by a 500-series HTTP response code.

## 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.
- **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](#).
- **Use a sleep interval between request rates:** Amazon EC2 API requests are throttled to help maintain the performance of the service. For more information, see [Query API Request Rate](#).

- **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. For more information, see [Controlling Access](#).
- **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.

## Summary of Client Error Codes

Error Code	Description
<code>AddressLimitExceeded</code>	<p>You've reached the limit on the number of Elastic IP addresses that you can allocate.</p> <p>For more information, see <a href="#">Elastic IP Address Limit</a>. If you need additional Elastic IP addresses, complete the <a href="#">Amazon EC2 Elastic IP Address Request Form</a>. If you need additional Elastic IP addresses for your VPCs, complete the <a href="#">Amazon VPC Limits form</a>.</p>
<code>AttachmentLimitExceeded</code>	<p>You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.</p>
<code>AuthFailure</code>	<p>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.</p>
<code>Blocked</code>	<p>Your account is currently blocked. Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.</p>
<code>CannotDelete</code>	<p>You cannot delete the 'default' security group in your VPC, but you can change its rules. For more information, see <a href="#">Amazon EC2 Security Groups</a>.</p>
<code>ConcurrentTagAccess</code>	<p>You can't run simultaneous commands to modify a tag for a specific resource. Allow sufficient wait time for the previous request to complete, then retry your request. For more information, see <a href="#">Error Retries and Exponential Backoff in AWS</a>.</p>
<code>CustomerGatewayLimitExceeded</code>	<p>You've reached the limit on the number of customer gateways you can create for the region. For more information, see <a href="#">Amazon VPC Limits</a>. To request an increase on your customer gateway limit, complete the <a href="#">Amazon VPC Limits form</a>.</p>

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

Error Code	Description
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).
DryRunOperation	The user has the required permissions, so the request would have succeeded, but the <code>DryRun</code> parameter was used.
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.
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.
IncorrectInstanceState	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.  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.
IncorrectState	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.
InstanceLimitExceeded	You've reached the limit on the number of instances you can run concurrently. The limit depends on the instance type. For more information, see <a href="#">How many instances can I run in Amazon EC2</a> . If you need additional instances, complete the <a href="#">Amazon EC2 Instance Request Form</a> .
InsufficientInstanceCapacity	There is insufficient capacity available for the requested instance type. The returned message provides additional information about how to solve this problem.
InsufficientReservedInstancesCapacity	There is insufficient capacity for the requested Reserved Instances.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<code>InternetGatewayLimitExceeded</code>	You've reached the limit on the number of Internet gateways that you can create. For more information, see <a href="#">Amazon VPC Limits</a> . To request an increase on the Internet gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .
<code>InvalidAddress.NotFound</code>	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.
<code>InvalidAddressID.NotFound</code>	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.
<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.
<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 or a route table) 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.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

Error Code	Description
<code>InvalidBlockDeviceMapping</code>	A block device mapping parameter is invalid. The returned message indicates the invalid value.
<code>InvalidConversionTaskId</code>	The specified conversion task ID (for instance or volume import) is not valid.
<code>InvalidCustomerGateway.DuplicateIpAddress</code>	There is a conflict among the specified gateway IP addresses.
<code>InvalidCustomerGatewayID.NotFound</code>	The specified customer gateway does not exist.
<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>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 a group with the same name as an existing security group in the same VPC, or the same region (EC2-Classic).
<code>InvalidGroupId.Malformed</code>	The specified security group ID is not valid. Ensure that you provide the full security group ID in the request, in the form <code>sg-xxxxxxx</code> .
<code>InvalidGroup.InUse</code>	The specified security group can't be deleted because it's in use by another security group. You can remove dependencies by modifying or deleting rules in the affected security groups.
<code>InvalidGroup.NotFound</code>	<p>The specified security group does not exist. Ensure that you provide the full security group ID in the request, in the form <code>sg-xxxxxxx</code>.</p> <p>This error may occur because the ID of a recently created security group has not propagated through the system. For more information, see <a href="#">Eventual Consistency</a>.</p> <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>
<code>InvalidGroup.Reserved</code>	The name 'default' is reserved, and cannot be used to create a new security group. You also cannot delete the default EC2-Classic security group, but you can change its rules. For more information, see <a href="#">Amazon EC2 Security Groups</a> .

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

Error Code	Description
<code>InvalidInstanceAttributeValue</code>	The specified instance attribute value is not valid. This error is most commonly encountered when trying to set the <code>InstanceType/--instance-type</code> attribute to an unrecognized value.
<code>InvalidID</code>	The specified ID for the resource you are trying to tag is invalid. Ensure that you provide the full resource ID; for example, <code>ami-2bb65342</code> for an AMI.
<code>InvalidInstanceID</code>	<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>
<code>InvalidInstanceID.Malformed</code>	The specified instance ID is not valid. Ensure that you provide the full instance ID in the request, in the form <code>i-xxxxxx</code> .
<code>InvalidInstanceID.NotFound</code>	The specified instance does not exist. Ensure that you have indicated the region in which the instance is located, if it's not in the default region. This error may occur because the ID of a recently created instance has not propagated through the system. For more information, see <a href="#">Eventual Consistency</a> .
<code>InvalidInterface.IpAddressLimitExceeded</code>	The number of private IP addresses for a specified network interface exceeds the limit for the type of instance you are trying to launch. For more information about the maximum number of private IP addresses per ENI, see <a href="#">Private IP addresses per ENI</a> .
<code>InvalidInternetGatewayID.NotFound</code>	The specified Internet gateway does not exist. Ensure that you specify the region in which the Internet gateway is located, if it's not in the default region.
<code>InvalidIPAddress.InUse</code>	The specified IP address is already in use. If you are trying to release an address, you must first disassociate it from the instance.
<code>InvalidKey.Format</code>	The key pair is not specified in a valid OpenSSH public key format.
<code>InvalidKeyPair.Duplicate</code>	The key pair name already exists in that region. If you are creating or importing a key pair, ensure that you use a unique name.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<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.
<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>	You used an invalid ID for the network interface. Ensure that you use the attachment ID rather than the network interface ID, in the form <i>eni-attach-xxxxxx</i> .
<code>InvalidNetworkInterface.InUse</code>	The specified interface is currently in use and cannot be deleted. Ensure that you have detached the network interface first.
<code>InvalidNetworkInterfaceID.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>InvalidParameter</code>	A parameter specified in a request is invalid, is unsupported, or cannot be used. The returned message provides an explanation of the error value. For example, if you are launching an instance, you can't specify a security group and subnet that are in different VPCs.
<code>InvalidParameterCombination</code>	Indicates an invalid combination of parameters, or a missing parameter. For example, trying to terminate an instance without specifying the instance ID.
<code>InvalidParameterValue</code>	A value specified in a parameter is invalid, is unsupported, or cannot be used. Ensure that you specify a resource by using its full ID. The returned message provides an explanation of the error value.
<code>InvalidPermission.Duplicate</code>	The specified inbound or outbound rule already exists for that security group.
<code>InvalidPermission.Malformed</code>	The specified security group rule is malformed. If you are specifying an IP address range, ensure that you use CIDR notation; for example, 203.0.113.0/24.
<code>InvalidPermission.NotFound</code>	The specified rule does not exist in this security group.
<code>InvalidPlacementGroup.Duplicate</code>	The specified placement group already exists in that region.



**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<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>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.NotFound</code>	The specified route does not exist in the route table.
<code>InvalidRouteTableID.NotFound</code>	The specified route table does not exist. Ensure that you have specified 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>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>InvalidSubnet.Conflict</code>	The specified CIDR block conflicts with that of another subnet in your VPC.
<code>InvalidSubnetID.NotFound</code>	The specified subnet does not exist.
<code>InvalidUserID.Malformed</code>	The user ID is not valid. You must specify an AWS account ID or one of the special values accepted by <code>owner</code> or <code>executableBy</code> in the <code>DescribeImages</code> call.
<code>InvalidVolumeID.Duplicate</code>	The EBS volume already exists.
<code>InvalidVolumeID.Malformed</code>	The specified volume ID is not valid.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>
<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.
<code>InvalidVpnConnectionID.NotFound</code>	The specified VPN connection does not exist.
<code>InvalidVpnGatewayID.NotFound</code>	The specified virtual private gateway does not exist.
<code>InvalidZone.NotFound</code>	The specified Availability Zone does not exist.
<code>LegacySecurityGroup</code>	You must delete the 2009-07-15-default security group before you can attach an Internet gateway.
<code>MaxIOPSLimitExceeded</code>	You've reached the limit on your IOPS usage for that region. If you need to increase your volume limit, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
<code>MaxSpotInstanceCountExceeded</code>	You've reached the limit on the number of Spot Instances that you can launch. The limit depends on the instance type. For more information, see <a href="#">How many instances can I run in Amazon EC2</a> . If you need additional instances, complete the <a href="#">Amazon EC2 Instance Request Form</a> .
<code>MissingParameter</code>	The request is missing a required parameter. Ensure that you have supplied all the required parameters for the request; for example, the resource ID.
<code>NetworkAclEntryAlreadyExists</code>	The specified rule number already exists in this network ACL.
<code>NetworkAclEntryLimitExceeded</code>	You've reached the limit on the number of network ACL entries that you can add to the ACL.
<code>NetworkAclLimitExceeded</code>	You've reached the limit on the number of network ACLs that you can create.
<code>NonEBSInstance</code>	The instance specified 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>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.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

Error Code	Description
OptInRequired	You are not authorized to use the requested service. Ensure that you have subscribed to the service you are trying to use. If you are new to AWS, your account might take some time to be activated while your credit card details are being verified. This error message can apply to Amazon EC2, or individual AWS Marketplace product codes.
PendingSnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots you can have in the pending state.
PendingVerification	The account is pending verification. If you have questions, contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> .
PrivateIpAddressLimitExceeded	You've reached the limit on the number of private IP addresses that you can assign to the specified network interface for that type of instance. For more information about the maximum number of private IP addresses per ENI, see <a href="#">Private IP addresses per ENI</a> .
RequestLimitExceeded	The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account. For best results, use an increasing or variable sleep interval between requests. For more information, see <a href="#">Query API Request Rate</a> .
ReservedInstancesLimitExceeded	Your current quota does not allow you to purchase the required number of Reserved Instances.
Resource.AlreadyAssociated	The specified gateway is already attached, or the specified subnet is already associated with another object.
ResourceLimitExceeded	You have exceeded an Amazon EC2 resource limit. For example, you might have reached the maximum number of import conversion tasks allowed.
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.
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-Classic or EC2-VPC. For more information, see <a href="#">Security Group Rules</a> .
SecurityGroupLimitExceeded	You've reached the limit on the number of security groups that you can create. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Creating Your Own Security Groups</a> .

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

Error Code	Description
SecurityGroupsPerInstanceLimitExceeded	You've reached the limit on the number of security groups that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Instance Group Membership</a> .
SecurityGroupsPerInterfaceLimitExceeded	You've reached the limit on the number of security groups you can associate with the specified network interface. You are limited to five security groups per network interface.
SignatureDoesNotMatch	The request signature that Amazon has does not match the signature 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.
SubnetLimitExceeded	You've reached the limit on the number of subnets that you can create for the VPC.
TagLimitExceeded	You've reached the limit on the number of tags that you can assign to the specified resource. For more information, see <a href="#">Tag Restrictions</a> .
UnauthorizedOperation	You are not authorized to perform this operation. Check your IAM policies, and ensure that you are using the correct access keys. For more information, see <a href="#">Controlling Access</a> .
UnknownParameter	An unknown or unrecognized parameter was supplied. Requests that could cause this error include supplying a misspelled parameter or a parameter that is not supported for the specified API version.
UnknownVolumeType	The specified volume type is unsupported. The supported volume types are <code>standard</code> and <code>io1</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 already attached to an instance. Ensure that the specified volume is in an 'available' state.
VolumeLimitExceeded	You've reached the limit on the number of Amazon EBS volumes that you can create.

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 <a href="#">Amazon VPC Limits</a> . To request an increase on your VPC limit, complete the <a href="#">Amazon VPC Limits form</a> .
VpnConnectionLimitExceeded	You've reached the limit on the number of VPN connections that you can create. For more information about limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your VPN connection limit, complete the <a href="#">Amazon VPC Limits form</a> .
VpnGatewayAttachmentLimitExceeded	You've reached the limit on the number of VPCs that can be attached to the specified virtual private gateway.
VpnGatewayLimitExceeded	You've reached the limit on the number of virtual private gateways that you can create. For more information about limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your virtual private gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .

## Summary of Server Error Codes

Error Code	Description
InsufficientAddressCapacity	Not enough available addresses to satisfy your minimum request. Reduce the number of addresses you are requesting or wait for additional capacity to become available.
InsufficientInstanceCapacity	Not enough available instances to satisfy your minimum request. Reduce the number of instances in your request or wait for additional capacity to become available. The returned message might also give specific guidance on how to solve the problem.
InsufficientReservedInstanceCapacity	Not enough available Reserved Instances to satisfy your minimum request. Reduce the number of Reserved Instances in your request or wait for additional capacity to become available.
InternalServerError	Internal Error. This error should not occur. If this persists, please contact us with details by posting a message on the <a href="#">AWS forums</a> .
Unavailable	The server is overloaded and can't handle the request.

## Request Error Response

The following shows the structure of a request error response.

```
<Response>
  <Errors>
    <Error>
      <Code>Error code text</Code>
      <Message>Error message</Message>
    </Error>
  </Errors>
  <RequestID>request ID</RequestID>
</Response>
```

## Example Error Response Request

The following shows an example of an error response.

```
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-4cbc822a' does not exist</Message>
    </Error>
  </Errors>
  <RequestID>ea966190-f9aa-478e-9ede-cb5432daacc0</RequestID>
</Response>
```

## Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that when you run an API command, the result may not be immediately visible to subsequent API commands, which can result in an error.

For more information about eventual consistency and how to manage it, see [Eventual Consistency](#).