
Amazon Elastic Compute Cloud

API Reference

API Version 2012-08-15



Amazon Elastic Compute Cloud: API Reference

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Welcome

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.

Note

This guide also includes the actions for Amazon Virtual Private Cloud (Amazon VPC). For more information about this service, go to the [Amazon Virtual Private Cloud User Guide](#).

This reference has a single set of topics that you can reference for both the Query and SOAP APIs (the actions are the same for both APIs). The topic for each action shows the Query API request parameters and the XML response (which is the same for both APIs). The XML request elements for the SOAP API have names that are similar to the Query API parameter names. You can view the XML request elements in the WSDL, or look at the proxy classes that a SOAP toolkit generates from the WSDL.

How Do I?	Relevant Topics
Download the current WSDL.	Ec2.wsdl (2012-08-15)
Learn about using the API.	Making API Requests
Get a list of the Amazon EC2 actions by function.	List of Actions by Function (p. 3)
Get an alphabetical list of the Amazon EC2 actions.	Actions (p. 9)
Get an alphabetical list of the Amazon EC2 data types.	Data Types (p. 433)
Get a list of common parameters for the Query actions.	Common Query Parameters (p. 534)
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Related Topics

- [Amazon EC2 product page](#)

- [Amazon Elastic Compute Cloud User Guide](#)
- [Amazon Elastic Compute Cloud Command Line Reference](#)

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AllocateAddress

Description

For EC2 Elastic IP addresses: Acquires an Elastic IP address for use with your Amazon Web Services (AWS) account. For more information about EC2 Elastic IP addresses, see [Instance Addressing](#) in the *Amazon Elastic Compute Cloud User Guide*.

For VPC addresses: Acquires an Elastic IP address for use with your VPC. For information about VPC addresses and how they differ from EC2 addresses, see the [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>Domain</i>	Set to <code>vpc</code> to allocate the address to your VPC. Type: String Default: Address is standard (allocated to EC2) Valid values: <code>vpc</code> Condition: Required when allocating an address to a VPC	Conditional

Response Elements

The elements in the following table are wrapped in an `AllocateAddressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>publicIp</code>	The Elastic IP address. Type: <code>xsd:string</code>
<code>domain</code>	Specifies whether this Elastic IP address is for instances in EC2 (<code>standard</code>) or instances in a VPC. Type: <code>xsd:string</code> Valid values: <code>standard</code> <code>vpc</code>
<code>allocationId</code>	The ID that AWS assigns to represent the allocation of the address for use with Amazon VPC. Returned only for VPC elastic IP addresses. Type: <code>xsd:string</code>

Examples

Example Request

This example returns an Elastic IP address for use with the account.

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

Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <publicIp>192.0.2.1</publicIp>  
</AllocateAddressResponse>
```

Example Request

This example returns a VPC Elastic IP address for use with Amazon VPC.

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

Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <publicIp>198.51.100.1</publicIp>  
  <domain>vpc</domain>  
  <allocationId>eipalloc-5723d13e</allocationId>  
</AllocateAddressResponse>
```

Related Operations

- [DescribeAddresses](#) (p. 162)
- [ReleaseAddress](#) (p. 376)
- [AssociateAddress](#) (p. 18)
- [DisassociateAddress](#) (p. 332)

AssignPrivateIpAddresses

Description

Assigns one or more secondary private IP addresses to a network interface in Amazon VPC. You can specify one or more specific secondary IP addresses that you want to assign, or you can specify a 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 on Amazon EC2 instance types, see [Available Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Elastic IP addresses for Amazon VPC, see [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

This action is only available in Amazon VPC.

Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The network interface to which the IP address will be assigned. Type: String Default: None	Yes
<i>PrivateIpAddress.n</i>	Assigns the specified IP address as secondary IP address to the network interface. This option can be used multiple times to assign multiple secondary private IP addresses to network interface. Type: <code>AssignPrivateIpAddressesSetItemRequestType</code> Default: None Condition: You cannot specify this parameter when also specifying <code>SecondaryPrivateIpAddressCount</code> .	Conditional
<i>SecondaryPrivateIpAddressCount</i>	The number of secondary IP addresses to assign to the network interface. Type: Integer Default: None Condition: You cannot specify this parameter when also specifying <code>PrivateIPAddresses.n</code> .	Conditional
<i>AllowReassignment</i>	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	No

Response Elements

The elements in the following table are wrapped in an `AssignPrivateIpAddressesResponse` structure.

Name	Description
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 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</AssignPrivateIpAddresses>
```

Example Request

This example assigns two secondary private IP addresses to the network interface. The IP addresses are automatically assigned 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</AssignPrivateIpAddresses>
```

Related Operations

- [DescribeAddresses](#) (p. 162)
- [ReleaseAddress](#) (p. 376)

- [AssociateAddress](#) (p. 18)
- [DisassociateAddress](#) (p. 332)

AssociateAddress

Description

For EC2 Elastic IP addresses: Associates an Elastic IP address with an instance (not running in a VPC). If the IP address is currently assigned to another instance, the IP address is assigned to the new instance. For more information about EC2 Elastic IP addresses, see [Instance Addressing](#) in the *Amazon Elastic Compute Cloud User Guide*.

For VPC addresses: Associates a VPC Elastic IP address with an instance in your VPC. If the IP address is currently assigned to another instance, Amazon EC2 returns an error unless you specify the *AllowReassociation* parameter.

For information about VPC addresses and how they differ from EC2 addresses, see [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

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

Request Parameters

Name	Description	Required
<i>PublicIp</i>	The Elastic IP address to assign to the instance. Type: String Default: None Condition: Required for EC2 Elastic IP addresses.	Conditional
<i>InstanceId</i>	The instance to associate with the IP address. Type: String Default: None	Conditional
<i>AllocationId</i>	The allocation ID that AWS returned when you allocated the Elastic IP address for use with Amazon VPC. Type: String Default: None Condition: Required for VPC Elastic IP addresses.	No
<i>NetworkInterfaceId</i>	The network interface ID to associate with an instance. Association fails when specifying an instance ID unless exactly one interface is attached. Type: String Default: None Condition: If the instance has more than one network interface, you must specify a network interface ID. Available for VPC Elastic IP addresses only.	No

Name	Description	Required
<i>PrivateIpAddress</i>	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. This is only available in Amazon VPC. Type: String Default: None	No
<i>AllowReassociation</i>	Allows an Elastic IP address that is already associated with another network interface or instance to be re-associated with the specified instance or interface. If the Elastic IP address is associated, and this option is not specified, the operation fails. This is only available in Amazon VPC. Type: Boolean Default: <i>false</i> if not specified	No

Response Elements

The elements in the following table are wrapped in an `AssociateAddressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>
<code>associationId</code>	The ID that AWS provides to represent the association of the address with an instance. Returned only for VPC Elastic IP addresses. Type: <code>xsd:string</code>

Examples

Example Request

This example associates an EC2 Elastic IP address with an instance.

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

Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>
```

Example Request

This example associates a VPC Elastic IP address with an instance in your VPC and allows the Elastic IP address to be re-assigned to this instance if it is currently assigned to another instance or 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

Related Operations

- [AllocateAddress](#) (p. 13)
- [DescribeAddresses](#) (p. 162)
- [ReleaseAddress](#) (p. 376)
- [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. If you want, you can explicitly renew the lease using the operating system on the instance.

For more information about the supported DHCP options and using them with Amazon VPC, see [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>DhcpOptionsId</i>	The ID of the DHCP options you want to associate with the VPC, or <code>default</code> if you want the VPC to use no DHCP options. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC you want to associate the DHCP options with. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `AssociateDhcpOptionsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example associates the DHCP options with ID `dopt-7a8b9c2d` with the VPC with 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/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

Example Request

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

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

Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

Related Operations

- [CreateDhcpOptions](#) (p. 59)
- [DescribeDhcpOptions](#) (p. 178)
- [DeleteDhcpOptions](#) (p. 122)

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 if you want 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

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table. Type: String Default: None	Yes
<i>SubnetId</i>	The ID of the subnet. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `AssociateRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>associationId</code>	The ID that AWS provides to represent the association of the route table and the subnet. Type: xsd:string Example: rtbassoc-f8ad4891

Examples

Example Request

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

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

Example Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <associationId>rtbassoc-f8ad4891</associationId>  
</AssociateRouteTableResponse>
```

Related Operations

- [CreateRouteTable](#) (p. 91)
- [DisassociateRouteTable](#) (p. 334)
- [DescribeRouteTables](#) (p. 262)
- [ReplaceRouteTableAssociation](#) (p. 385)

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

Name	Description	Required
<i>InternetGatewayId</i>	The ID of the Internet gateway. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `AttachInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

The example attaches the Internet gateway with ID `igw-eaad4883` to the VPC with 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/2012-08-15/">
```



```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<return>>true</return>  
</AttachInternetGatewayResponse>
```

Related Operations

- [CreateInternetGateway](#) (p. 68)
- [DeleteInternetGateway](#) (p. 124)
- [DetachInternetGateway](#) (p. 322)
- [DescribeInternetGateways](#) (p. 220)

AttachNetworkInterface

Description

Attaches a network interface to an instance.

Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The ID of the network interface to attach. Type: String Default: None	Yes
<i>InstanceId</i>	The ID of the instance to attach to the network interface. Type: String Default: None	Yes
<i>DeviceIndex</i>	The index of the device for the network interface attachment on the instance. Type: Integer Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `AttachNetworkInterfaceResponse` structure.

Name	Description
<code>requestId</code>	The ID of the attachment request. Type: xsd:string
<code>attachmentId</code>	The ID of the attachment. Type: xsd:string

Examples

Example Request

This example attaches an elastic network interface (ENI) `eni-ffda3197` to the specified EC2 instance `i-9cc316fe`.

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

Example Response

```
<AttachNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

Related Operations

- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 77)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

AttachVolume

Description

Attaches an Amazon EBS volume to a running 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](#).

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

Request Parameters

Name	Description	Required
<i>VolumeId</i>	The ID of the Amazon EBS volume. The volume and instance must be within the same Availability Zone. Type: String Default: None	Yes
<i>InstanceId</i>	The ID of the instance. The instance must be running. Type: String Default: None	Yes
<i>Device</i>	The device name as exposed to the instance (e.g., /dev/sdh, or xvdh). Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `AttachVolumeResponse` structure.

Name	Description
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 as exposed to the instance (e.g., /dev/sdh, or xvdh). Type: xsd:string
status	The volume 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 attaches volume `vol-4d826724` to instance `i-6058a509` and exposes it as `/dev/sdh`. For information on standard storage locations, see the [Amazon Elastic Compute Cloud User Guide](#).

```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-4d826724
&InstanceId=i-6058a509
&Device=/dev/sdh
&AUTHPARAMS
```

Example Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-4d826724</volumeId>
  <instanceId>i-6058a509</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>2008-05-07T11:51:50.000Z</attachTime>
</AttachVolumeResponse>
```

Related Operations

- [CreateVolume](#) (p. 104)
- [DeleteVolume](#) (p. 150)
- [DescribeVolumes](#) (p. 300)

- [DetachVolume](#) (p. 326)

AttachVpnGateway

Description

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

Request Parameters

Name	Description	Required
<i>VpnGatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `AttachVpnGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>attachment</code>	Information about the attachment. Type: AttachmentType (p. 438)

Examples

Example Request

This example attaches the virtual private gateway with ID `vgw-8db04f81` to the VPC with 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/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
```

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

Related Operations

- [CreateVpnGateway](#) (p. 118)
- [DescribeVpnGateways](#) (p. 318)
- [DetachVpnGateway](#) (p. 328)
- [CreateVpc](#) (p. 107)
- [CreateVpnConnection](#) (p. 109)

AuthorizeSecurityGroupEgress

Description

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

This action applies only to security groups in a VPC; it's not supported for EC2 security groups. For information about Amazon Virtual Private Cloud and VPC security groups, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

Each rule consists of the protocol (e.g., 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 instances within the security group as quickly as possible. However, a small delay might occur.

Important

For VPC security groups: You can have up to 50 rules total per group (covering both ingress and egress).

Request Parameters

Name	Description	Required
<i>GroupId</i>	The ID of the VPC security group to modify. Type: String Default: None	Yes
<i>IpPermissions.n.IpProtocol</i>	The IP protocol name or number (go to Protocol Numbers). When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, <code>tcp</code> , <code>udp</code> , or <code>icmp</code>). Type: String Valid values: <code>tcp</code> <code>udp</code> <code>icmp</code> or any protocol number (go to Protocol Numbers). Use <code>-1</code> to specify all.	Yes
<i>IpPermissions.n.FromPort</i>	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 Condition: Required for ICMP and any protocol that uses ports	Conditional

Name	Description	Required
<i>IpPermissions.n.ToPort</i>	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 Condition: Required for ICMP and any protocol that uses ports	Conditional
<i>IpPermissions.n.Groups.m.GroupId</i>	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.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	The CIDR range. Cannot be used when specifying a destination security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.	Conditional

Response Elements

The elements in the following table are wrapped in an `AuthorizeSecurityGroupEgressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if request is successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example grants your VPC security group with 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 grants your VPC security group with ID sg-1a2b3c4d access to your VPC security group with 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/2012-
08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

Related Operations

- [CreateSecurityGroup](#) (p. 93)
- [DescribeSecurityGroups](#) (p. 267)
- [RevokeSecurityGroupEgress](#) (p. 406)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [RevokeSecurityGroupIngress](#) (p. 409)
- [DeleteSecurityGroup](#) (p. 140)

AuthorizeSecurityGroupIngress

Description

Adds one or more ingress rules to a security group. This action applies to both EC2 security groups and VPC security groups. For information about VPC security groups and how they differ from EC2 security groups, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

For EC2 security groups, 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 in your account. A source group can be in your own AWS account, or another.

For VPC security groups, 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 in your VPC. The groups must all be in the same VPC.

Each rule consists of the protocol (e.g., 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 instances within the security group as quickly as possible. However, a small delay might occur.

Important

For EC2 security groups: You can have up to 100 rules per group.

For VPC security groups: You can have up to 50 rules total per group (covering both ingress and egress).

Request Parameters

Name	Description	Required
<i>UserId</i>	Deprecated	No
<i>GroupId</i>	The ID of the EC2 or VPC security group to modify. The group must belong to your account. Type: String Default: None Condition: Required for VPC security groups; can be used instead of <i>GroupName</i> for EC2 security groups	Conditional
<i>GroupName</i>	The name of the EC2 security group to modify. Type: String Default: None Condition: Can be used instead of <i>GroupId</i> for EC2 security groups	Conditional

Amazon Elastic Compute Cloud API Reference
Request Parameters

Name	Description	Required
<i>IpPermissions.n.IpProtocol</i>	<p>The IP protocol name or number (see Protocol Numbers). EC2 security groups can have rules only for TCP, UDP, and ICMP, whereas VPC security groups can have rules assigned to any protocol number.</p> <p>When you call <code>DescribeSecurityGroups</code>, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, <code>tcp</code>, <code>udp</code>, or <code>icmp</code>).</p> <p>Type: String</p> <p>Valid values for EC2 security groups: <code>tcp</code> <code>udp</code> <code>icmp</code> or the corresponding protocol number (6 17 1).</p> <p>Valid values for VPC groups: <code>tcp</code> <code>udp</code> <code>icmp</code> or any protocol number (see Protocol Numbers). Use -1 to specify all.</p>	Required
<i>IpPermissions.n.FromPort</i>	<p>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.</p> <p>Type: Integer</p> <p>Default: None</p> <p>Default: Required for ICMP and any protocol that uses ports</p>	Conditional
<i>IpPermissions.n.ToPort</i>	<p>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.</p> <p>Type: Integer</p> <p>Default: None</p> <p>Default: Required for ICMP and any protocol that uses ports</p>	Conditional
<i>IpPermissions.n.Groups.m.UserId</i>	<p>The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address.</p> <p>Type: String</p> <p>Default: None</p> <p>Condition: For EC2 security groups only. Required if modifying access for one or more source security groups.</p>	Conditional
<i>IpPermissions.n.Groups.m.GroupName</i>	<p>The name of the source security group. Cannot be used when specifying a CIDR IP address.</p> <p>Type: String</p> <p>Default: None</p> <p>Condition: Required if modifying access for one or more source security groups.</p>	Conditional

Name	Description	Required
<i>IpPermissions.n.Groups.m.GroupId</i>	The ID of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For VPC security groups only. Required if modifying access for one or more source security groups.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	The CIDR range. Cannot be used when specifying a source security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.	Conditional

Response Elements

The elements in the following table are wrapped in an `AuthorizeSecurityGroupIngressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if request is successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example is for an EC2 security group. The request grants the 192.0.2.0/24 and 198.51.100.0/24 address ranges access to your `webserv` security group on TCP port 80.

```
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 is for an EC2 security group. The request grants TCP port 80 access from the source group called `OtherAccountGroup` (in AWS account 11112223333) to your `webserv` security group.

```
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 is for a VPC security group. The request grants TCP port 80 access from the source group called *OtherGroupInMyVPC* (sg-0a5d8e02) to your *VpcWebServers* security group (sg-140ba4c8). The request requires the group IDs and not the group names. Your AWS account ID is 111122223333.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-140ba4c8
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-0a5d8e02
&IpPermissions.1.Groups.1.UserId=111122223333
&AUTHPARAMS
```

Example Response

```
<AuthorizeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</AuthorizeSecurityGroupIngressResponse>
```

Related Operations

- [CreateSecurityGroup](#) (p. 93)
- [DescribeSecurityGroups](#) (p. 267)
- [RevokeSecurityGroupIngress](#) (p. 409)
- [DeleteSecurityGroup](#) (p. 140)

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

Name	Description	Required
<i>InstanceId</i>	The ID of the instance to bundle. Type: String Default: None	Yes
<i>Storage.S3.Bucket</i>	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	Yes
<i>Storage.S3.Prefix</i>	The beginning of the file name of the AMI. Type: String Default: None	Yes
<i>Storage.S3.AWSSAccessKeyId</i>	The Access Key ID of the owner of the Amazon S3 bucket. Type: String Default: None	Yes
<i>Storage.S3.UploadPolicy</i>	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	Yes
<i>Storage.S3.UploadPolicySignature</i>	The signature of the Base64 encoded JSON document. Type: String Default: None	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


```
<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 Operations

- [CancelBundleTask](#) (p. 44)
- [DescribeBundleTasks](#) (p. 170)
- [CreateImage](#) (p. 62)

CancelBundleTask

Description

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

Request Parameters

Name	Description	Required
<i>BundleId</i>	The ID of the bundle task. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `CancelBundleTaskResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>bundleInstanceTask</code>	The bundle task. Type: BundleInstanceTaskType (p. 443)

Examples

Example Request

This example cancels the `bun-cla322b9` bundle task.

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

Example Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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>
  </bundleInstanceTask>
</CancelBundleTaskResponse>
```

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

Related Operations

- [BundleInstance](#) (p. 41)
- [DescribeBundleTasks](#) (p. 170)

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

Name	Description	Required
<i>ConversionTaskId</i>	The ID of the task. Type: String Default: None	Yes

Response Elements

Name	Description
<i>requestId</i>	The ID of the request. Type: string
<i>return</i>	Indicates whether the cancellation was successful. Type: Boolean

Examples

Example Request

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

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

Example Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```

Related Operations

- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)
- [DescribeConversionTasks](#) (p. 173)

CancelExportTask

Description

Cancels an active export task. The command 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

Name	Description	Required
<i>ExportTaskId</i>	The ID of the export task. Type: String Default: None	Yes

Response Elements

Name	Description
<i>requestId</i>	The ID of the request. Type: xsd:string
<i>return</i>	Indicates whether the cancellation was successful. Type: xsd:boolean

Examples

Example Request

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

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

Example Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/EC2UserGuide">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</CancelExportTask>
```

Related Operations

- [CreateInstanceExportTask](#) (p. 65)

- [DescribeExportTasks](#) (p. 182)

CancelReservedInstancesListing

Description

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

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

Request Parameters

Name	Description	Required
<code>reservedInstancesListingId</code>	The ID of the Reserved Instance listing to be canceled. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `CancelReservedInstancesListingResponseType` structure.

Name	Description
<code>requestId</code>	The ID of the request to cancel Reserved Instance listing. Type: String
<code>reservedInstancesListingsSet</code>	The Reserved Instance listing for cancellation. The listing information is wrapped in an <code>item</code> element. Type: DescribeReservedInstancesListingsResponseSetItem (p. 453)

Examples

Example Request

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

```
https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing
&ReservedInstancesListingId.0=3ebe97b5-f273-43b6-a204-7a18cexample
```

Example Response

The response will show `status` is *cancelled*.

```
<CancelReservedInstancesListingResponse>
  <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
```

```
<reservedInstancesListingsSet>
  <item>
    <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-
7a18cexample</reservedInstancesListingId>
    <reservedInstancesId>af9f760e-9b3f-417a-ad5e-93f0cexample</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>
  </item>
</reservedInstancesListingsSet>
```

```
        </item>
      </priceSchedules>
    </tagSet/>
    <clientToken>XqJIt1342112125076</clientToken>
  </item>
</reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

Related Operations

- [CreateReservedInstancesListing](#) (p. 84)
- [DescribeReservedInstancesListings](#) (p. 249)

CancelSpotInstanceRequests

Description

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

Important

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

Request Parameters

Name	Description	Required
<i>SpotInstanceRequestI d.n</i>	One or more Spot Instance request IDs. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `CancelSpotInstanceRequestsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotInstanceRequestSet</code>	A list of Spot Instance requests. Each request is wrapped in an <code>item</code> element. Type: CancelSpotInstanceRequestsResponseSetItemType (p. 444)

Examples

Example Request

This example cancels a Spot Instance request.

```
https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-e95fae02
&AUTHPARAMS
```

Example Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-e95fae02</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet></CancelSpotInstanceRequestsResponse>
```

Related Operations

- [DescribeSpotInstanceRequests](#) (p. 280)
- [RequestSpotInstances](#) (p. 390)
- [DescribeSpotPriceHistory](#) (p. 286)

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 EC2 user's instance is eligible for support.

Request Parameters

Name	Description	Required
<i>ProductCode</i>	The product code. Type: String Default: None	Yes
<i>InstanceId</i>	The instance. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `ConfirmProductInstanceResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the product code is attached to the instance. Otherwise, returns an error. Type: <code>xsd:boolean</code>
<code>ownerId</code>	The instance owner's account ID. Only present if the product code is attached to the instance. Type: <code>xsd:string</code>

Examples

Example Request

This example displays the product code that is associated with the instance.

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

Example Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

Related Operations

- [DescribeInstances](#) (p. 198)
- [RunInstances](#) (p. 412)

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 Region, and 9059, which is reserved in the EU West Region.

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

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

Request Parameters

Name	Description	Required
<i>Type</i>	The type of VPN connection this customer gateway supports. Type: String Default: None Valid values: <code>ipsec.1</code>	Yes
<i>IpAddress</i>	The Internet-routable IP address for the customer gateway's outside interface. The address must be static. Type: String Default: None	Yes
<i>BgpAsn</i>	The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN) for devices that support BGP. Type: Integer Default: 65000	No

Response Elements

The elements in the following table are wrapped in an `CreateCustomerGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>customerGateway</code>	Information about the customer gateway. Type: CustomerGatewayType (p. 447)

Examples

Example Request

This example passes information to AWS about the VPN customer gateway with 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/2012-08-15/">
  <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 Operations

- [DescribeCustomerGateways](#) (p. 175)
- [DeleteCustomerGateway](#) (p. 120)

CreateDhcpOptions

Description

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

DHCP Option Name	Description
domain-name	A domain name of your choice (e.g., example.com).
domain-name-servers	The IP address of a domain name server. You can specify up to four addresses.
ntp-servers	The IP address of a Network Time Protocol (NTP) server. You can specify up to four addresses.
netbios-name-servers	The IP address of a NetBIOS name server. You can specify up to four addresses.
netbios-node-type	The NetBIOS node type (1, 2, 4, or 8). For more information about the values, see RFC 2132 . We recommend you only use 2 at this time (broadcast and multicast are currently not supported).

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 new 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 Amazon Virtual Private Cloud and DHCP options, see [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>DhcpConfiguration.n.Key</i>	The name of a DHCP option. Type: String Default: None	Yes
<i>DhcpConfiguration.n.Value.m</i>	A value for the DHCP option. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `CreateDhcpOptionsResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
dhcpOptions	A set of DHCP options. Type: DhcpOptionsType (p. 461)

Examples

Example Request

This example creates a new 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/2012-08-15/">
  <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>
    <tagSet/>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
```

Related Operations

- [AssociateDhcpOptions](#) (p. 21)
- [DescribeDhcpOptions](#) (p. 178)
- [DeleteDhcpOptions](#) (p. 122)

CreateImage

Description

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped. For more information about Amazon EBS-backed AMIs, see [Storage for the Root Device](#).

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.

Request Parameters

Name	Description	Required
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	Yes
<i>Name</i>	A name for the new image. Type: String Default: None Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(_)	Yes
<i>Description</i>	A description of the new image. Type: String Default: None Constraints: Up to 255 characters	No
<i>NoReboot</i>	By default this parameter is set to <code>false</code> , which means Amazon EC2 attempts to cleanly shut down the instance before image creation and reboots the instance afterwards. When the parameter is set to <code>true</code> , Amazon EC2 does not shut down the instance before creating the image. When this option is used, file system integrity on the created image cannot be guaranteed. Type: Boolean Default: false	No

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Request Parameters

Name	Description	Required
<code>BlockDeviceMapping.n.DeviceName</code>	The device name exposed to the instance (for example, /dev/sdh or xvdh). For more information, see Block Device Mapping . Type: String Default: None Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify <code>DeviceName</code> with the root device name (for example, /dev/sda1 or xvda), and <code>BlockDeviceMapping.n.Ebs.SnapshotId</code> with the snapshot ID	Conditional
<code>BlockDeviceMapping.n.NoDevice</code>	Suppresses a device mapping. Type: Boolean Default: true	No
<code>BlockDeviceMapping.n.VirtualName</code>	The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None	No
<code>BlockDeviceMapping.n.Ebs.SnapshotId</code>	The ID of the snapshot. Type: String Default: None Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify <code>SnapshotId</code> with the snapshot ID, and <code>BlockDeviceMapping.n.DeviceName</code> with the root device name.	Conditional
<code>BlockDeviceMapping.n.Ebs.VolumeSize</code>	The size of the volume, in GiBs. Type: Integer Default: None Condition: Required if you are not creating a volume from a snapshot.	Conditional
<code>BlockDeviceMapping.n.Ebs.DeleteOnTermination</code>	Whether the volume is deleted on instance termination. Type: Boolean Default: true	No
<code>BlockDeviceMapping.n.Ebs.VolumeType</code>	The volume type. Type: String Valid values: standard io1 Default: standard	No

Name	Description	Required
<i>BlockDeviceMapping.n.Ebs.Iops</i>	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is <code>io1</code> ; not used with <code>standard</code> volumes. Default: None	Conditional

Response Elements

The elements in the following table are wrapped in a `CreateImageResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>imageId</code>	The ID of the AMI. Type: <code>xsd:string</code>

Examples

Example Request

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

```
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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

Related Operations

- [RunInstances](#) (p. 412)
- [DescribeInstances](#) (p. 198)
- [TerminateInstances](#) (p. 427)

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

Name	Description	Required
<i>Description</i>	A description of the conversion task or the resource being exported. Type: String Default: None	No
<i>InstanceId</i>	The ID of the instance being exported. Type: String Default: None	Yes
<i>TargetEnvironment</i>	The target virtualization environment. Type: String Default: None Valid values: vmware citrix microsoft	Yes
<i>ExportToS3.DiskImageFormat</i>	The format for the exported image. Type: String Default: vmdk if TargetEnvironment = vmware, otherwise vhd Valid values: vmdk vhd	No
<i>ExportToS3.ContainerFormat</i>	The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image will be exported. Type: String Default: ova if TargetEnvironment = vmare, otherwise blank Valid values: ova	No
<i>ExportToS3.S3Bucket</i>	The Amazon S3 bucket for the destination image. The bucket must exist and grant write permissions to AWS account vm-import-export@amazon.com. Type: String Default: None	Yes
<i>ExportToS3.S3Prefix</i>	The image is written to a single object in the Amazon S3 bucket at the S3 key s3prefix + exportTaskId + ':' + diskImageFormat. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `CreateInstanceExportTaskResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>exportTask</code>	The details of the created ExportVM task. Type: ExportTaskResponseType (p. 466)

Examples

Example Request

This example 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/2020-02-02/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <exportTask>
    <exportTaskId>export-i-1234wxyz</exportTaskId>
    <description>Example for docs</description>
    <state>active</state>
    <statusMessage>Running</statusMessage>
    <instanceExport>
      <instanceId>i-12345678</instanceId >
      <targetEnvironment>VMWare</targetEnvironment >
    </instanceExport>
    <exportToS3>
      <diskImageFormat>VMDK</diskImageFormat >
      <containerFormat>OVA</containerFormat>
      <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
      <s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
    </exportToS3>
  </exportTask>
</CreateInstanceExportTaskResponse>
```

Related Operations

- [CancelExportTask](#) (p. 48)
- [DescribeExportTasks](#) (p. 182)

CreateInternetGateway

Description

Creates a new Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using `AttachInternetGateway`. For more information about your VPC and Internet gateway, see [Amazon Virtual Private Cloud User Guide](#).

Request Parameters

This action has no request parameters.

Response Elements

The elements in the following table are wrapped in a `CreateInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>internetGateway</code>	Information about the Internet gateway Type: InternetGatewayType (p. 485)

Examples

Example Request

This example creates an Internet gateway.

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

Example Response

```
CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGateway>
    <internetGatewayId>igw-eaad4883</internetGatewayId>
    <attachmentSet/>
    <tagSet/>
  </internetGateway>
</CreateInternetGatewayResponse>
```

Related Operations

- [DeleteInternetGateway](#) (p. 124)

- [AttachInternetGateway](#) (p. 25)
- [DetachInternetGateway](#) (p. 322)
- [DescribeInternetGateways](#) (p. 220)

CreateKeyPair

Description

Creates a new 2048-bit RSA key pair with the specified name. The public key is stored by Amazon EC2 and the private key is returned to you. 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.

Tip

The key pair returned to you works only in the Region you're using when you create the key pair. To create a key pair that works in all Regions, use [ImportKeyPair](#) (p. 348).

Request Parameters

Name	Description	Required
<i>KeyName</i>	A unique name for the key pair. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes

Response Elements

The elements in the following table are wrapped in a `CreateKeyPairResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>keyName</code>	The key pair name you provided. Type: xsd:string
<code>keyFingerprint</code>	A SHA-1 digest of the DER encoded private key. Type: xsd:string
<code>keyMaterial</code>	An unencrypted PEM encoded RSA private key. Type: xsd:string

Examples

Example Request

This example creates a key pair named `gsg-keypair`.

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

Name	Description	Required
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `CreateNetworkAclResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>networkAcl</code>	Information about the new network ACL. Type: NetworkAclType (p. 493)

Examples

Example Request

The example creates a new network ACL in the VPC with 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 Amazon VPC processes 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/2012-08-15/">
  <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 Operations

- [DeleteNetworkAcl](#) (p. 128)
- [DescribeNetworkAcls](#) (p. 226)
- [ReplaceNetworkAclAssociation](#) (p. 378)

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, Amazon VPC processes 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, etc.), and not number them one right after the other (for example, 101, 102, 103, etc.). 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

Name	Description	Required
NetworkAclId	The ID of the ACL. Type: String Default: None	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	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 (go to Protocol Numbers).	Yes
RuleAction	Indicates whether to allow or deny traffic that matches the rule. Type: String Default: None Valid values: allow deny	Yes

Name	Description	Required
<code>Egress</code>	Indicates whether this rule applies to egress traffic from the subnet (<code>true</code>) or ingress traffic to the subnet (<code>false</code>). Type: Boolean Default: <code>false</code> Valid values: <code>true</code> <code>false</code>	No
<code>CidrBlock</code>	The CIDR range to allow or deny, in CIDR notation (for example, <code>172.16.0.0/24</code>). Type: String Default: None	Yes
<code>Icmp.Code</code>	For the ICMP protocol, the ICMP code. You can use <code>-1</code> to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Condition: Required if specifying <code>1</code> (ICMP) for the protocol.	Conditional
<code>Icmp.Type</code>	For the ICMP protocol, the ICMP type. You can use <code>-1</code> to specify all ICMP types. Type: Integer Default: None Condition: Required if specifying <code>1</code> (ICMP) for the protocol.	Conditional
<code>PortRange.From</code>	The first port in the range. Type: Integer Default: None Condition: Required if specifying <code>6</code> (TCP) or <code>17</code> (UDP) for the protocol.	Conditional
<code>PortRange.To</code>	The last port in the range. Type: Integer Default: None Condition: Required if specifying <code>6</code> (TCP) or <code>17</code> (UDP) for the protocol.	Conditional

Response Elements

The elements in the following table are wrapped in a `CreateNetworkAclEntryResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example creates an entry with rule number 110 in the network ACL with 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</CreateNetworkAclEntryResponse>
```

Related Operations

- [DeleteNetworkAclEntry](#) (p. 130)
- [ReplaceNetworkAclEntry](#) (p. 380)
- [DescribeNetworkAcls](#) (p. 226)

CreateNetworkInterface

Description

Creates a network interface in the specified subnet. This action is supported only in Amazon VPC.

Request Parameters

Name	Description	Required
<i>SubnetId</i>	The ID of the subnet to associate with the network interface. Type: String Default: None	Yes
<i>PrivateIpAddress</i>	The primary private IP address of the network interface. Type: String Default: None	No
<i>PrivateIpAddresses.n.PrivateIpAddress</i>	The private IP address of the specified network interface. 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. You cannot specify this parameter with the <i>PrivateIpAddresses.n.Primary</i> value of <code>true</code> if you specify the <i>PrivateIpAddress</i> option. Type: String Default: None	No
<i>PrivateIpAddresses.n.Primary</i>	Specifies whether the private IP address is the primary private IP address. Only one IP address can be designated as primary. You cannot specify this parameter with the value of <code>true</code> and the <i>PrivateIpAddresses.n.PrivateIpAddress</i> option if you specify the <i>PrivateIpAddress</i> option. Type: Boolean Default: False	No

Name	Description	Required
<i>SecondaryPrivateIpAddressCount</i>	<p>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.</p> <p>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 <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>For a single network interface, you cannot specify this option and specify more than one private IP address using <code>PrivateIpAddress.n</code>.</p> <p>Type: Integer Default: None</p>	No
<i>Description</i>	<p>The description of the network interface.</p> <p>Type: String Default: None</p>	No
<i>SecurityGroupId.n</i>	<p>A list of group IDs for use by the network interface.</p> <p>Type: SecurityGroupIdSetItemType (p. 515) Default: None</p>	No

Response Elements

The elements in the following table are wrapped in an `CreateNetworkInterface` structure.

Name	Description
<code>requestId</code>	The ID of the request to create a network interface. Type: <code>xsd:string</code>
<code>networkInterface</code>	The network interface that was created. Type: NetworkInterfaceType (p. 497)

Examples

Example Request

This example creates an elastic network interface (ENI) in the specified subnet with a primary IP address that is automatically assigned to the network interface.

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

Example Response

```
<CreateNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-15/'>
  <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>pending</status>
    <macAddress>02:74:b0:72:79:61</macAddress>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-188d9f74</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 creates an elastic network interface (ENI) in the specified subnet with a primary IP address of 10.0.2.140 and four secondary private IP addresses that are automatically assigned to the network interface.

```
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/2012-08-15/'>
  <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-188d9f74</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 requests 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/2012-08-15/'>
  <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 Operations

- [AttachNetworkInterface](#) (p. 27)
- [DetachNetworkInterface](#) (p. 324)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

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 [Using Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

Name	Description	Required
GroupName	A name for the placement group. Type: String Default: None	Yes
Strategy	The placement group strategy. Type: String Valid values: <code>cluster</code>	Yes

Response Elements

The elements in the following table are wrapped in a `CreatePlacementGroupResponse` structure.

Name	Description
requestId	The ID of the request. Type: <code>xsd:string</code>
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example 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/2012-08-15/">
```

```
<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>  
<return>>true</return>  
</CreatePlacementGroupResponse>
```

Related Operations

- [DeletePlacementGroup](#) (p. 134)
- [DescribePlacementGroups](#) (p. 239)

CreateReservedInstancesListing

Description

Creates a new 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, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>reservedInstancesId</i>	The ID of the Reserved Instance that will be listed. Type: String Default: None	Yes
<i>instanceCount</i>	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	Yes
<i>priceSchedules</i>	A list specifying the price of the Reserved Instance for each month remaining in the Reserved Instance term. Type: PriceScheduleRequestSetItem (p. 501)	Yes
<i>clientToken</i>	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 <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `CreateReservedInstancesListingResponseType` structure.

Name	Description
<code>requestId</code>	The ID of the request to create the Reserved Instances listing. Type: String
<code>reservedInstancesListingSet</code>	The Reserved Instances listing that was created. The listing information is wrapped in an <code>item</code> element. Type: DescribeReservedInstancesListingsResponseSetItem Type (p. 453)

Examples

Example Request

This example creates a Reserved Instance Marketplace listing from the existing Reserved Instance named `f127bd27-a218-43a4-926d-870e8a4307c1`, 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=f127bd27-a218-43a4-926d-870e8a4307c1
&AUTHPARAMS
```

Example Response

```
<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
9e57dexample</reservedInstancesListingId>
      <reservedInstancesId>f127bd27-a218-43a4-926d-870e8example</reserved
InstancesId>
      <createDate>2012-07-17T17:11:09.449Z</createDate>
      <updateDate>2012-07-17T17:11:09.468Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>1</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>11</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>true</active>
        </item>
        <item>
          <term>10</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>9</term>
          <price>2.5</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>8</term>
          <price>2.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

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

Related Operations

- [CancelReservedInstancesListing \(p. 50\)](#)
- [DescribeReservedInstancesListings \(p. 249\)](#)

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

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table where the route will be added. Type: String Default: None	Yes
<i>DestinationCidrBlock</i>	The CIDR address block used for the destination match. For example: 0.0.0.0/0. Routing decisions are based on the most specific match. Type: String Default: None	Yes
<i>GatewayId</i>	The ID of a gateway attached to your VPC. Type: String Default: None Condition: You must provide only one of the following: a <i>GatewayID</i> , <i>InstanceID</i> , or <i>NetworkInterfaceId</i> .	Conditional
<i>InstanceId</i>	The ID of a NAT instance in your VPC. Type: String Default: None Condition: You must provide only one of the following: a <i>GatewayID</i> , <i>InstanceID</i> , or <i>NetworkInterfaceId</i> .	Conditional

Name	Description	Required
<i>NetworkInterfaceId</i>	Allows the routing of network interface IDs. Exactly one interface must be attached when specifying an instance ID or it fails. Type: String Default: None Condition: You must provide only one of the following: a <code>GatewayID</code> , <code>InstanceID</code> , or <code>NetworkInterfaceId</code> .	Conditional

Response Elements

The elements in the following table are wrapped in a `CreateRouteResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example creates a route in the route table with ID `rtb-e4ad488d`. The route matches all traffic (`0.0.0.0/0`) and routes it to the Internet gateway with 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 creates a route in the route table with ID `rtb-g8ff4ea2`. The route sends all traffic (`0.0.0.0/0`) to the NAT instance with 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/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</CreateRouteResponse>
```

Related Operations

- [DeleteRoute](#) (p. 136)
- [ReplaceRoute](#) (p. 383)
- [DescribeRouteTables](#) (p. 262)

CreateRouteTable

Description

Creates a route table within a VPC. After you create a new 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

Name	Description	Required
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `CreateRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request received. Type: <code>xsd:string</code>
<code>routeTable</code>	Information about the newly created route table. Type: RouteTableType (p. 510)

Examples

Example Request

This example creates a route table within the VPC with ID of `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/2012-08-15/">
  <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 Operations

- [AssociateRouteTable](#) (p. 23)
- [DisassociateRouteTable](#) (p. 334)
- [DescribeRouteTables](#) (p. 262)
- [DeleteRouteTable](#) (p. 138)
- [ReplaceRouteTableAssociation](#) (p. 385)
- [CreateRoute](#) (p. 88)

CreateSecurityGroup

Description

Creates a new security group. You can create either an EC2 security group (which works only with EC2), or a VPC security group (which works only with Amazon Virtual Private Cloud). The two types of groups have different capabilities. For information about VPC security groups and how the two types of groups differ, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*. For information about EC2 security groups, see [Using Security Groups](#) in the *Amazon Elastic Compute Cloud User Guide*.

When you create a security group, you give it a friendly name of your choice. You can have an EC2 security group with the same name as a VPC security group (each group has a unique security group ID separate from the name). Two standard groups can't have the same name, and two VPC groups can't have the same name.

If you don't specify a security group when you launch an instance, the instance is launched into the default security group. This group (and only this group) includes a default rule that gives the instances in the group unrestricted network access to each other. You have a default EC2 security group for instances you launch with EC2 (i.e., outside a VPC), and a default VPC security group for instances you launch in your VPC.

You can add or remove rules from your security groups (i.e., authorize or revoke permissions) using the `AuthorizeSecurityGroupIngress`, `AuthorizeSecurityGroupEgress`, `RevokeSecurityGroupIngress`, and `RevokeSecurityGroupEgress` actions.

Important

For EC2 security groups: You can have up to 500 groups.

For VPC security groups: You can have up to 50 groups per VPC.

Request Parameters

Name	Description	Required
<i>GroupName</i>	The name of the security group. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes
<i>GroupDescription</i>	A description of the group. This is informational only. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None Condition: Required for VPC security groups	Conditional

Response Elements

The elements in the following table are wrapped in a `CreateSecurityGroupResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>
<code>groupId</code>	The ID that AWS assigns to the security group. Type: <code>xsd:string</code>

Examples

Example Request

This example creates the `webserv` security group.

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

Example Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

Related Operations

- [RunInstances](#) (p. 412)
- [DescribeSecurityGroups](#) (p. 267)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [RevokeSecurityGroupIngress](#) (p. 409)
- [DeleteSecurityGroup](#) (p. 140)

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

When a snapshot is created, any AWS Marketplace product codes from the volume are propagated to the snapshot.

When taking a snapshot of a file system, we recommend unmounting it first. This ensures the file system metadata is in a consistent state, that the 'mounted indicator' is cleared, and that all applications using that file system are stopped and in a consistent state. Some file systems, such as xfs, can freeze and unfreeze activity so a snapshot can be made without unmounting.

For Linux/UNIX, enter the following command from the command line to unmount the volume.

```
umount -d device_name
```

For example:

```
umount -d /dev/sdh
```

For Windows, open Disk Management, right-click the volume to unmount, and select Change Drive Letter and Path. Then, select the mount point to remove and click Remove.

Request Parameters

Name	Description	Required
<i>VolumeId</i>	The ID of the Amazon EBS volume. Type: String Default: None	Yes
<i>Description</i>	A description of the Amazon EBS snapshot. Type: String Default: None Constraints: Up to 255 characters	No

Response Elements

The elements in the following table are wrapped in a `CreateSnapshotResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string

Name	Description
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	A description of the snapshot. Type: xsd:string

Examples

Example Request

This example creates a snapshot of volume `vol-4d826724`.

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-4d826724
&Description=Daily+Backup
&AUTHPARAMS
```

Example Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-78a54011</snapshotId>
  <volumeId>vol-4d826724</volumeId>
  <status>pending</status>
  <startTime>2008-05-07T12:51:50.000Z</startTime>
  <progress>60%</progress>
  <ownerId>111122223333</ownerId>
  <volumeSize>10</volumeSize>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
```

Related Operations

- [DeleteSnapshot](#) (p. 142)
- [DescribeSnapshots](#) (p. 273)

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

Name	Description	Required
<i>Bucket</i>	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.	Yes
<i>Prefix</i>	A prefix that is prepended to datafeed files. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `CreateSpotDatafeedSubscriptionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotDatafeedSubscription</code>	The datafeed subscription. Type: SpotDatafeedSubscriptionType (p. 516)

Examples

Example Request

This example 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix/>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

Related Operations

- [DeleteSpotDatafeedSubscription](#) (p. 144)
- [DescribeSpotDatafeedSubscription](#) (p. 278)

CreateSubnet

Description

Creates a subnet in an existing VPC. You can create up to 20 subnets in a VPC. If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle. If you need more than 20 subnets, you can request more by going to <http://aws.amazon.com/contact-us/vpc-request/>.

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 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 Amazon Virtual Private Cloud and subnets, see the [Amazon Virtual Private Cloud User Guide](#).

Request Parameters

Name	Description	Required
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes
<i>CidrBlock</i>	The CIDR block for the subnet to cover (e.g., 10.0.0.0/24). Type: String Default: None	Yes
<i>AvailabilityZone</i>	The Availability Zone for the subnet. Type: String Default: AWS selects a zone for you (recommended)	No

Response Elements

The elements in the following table are wrapped in an `CreateSubnetResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
subnet	Information about the subnet. Type: SubnetType (p. 521)

Examples

Example Request

This example creates a subnet with CIDR block 10.0.1.0/24 in the VPC with 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/2012-08-15/">
  <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>250</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
```

Related Operations

- [DescribeSubnets](#) (p. 290)
- [DeleteSubnet](#) (p. 145)

CreateTags

Description

Adds or overwrites one or more tags for the specified 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 [Using Tags](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>ResourceId.n</i>	The ID of a resource to tag. For example, <code>ami-1a2b3c4d</code> . You can specify multiple resources to assign the tags to. Type: String Default: None	Yes
<i>Tag.n.Key</i>	The key for a tag. Type: String Default: None Constraints: Tag keys are case sensitive and accept a maximum of 128 Unicode characters.	Yes
<i>Tag.n.Value</i>	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 256 Unicode characters.	Yes

Response Elements

The elements in the following table are wrapped in a `CreateTagsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example 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 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/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</CreateTagsResponse>
```

Related Operations

- [DescribeTags](#) (p. 294)
- [DeleteTags](#) (p. 147)

CreateVolume

Description

Creates an Amazon EBS volume that can be attached to any Amazon EC2 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](#).

Request Parameters

Name	Description	Required
<i>Size</i>	The size of the volume, in GiBs. Type: String Valid values: 1-1024 Default: If you're creating a volume from a snapshot and don't specify a size, the default is the snapshot size. Condition: Required if you're not creating a volume from a snapshot.	Conditional
<i>SnapshotId</i>	The snapshot from which to create the new volume. Type: String Default: None Condition: Required if you are creating a volume from a snapshot.	Conditional
<i>AvailabilityZone</i>	The Availability Zone for the new volume. Use DescribeAvailabilityZones (p. 167) to display Availability Zones that are currently available to your account. Type: String Default: None	Yes
<i>VolumeType</i>	The volume type. Type: String Valid values: <code>standard</code> <code>io1</code> Default: <code>standard</code>	No
<i>Iops</i>	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is <code>io1</code> ; not used with <code>standard</code> volumes. Default: None	Conditional

Response Elements

The elements in the following table are wrapped in a `CreateVolumeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>volumeId</code>	The ID of the volume. Type: xsd:string
<code>size</code>	The size of the volume, in GiBs. Type: xsd:string
<code>snapshotId</code>	The snapshot from which the volume was created, if applicable. Type: xsd:string
<code>availabilityZone</code>	The Availability Zone for the volume. Type: xsd:string
<code>status</code>	The volume state. Type: xsd:string Valid values: <code>creating</code> <code>available</code> <code>in-use</code> <code>deleting</code> <code>deleted</code> <code>error</code>
<code>createTime</code>	The time stamp when volume creation was initiated. Type: xsd:dateTime
<code>volumeType</code>	The volume type. Type: xsd:string Valid values: <code>standard</code> <code>io1</code>
<code>iops</code>	The number of I/O operations per second (IOPS) that the volume supports. Type: xsd:int Valid values: Range is 1 to 1000.

Examples

Example Request

This example creates a new 80 GiB volume in 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-4d826724</volumeId>
```



```
<size>80</size>  
<snapshotId/>  
<availabilityZone>us-east-1a</availabilityZone>  
<status>creating</status>  
<createTime>2008-05-07T11:51:50.000Z</createTime>  
<volumeType>standard</volumeType>  
</CreateVolumeResponse>
```

Related Operations

- [DeleteVolume](#) (p. 150)
- [DescribeVolumes](#) (p. 300)
- [AttachVolume](#) (p. 29)
- [DetachVolume](#) (p. 326)
- [DescribeAvailabilityZones](#) (p. 167)

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 Amazon Virtual Private Cloud and DHCP options, see [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>CidrBlock</i>	The CIDR block you want the VPC to cover (e.g., 10.0.0.0/16). Type: String Default: None	Yes
<i>instanceTenancy</i>	The supported tenancy of instances launched into the VPC. A value of <code>default</code> means instances can be launched with any tenancy; a value of <code>dedicated</code> means all instances launched into the VPC will be launched as dedicated tenancy instances regardless of the tenancy assigned to the instance at launch. Setting the instance's tenancy attribute to <code>dedicated</code> specifies that your instance will run on single-tenant hardware. Type: String Default: default	No

Response Elements

The elements in the following table are wrapped in an `CreateVpcResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpc</code>	Information about the VPC. Type: VpcType (p. 528)

Examples

Example Request

This example creates a VPC with 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/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpc>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <dhcpOptionsId>default</dhcpOptionsId>
    <tagSet/>
  </vpc>
</CreateVpcResponse>
```

Related Operations

- [DescribeVpcs](#) (p. 311)
- [DeleteVpc](#) (p. 152)
- [CreateDhcpOptions](#) (p. 59)
- [AssociateDhcpOptions](#) (p. 21)

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 configure your customer gateway, in XML format. 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 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 `CreateVpnConnection`.

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

Request Parameters

Name	Description	Required
<i>Type</i>	The type of VPN connection. Type: String Default: None Valid values: <code>ipsec.1</code>	Yes
<i>CustomerGatewayId</i>	The ID of the customer gateway. Type: String Default: None	Yes
<i>VpnGatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes
<i>AvailabilityZone</i>	The Availability Zone option has been deprecated. The action ignores this parameter. Type: String Default: None	No
<i>Options.StaticRoutesOnly</i>	Indicates whether or not the VPN connection requires static routes. If you are creating a VPN connection for a device that does not support BGP, you must specify this value as true. Type: Boolean Default: False	No

Response Elements

The elements in the following table are wrapped in an `CreateVpnConnectionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpnConnection</code>	Information about the VPN connection. Type: VpnConnectionType (p. 530)

Examples

Example Request

This example creates a VPN connection between the virtual private gateway (VGW) with ID `vgw-8db04f81` and the customer gateway with ID `cgw-b4dc3961`. The response includes configuration information for the VPN connection's customer gateway (in the native XML format, but escaped).

```
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/2012-08-15/">
  <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>
        <ipsec_tunnel>
          <customer_gateway>
            <tunnel_outside_address>
              <ip_address>YOUR_UPLINK_ADDRESS</ip_address>
            </tunnel_outside_address>
            <tunnel_inside_address>
              <ip_address>169.254.255.1</ip_address>
              <network_mask>255.255.255.252</network_mask>
              <network_cidr>30</network_cidr>
            </tunnel_inside_address>
          </customer_gateway>
          <bgp>
            <asn>YOUR_BGP_ASN</asn>
          </bgp>
        </ipsec_tunnel>
      </vpn_connection>
    </customerGatewayConfiguration>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

```
        <hold_time>30</hold_time>
    </bgp>
</customer_gateway>
<vpn_gateway>
    <tunnel_outside_address>
        <ip_address>72.21.209.193</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
        <ip_address>169.254.255.2</ip_address>
        <network_mask>255.255.255.252</network_mask>
        <network_cidr>30</network_cidr>
    </tunnel_inside_address>
    <bgp>
        <asn>7224</asn>
        <hold_time>30</hold_time>
    </bgp>
</vpn_gateway>
<ike>
    <authentication_protocol>sha1</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>28800</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <mode>main</mode>
    <pre_shared_key>plain-text-password1</pre_shared_key>
</ike>
<ipsec>
    <protocol>esp</protocol>
    <authentication_protocol>hmac-shal-96</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>3600</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <mode>tunnel</mode>
    <clear_df_bit>true</clear_df_bit>
    <fragmentation_before_encryption>true</fragmentation_before_en
cryptio>
    <tcp_mss_adjustment>1396</tcp_mss_adjustment>
    <dead_peer_detection>
        <interval>10</interval>
        <retries>3</retries>
    </dead_peer_detection>
</ipsec>
</ipsec_tunnel>
<ipsec_tunnel>
    <customer_gateway>
        <tunnel_outside_address>
            <ip_address>YOUR_UPLINK_ADDRESS</ip_address>
        </tunnel_outside_address>
        <tunnel_inside_address>
            <ip_address>169.254.255.5</ip_address>
            <network_mask>255.255.255.252</network_mask>
            <network_cidr>30</network_cidr>
        </tunnel_inside_address>
        <bgp>
            <asn>YOUR_BGP_ASN</asn>
            <hold_time>30</hold_time>
        </bgp>
    </customer_gateway>
</ipsec_tunnel>
```

```

    <tunnel_outside_address>
      <ip_address>72.21.209.225</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
      <ip_address>169.254.255.6</ip_address>
      <network_mask>255.255.255.252</network_mask>
      <network_cidr>30</network_cidr>
    </tunnel_inside_address>
    <bgp>
      <asn>7224</asn>
      <hold_time>30</hold_time>
    </bgp>
  </vpn_gateway>
  <ike>
    <authentication_protocol>sha1</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>28800</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <pre_shared_key>plain-text-password2</pre_shared_key>
    <mode>main</mode>
  </ike>
  <ipsec>
    <protocol>esp</protocol>
    <authentication_protocol>hmac-sha1-96</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>3600</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <mode>tunnel</mode>
    <clear_df_bit>true</clear_df_bit>
    <fragmentation_before_encryption>true</fragmentation_before_en
cryptio>
    <tcp_mss_adjustment>1396</tcp_mss_adjustment>
    <dead_peer_detection>
      <interval>10</interval>
      <retries>3</retries>
    </dead_peer_detection>
  </ipsec>
</ipsec_tunnel>
</vpn_connection>
</customerGatewayConfiguration>
<type>ipsec.1</type>
<customerGatewayId>cgw-b4dc3961</customerGatewayId>
<vpnGatewayId>vgw-8db04f81</vpnGatewayId>
<tagSet/>
</vpnConnection>
</CreateVpnConnectionResponse>

```

Example Request

This example creates a VPN connection with the static routes option between the virtual private gateway (VGW), with ID vgw-8db04f81, and the customer gateway, with 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).

```

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/2012-08-01/'>  
  
  <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>  
  <ipsec_tunnel>  
    <customer_gateway>  
      <tunnel_outside_address>  
        <ip_address>111.112.113.11</ip_address>  
      </tunnel_outside_address>  
      <tunnel_inside_address>  
        <ip_address>169.254.200.18</ip_address>  
        <network_mask>255.255.255.252</network_mask>  
        <network_cidr>30</network_cidr>  
      </tunnel_inside_address>  
    </customer_gateway>  
    <vpn_gateway>  
      <tunnel_outside_address>  
        <ip_address>92.168.1.2</ip_address>  
      </tunnel_outside_address>  
      <tunnel_inside_address>  
        <ip_address>169.254.200.17</ip_address>  
        <network_mask>255.255.255.252</network_mask>  
        <network_cidr>30</network_cidr>  
      </tunnel_inside_address>  
    </vpn_gateway>  
    <ike>  
      <authentication_protocol>sha1</authentication_protocol>  
      <encryption_protocol>aes-128-cbc</encryption_protocol>  
      <lifetime>28800</lifetime>  
      <perfect_forward_secrecy>group2</perfect_forward_secrecy>  
      <mode>main</mode>  
      <pre_shared_key>UNoSTegjalhXf_Sc3iFyHeyPWvKlg4PF</pre_shared_key>  
    </ike>  
    <ipsec>  
      <protocol>esp</protocol>  
      <authentication_protocol>hmac-sha1-96</authentication_protocol>  
      <encryption_protocol>aes-128-cbc</encryption_protocol>  
      <lifetime>3600</lifetime>  
      <perfect_forward_secrecy>group2</perfect_forward_secrecy>  
      <mode>tunnel</mode>  
      <clear_df_bit>true</clear_df_bit>
```



```
<fragmentation_before_encryption>true</fragmentation_before_encryption>
<tcp_mss_adjustment>1387</tcp_mss_adjustment>
<dead_peer_detection>
  <interval>10</interval>
  <retries>3</retries>
</dead_peer_detection>
</ipsec>
</ipsec_tunnel>
<ipsec_tunnel>
  <customer_gateway>
    <tunnel_outside_address>
      <ip_address>111.112.113.11</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
      <ip_address>169.254.200.22</ip_address>
      <network_mask>255.255.255.252</network_mask>
      <network_cidr>30</network_cidr>
    </tunnel_inside_address>
  </customer_gateway>
  <vpn_gateway>
    <tunnel_outside_address>
      <ip_address>192.168.49.23</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
      <ip_address>169.254.200.21</ip_address>
      <network_mask>255.255.255.252</network_mask>
      <network_cidr>30</network_cidr>
    </tunnel_inside_address>
  </vpn_gateway>
  <ike>
    <authentication_protocol>shal</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>28800</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <mode>main</mode>
    <pre_shared_key>ihG3vT7xtPfNqDa9o3Sn2sjARDigAWI9</pre_shared_key>
  </ike>
  <ipsec>
    <protocol>esp</protocol>
    <authentication_protocol>hmac-sha1-96</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>3600</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <mode>tunnel</mode>
    <clear_df_bit>true</clear_df_bit>
    <fragmentation_before_encryption>true</fragmentation_before_encryption>
    <tcp_mss_adjustment>1387</tcp_mss_adjustment>
    <dead_peer_detection>
      <interval>10</interval>
      <retries>3</retries>
    </dead_peer_detection>
  </ipsec>
</ipsec_tunnel>
</vpn_connection>
</customerGatewayConfiguration>
  <customerGatewayId>cgw-63ae4b0a</customerGatewayId>
  <vpnGatewayId>vgw-4ea04527</vpnGatewayId>
  <options>
```

```
        <staticRoutesOnly>true</staticRoutesOnly>
    </options>
    <routes/>
</vpnConnection>
</CreateVpnConnectionResponse>
```

Related Operations

- [DescribeVpnConnections](#) (p. 314)
- [DeleteVpnConnection](#) (p. 154)
- [CreateVpc](#) (p. 107)
- [CreateSubnet](#) (p. 100)
- [AttachVpnGateway](#) (p. 32)

CreateVpnConnectionRoute

Description

Creates a new 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.

Important

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

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

Request Parameters

Name	Description	Required
<i>DestinationCidrBlock</i>	The CIDR block associated with the local subnet of the customer data center. Type: String Default: None	Yes
<i>VpnConnectionId</i>	The ID of the VPN connection. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `CreateVpnConnectionRouteResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: boolean

Examples

Example Request

This example creates a static route to the VPN connection for the VPN connection 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/2012-08-01/'>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```

Related Operations

- [DeleteVpnConnectionRoute](#) (p. 156)
- [DeleteVpnConnection](#) (p. 154)
- [DescribeVpnConnections](#) (p. 314)
- [CreateVpc](#) (p. 107)
- [CreateSubnet](#) (p. 100)
- [AttachVpnGateway](#) (p. 32)

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 Amazon Virtual Private Cloud and virtual private gateways, see [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>Type</i>	The type of VPN connection this virtual private gateway supports. Type: String Default: None Valid values: <code>ipsec.1</code>	Yes
<i>AvailabilityZone</i>	The Availability Zone option has been deprecated. The API ignores this parameter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in an `CreateVpnGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpnGateway</code>	Information about the virtual private gateway. Type: VpnGatewayType (p. 531)

Examples

Example Request

This example creates a virtual private gateway.

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

Example Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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 Operations

- [DescribeVpnGateways](#) (p. 318)
- [DeleteVpnGateway](#) (p. 158)
- [AttachVpnGateway](#) (p. 32)
- [DetachVpnGateway](#) (p. 328)

DeleteCustomerGateway

Description

Deletes a VPN customer gateway. You must delete the VPN connection before deleting the customer gateway.

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

Request Parameters

Name	Description	Required
<i>CustomerGatewayId</i>	The ID of the customer gateway. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteCustomerGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteCustomerGatewayResponse>
```

Related Operations

- [CreateCustomerGateway](#) (p. 57)
- [DescribeCustomerGateways](#) (p. 175)

DeleteDhcpOptions

Description

Deletes a set of DHCP options that you specify. Amazon VPC returns an error if the set of options you specify is currently associated with a VPC. You can disassociate the set of options by associating either a new set of options or the default options with the VPC.

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

Request Parameters

Name	Description	Required
<i>DhcpOptionsId</i>	The ID of the DHCP options set. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteDhcpOptionsResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

Examples

Example Request

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

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

Example Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteDhcpOptionsResponse>
```

Related Operations

- [AssociateDhcpOptions](#) (p. 21)
- [CreateDhcpOptions](#) (p. 59)
- [DescribeDhcpOptions](#) (p. 178)

DeleteInternetGateway

Description

Deletes an Internet gateway from your AWS account. The gateway must not be attached to a VPC. For more information about your VPC and Internet gateway, see the [Amazon Virtual Private Cloud User Guide](#).

Request Parameters

Name	Description	Required
<i>InternetGatewayId</i>	The ID of the Internet gateway. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeleteInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```

Related Operations

- [CreateInternetGateway](#) (p. 68)
- [AttachInternetGateway](#) (p. 25)
- [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

Name	Description	Required
<i>KeyName</i>	The name of the key pair. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeleteKeyPairResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deletes the `gsg-keypair` key pair.

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=gsg-keypair
&AUTHPARAMS
```

Example Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

Related Operations

- [CreateKeyPair](#) (p. 70)

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

DeleteNetworkAcl

Description

Deletes a network ACL from a VPC. The ACL must not have any subnets associated with it. 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

Name	Description	Required
<i>NetworkAclId</i>	The ID of the network ACL. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeleteNetworkAclResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclResponse>
```

Related Operations

- [DeleteNetworkAcl](#) (p. 128)
- [DescribeNetworkAcls](#) (p. 226)
- [ReplaceNetworkAclAssociation](#) (p. 378)

DeleteNetworkAclEntry

Description

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

Request Parameters

Name	Description	Required
NetworkAclId	The ID of the network ACL. Type: string Default: none	Yes
RuleNumber	The rule number for the entry to delete. Type: Number Default: none	Yes
Egress	Specifies whether the rule to delete is an egress rule (<code>true</code>) or ingress rule (<code>false</code>). Type: Boolean Default: <code>false</code> Valid values: <code>true</code> <code>false</code>	No

Response Elements

The elements in the following table are wrapped in a `ReplaceNetworkAclEntryResponse` structure.

Name	Description
requestId	The ID of the request. Type: <code>xsd:string</code>
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

Related Operations

- [CreateNetworkAclEntry](#) (p. 74)
- [ReplaceNetworkAclEntry](#) (p. 380)
- [DescribeNetworkAcls](#) (p. 226)

DeleteNetworkInterface

Description

Deletes the specified network interface.

Request Parameters

Name	Description	Required
NetworkInterfaceId	The ID of the network interface. Type: String Default: None	Yes

Response Elements

Name	Description
requestId	The ID of the request to delete the network interface. Type: xsd:string
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

Examples

Example Request

This example deletes an elastic network interface (ENI) `eni-ffda3197`.

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

Example Response

```
<DeleteNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>
```

Related Operations

- [AttachNetworkInterface](#) (p. 27)
- [DetachNetworkInterface](#) (p. 324)

- [CreateNetworkInterface](#) (p. 77)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

DeletePlacementGroup

Description

Deletes a placement group from your account. You must terminate all instances in the placement group before deleting it. For more information about placement groups and cluster instances, see [Using Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

Name	Description	Required
GroupName	The name of the placement group. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeletePlacementGroupResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

Examples

Example Request

This example 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/2012-08-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</DeletePlacementGroupResponse>
```

Related Operations

- [CreatePlacementGroup](#) (p. 82)
- [DescribePlacementGroups](#) (p. 239)

DeleteRoute

Description

Deletes a route from 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

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table. Type: String Default: None	Yes
<i>DestinationCidrBlock</i>	The CIDR range for the route to delete. The value you specify must exactly match the CIDR for the route. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `ReplaceRouteResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteResponse>
```

Related Operations

- [CreateRoute](#) (p. 88)
- [ReplaceRoute](#) (p. 383)
- [DescribeRouteTables](#) (p. 262)

DeleteRouteTable

Description

Deletes a route table from a VPC. The route table must not be associated with a subnet. 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

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeleteRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteTableResponse>
```

Related Operations

- [AssociateRouteTable](#) (p. 23)
- [DisassociateRouteTable](#) (p. 334)
- [DescribeRouteTables](#) (p. 262)
- [CreateRouteTable](#) (p. 91)
- [ReplaceRouteTableAssociation](#) (p. 385)

DeleteSecurityGroup

Description

Deletes a security group. This action applies to both EC2 security groups and VPC security groups. For information about VPC security groups and how they differ from EC2 security groups, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

Note

If you attempt to delete a security group that contains instances, or attempt to delete a security group that is referenced by another security group, an error is returned. For example, if security group B has a rule that allows access from security group A, security group A cannot be deleted until the rule is removed.

The fault returned is `InvalidGroup.InUse` for EC2 security groups, or `DependencyViolation` for VPC security groups.

Request Parameters

Name	Description	Required
<i>GroupName</i>	The name of the security group. Type: String Default: None Condition: Either <i>GroupName</i> or <i>GroupId</i> is required	Conditional
<i>GroupId</i>	The ID of the security group. Type: String Default: None Condition: Required for a VPC security group; for an EC2 security group, either <i>GroupName</i> or <i>GroupId</i> is required	Conditional

Response Elements

The elements in the following table are wrapped in a `DeleteSecurityGroupResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deletes the EC2 security group named `websrv`.

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

Example Request

This example deletes the VPC security group with ID sg-77d0f5a2.

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-77d0f5a2
&AUTHPARAMS
```

Example Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

Related Operations

- [CreateSecurityGroup](#) (p. 93)
- [DescribeSecurityGroups](#) (p. 267)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [RevokeSecurityGroupIngress](#) (p. 409)

DeleteSnapshot

Description

Deletes a snapshot of an Amazon EBS volume.

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 incrementally 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.

Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the Amazon EBS snapshot. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeleteSnapshotResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deletes snapshot `snap-78a54011`.

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot
&SnapshotId.1=snap-78a54011
&AUTHPARAMS
```

Example Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteSnapshotResponse>
```

Related Operations

- [CreateSnapshot](#) (p. 95)
- [DescribeSnapshots](#) (p. 273)

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

The `DeleteSpotDatafeedSubscription` operation does not have any request parameters.

Response Elements

The elements in the following table are wrapped in a `DeleteSpotDatafeedSubscriptionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deletes the data feed for the account.

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

Example Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

Related Operations

- [CreateSpotDatafeedSubscription](#) (p. 98)
- [DescribeSpotDatafeedSubscription](#) (p. 278)

DeleteSubnet

Description

Deletes a subnet from a VPC. You must terminate all running instances in the subnet before deleting it, otherwise Amazon VPC returns an error.

Request Parameters

Name	Description	Required
<i>SubnetId</i>	The ID of the subnet. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteSubnetResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteSubnetResponse>
```


Related Operations

- [CreateSubnet](#) (p. 100)
- [DescribeSubnets](#) (p. 290)

DeleteTags

Description

Deletes a specific set of tags from a specific set of resources. This call is designed to follow a `DescribeTags` call. You first determine what tags a resource has, and then you call `DeleteTags` with the resource ID and the specific tags you want to delete.

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

Request Parameters

Name	Description	Required
<code>ResourceId.n</code>	The ID of the resource. For example, <code>ami-1a2b3c4d</code> . You can specify more than one resource ID. Type: String Default: None	Yes
<code>Tag.n.Key</code>	The tag's key. You can specify more than one tag to delete. Type: String Default: None	Yes
<code>Tag.n.Value</code>	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.	No

Response Elements

The elements in the following table are wrapped in a `DeleteTagsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deletes the tags for the AMI with ID `ami-1a2b3c4d`. You first get a list of the tags.

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

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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>
```

Then you delete the tags. Specifying the value for the *stack* tag is optional.

```
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/2012-08-15/">
  <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 deletes the stack and webserver tags for one particular instance.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=stack
&ResourceId.2=i-5f4e3d2a
&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 deletes all tags whose key=`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 deletes all tags for the specified instance where key=`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 Operations

- [CreateTags](#) (p. 102)
- [DescribeTags](#) (p. 294)

DeleteVolume

Description

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

Note

The volume remains in the deleting state for several minutes after you call this action.

Request Parameters

Name	Description	Required
<code>VolumeId</code>	The ID of the volume. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeleteVolumeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deletes volume `vol-4282672b`.

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-4282672b
&AUTHPARAMS
```

Example Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteVolumeResponse>
```

Related Operations

- [CreateVolume](#) (p. 104)
- [DescribeVolumes](#) (p. 300)
- [AttachVolume](#) (p. 29)
- [DetachVolume](#) (p. 326)

DeleteVpc

Description

Deletes a VPC. You must detach or delete all gateways or other objects that are dependent on the VPC first. For example, you must terminate all running instances, delete all VPC security groups (except the default), delete all the route tables (except the default), etc.

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

Request Parameters

Name	Description	Required
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteVpcResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteVpcResponse>
```

Related Operations

- [CreateVpc](#) (p. 107)
- [DescribeVpcs](#) (p. 311)

DeleteVpnConnection

Description

Deletes a VPN connection. Use this if you want to delete a VPC and all its associated components. Another reason to use this operation is if you believe 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.

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

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

Request Parameters

Name	Description	Required
<i>VpnConnectionId</i>	The ID of the VPN connection. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteVpnConnectionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

Related Operations

- [CreateVpnConnection](#) (p. 109)
- [DescribeVpnConnections](#) (p. 314)
- [DetachVpnGateway](#) (p. 328)
- [DeleteVpc](#) (p. 152)

DeleteVpnConnectionRoute

Description

Deletes 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.

Important

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

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

Request Parameters

Name	Description	Required
<i>DestinationCidrBlock</i>	The CIDR block associated with the local subnet of the customer data center. Type: String Default: None	Yes
<i>VpnConnectionId</i>	The ID of the VPN connection. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteVpnConnectionRouteResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: boolean

Examples

Example Request

This example deletes a static route to the destination CIDR block 11.12.0.0/16 associated with the VPN connection with 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/2012-08-01/'>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>>true</return>
</DeleteVpnConnectionRouteResponse>
```

Related Operations

- [CreateVpnConnectionRoute](#) (p. 116)
- [DeleteVpnConnection](#) (p. 154)
- [DescribeVpnConnections](#) (p. 314)
- [CreateVpc](#) (p. 107)
- [CreateSubnet](#) (p. 100)
- [AttachVpnGateway](#) (p. 32)

DeleteVpnGateway

Description

Deletes a virtual private gateway. Use this when you want to delete a VPC and all its associated components because you no longer need them. 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 just want to delete and recreate the VPN connection between your VPC and data center.

For more information about Amazon Virtual Private Cloud and virtual private gateways, see [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>VpnGatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DeleteVpnGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

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

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

Example Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DeleteVpnGatewayResponse>
```

Related Operations

- [CreateVpnGateway](#) (p. 118)
- [DescribeVpnGateways](#) (p. 318)
- [DeleteVpnConnection](#) (p. 154)

DeregisterImage

Description

Deregisters the specified AMI. Once deregistered, the AMI cannot be used to launch new instances.

Note

This command does not delete the AMI.

Request Parameters

Name	Description	Required
<i>ImageId</i>	The ID of the AMI to deregister. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DeregisterImageResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example deregisters the `ami-4fa54026` AMI.

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

Example Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeregisterImageResponse>
```

Related Operations

- [RegisterImage](#) (p. 372)
- [DescribeImages](#) (p. 187)

DescribeAddresses

Description

Gives information about Elastic IP addresses allocated to your account. This includes both EC2 and VPC Elastic IP addresses. For information about VPC addresses and how they differ from EC2 addresses, see [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

You can filter the results to return information only about Elastic IP addresses that match criteria you specify. For example, you could get information only about addresses tagged with a certain value. You can specify multiple values for a filter. An address must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the address is a particular value, and is tagged with a certain value). The result includes information for an address 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
domain	Indicates whether the address is a EC2 address, or a VPC address. Type: String Valid values: <code>standard</code> <code>vpc</code>
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 addresses only). Type: String
association-id	The association ID for the address (VPC addresses only). Type: String
network-interface-id	The network interface (if any) that the address is associated with. (for VPC addresses only). Type: String
network-interface-owner-id	The owner IID.
private-ip-address	The private IP address associated with the Elastic IP address (for VPC addresses only). Type: String

Request Parameters

Name	Description	Required
<i>PublicIp.n</i>	One or more Elastic IP addresses. Applies only to standard (EC2) addresses. Type: String Default: None	No
<i>AllocationId.n</i>	One or more allocation IDs corresponding to the address or addresses to describe. Applies only to VPC addresses. Type: String Default: None	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeAddressesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>addressesSet</code>	A list of IP addresses, each one wrapped in an <code>item</code> element. Type: DescribeAddressesResponseItemType (p. 449)

Examples

Example Request

EC2 addresses: This example describes two specific EC2 Elastic IP addresses assigned to the account. Amazon EC2 returns information about 192.0.2.1, which is assigned to instance i-f15ebb98, and for 198.51.100.2, which 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/2012-08-15/">
  <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

VPC Addresses: This example describes a specific VPC address allocated to your account. You must use the allocation ID to specify the address.

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

Example Response

```
<soap:Body>
  <DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
    <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
    <addressesSet>
      <item>
        <publicIp>46.51.223.41</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

VPC Addresses: This example lists only your VPC addresses (assuming you have both standard and VPC addresses).

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

Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>0782c68a-5f24-4dce-93c0-b5a066d6e0d0</requestId>
  <addressesSet>
    <item>
      <publicIp>203.0.113.12</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>
    <item>
      <publicIp>46.51.221.164</publicIp>
      <allocationId>eipalloc-1b5fe072</allocationId>
      <domain>vpc</domain>
    </item>
    <item>
      <publicIp>203.0.113.14</publicIp>
      <allocationId>eipalloc-f38a359a</allocationId>
      <domain>vpc</domain>
      <instanceId>i-7a00642e</instanceId>
      <associationId>eipassoc-1f239876</associationId>
      <networkInterfaceId>eni-d83388b1</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.12</privateIpAddress>
    </item>
    <item>
      <publicIp>203.0.113.33</publicIp>
      <allocationId>eipalloc-282d9641</allocationId>
      <domain>vpc</domain>
      <instanceId>i-7a00642e</instanceId>
      <associationId>eipassoc-252d964c</associationId>
      <networkInterfaceId>eni-d83388b1</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.14</privateIpAddress>
    </item>
    <item>
      <publicIp>203.0.113.22</publicIp>
      <allocationId>eipalloc-1266dd7b</allocationId>
      <domain>vpc</domain>
      <instanceId>i-880f6fdc</instanceId>
      <associationId>eipassoc-832e94ea</associationId>
      <networkInterfaceId>eni-af2e94c6</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.47</privateIpAddress>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

```
<publicIp>203.0.113.42 </publicIp>
<allocationId>eipalloc-ff229896</allocationId>
<domain>vpc</domain>
</item>
<item>
<publicIp>203.0.113.53</publicIp>
<allocationId>eipalloc-b463dcdd</allocationId>
<domain>vpc</domain>
<instanceId>i-c844219c</instanceId>
<associationId>eipassoc-d667ddb</associationId>
<networkInterfaceId>eni-ea67dc83</networkInterfaceId>
<networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
<privateIpAddress>10.0.0.174</privateIpAddress>
</item>
<item>
<publicIp>203.0.113.61</publicIp>
<allocationId>eipalloc-bf66dcd6</allocationId>
<domain>vpc</domain>
<instanceId>i-ba6a0dee</instanceId>
<associationId>eipassoc-9c66dcf5</associationId>
<networkInterfaceId>eni-73e05a1a</networkInterfaceId>
<networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
<privateIpAddress>10.0.0.85</privateIpAddress>
</item>
</addressesSet>
</DescribeAddressesResponse>
```

Related Operations

- [AllocateAddress](#) (p. 13)
- [ReleaseAddress](#) (p. 376)
- [AssociateAddress](#) (p. 18)
- [DisassociateAddress](#) (p. 332)

DescribeAvailabilityZones

Description

Displays Availability Zones that are currently available to the account. 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.

You can filter the results to return information only about zones that match criteria you specify. For example, you could filter the results to return only the zones whose state is `available`. You can specify multiple filters (for example, the zone is in a particular Region, and the state is `available`). The result includes information for a particular zone 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>message</code>	Information about the Availability Zone. Type: String
<code>region-name</code>	The Region the Availability Zone is in (for example, <code>us-east-1</code>). Type: String
<code>state</code>	The state of the Availability Zone Type: String Valid values: <code>available</code>
<code>zone-name</code>	The name of the zone. Type: String

Request Parameters

Name	Description	Required
<code>ZoneName.n</code>	One or more Availability Zones. Type: String Default: None	No
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No

Name	Description	Required
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeAvailabilityZonesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>availabilityZoneInfo</code>	A list of Availability Zones, each one wrapped in an <code>item</code> element. Type: AvailabilityZoneItemType (p. 438)

Examples

Example Request

This example displays information about Availability Zones that are available to the account. The results includes zones only in the Region (endpoint) you're currently using.

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

Example Response

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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>
    <item>
      <zoneName>us-east-1c</zoneName>
      <zoneState>available</zoneState>
    </item>
  </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

```
<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 Operations

- [RunInstances](#) (p. 412)
- [DescribeRegions](#) (p. 242)

DescribeBundleTasks

Description

Describes current bundling tasks for instance store-backed Windows instances.

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.

You can filter the results to return information only about tasks that match criteria you specify. For example, you could filter the results to return only the tasks whose state is `complete`. You can specify multiple values for a filter. A bundle task must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the bundle is stored in a particular Amazon S3 bucket and the state is `complete`). The result includes information for a particular bundle task 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>bundle-id</code>	The ID of the bundle task. Type: String
<code>error-code</code>	If the task failed, the error code returned. Type: String
<code>error-message</code>	If the task failed, the error message returned. Type: String
<code>instance-id</code>	The ID of the instance that was bundled. Type: String
<code>progress</code>	The level of task completion, as a percentage (for example, 20%). Type: String
<code>s3-bucket</code>	The Amazon S3 bucket to store the AMI. Type: String
<code>s3-prefix</code>	The beginning of the AMI name. Type: String
<code>start-time</code>	The time the task started (for example, 2008-09-15T17:15:20.000Z). Type: DateTime

Filter Name	Description
state	The state of the task. Type: String Valid values: pending waiting-for-shutdown bundling storing cancelling complete failed
update-time	The time of the most recent update for the task (for example, 2008-09-15T17:15:20.000Z). Type: DateTime

Request Parameters

Name	Description	Required
<i>BundleId.n</i>	One or more bundle task IDs. Type: String Default: If no ID is specified, all bundle tasks are described.	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeBundleTasksResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
bundleInstanceTasksSet	A list of bundle tasks, each one wrapped in an <code>item</code> element. Type: BundleInstanceTaskType (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/2012-08-15/">
  <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 results to display only bundle tasks whose state is either `complete` or `failed`, and in addition are targeted for the Amazon S3 bucket called `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 Operations

- [BundleInstance](#) (p. 41)
- [CancelBundleTask](#) (p. 44)

DescribeConversionTasks

Description

Describes 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

Name	Description	Required
<i>ConversionTaskId.n</i>	One or more conversion task IDs. Type: String	No

Response Elements

The elements in the following table are wrapped in a `DescribeConversionTasksResponse` structure.

Name	Description
<code>conversionTasks</code>	A list of conversion tasks, each one wrapped in an <code>item</code> 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/2012-08-15/">
  <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>
          </image>
        </importVolume>
      </conversionTask>
    </item>
  </conversionTasks>
</DescribeConversionTasksResponse>
```

```
        <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>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
    <statusMessage/>
  </conversionTask>
</item>
</conversionTasks>
</DescribeConversionTasksResponse>
```

Related Operations

- [ImportInstance](#) (p. 344)
- [ImportVolume](#) (p. 350)
- [CancelConversionTask](#) (p. 46)

DescribeCustomerGateways

Description

Gives you information about your VPN customer gateways. You can filter the results to return information only about customer gateways that match criteria you specify. For example, you could get information only about gateways whose state is `pending` or `available`. The customer gateway must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the customer gateway has a particular IP address for the Internet-routable external interface, and the gateway's state is `pending` or `available`). The result includes information for a particular customer gateway only if the gateway matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>bgp-asn</code>	The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN). Type: String
<code>customer-gateway-id</code>	The ID of the customer gateway. Type: String
<code>ip-address</code>	The IP address of the customer gateway's Internet-routable external interface (for example, 12.1.2.3). Type: String
<code>state</code>	The state of the customer gateway. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
<code>type</code>	The type of customer gateway. Currently the only supported type is <code>ipsec.1</code> . Type: String Valid values: <code>ipsec.1</code>
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:key</code>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag Purpose=X, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>

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

Request Parameters

Name	Description	Required
<code>CustomerGatewayId.n</code>	<p>A customer gateway ID. You can specify more than one in the request.</p> <p>Type: String</p> <p>Default: Returns information about all your customer gateways.</p>	No
<code>Filter.n.Name</code>	<p>The name of a filter. See the preceding table for a list of allowed filter names.</p> <p>Type: String</p> <p>Default: Returns information about all your customer gateways or those you specify by ID.</p>	No
<code>Filter.n.Value.m</code>	<p>A value for the filter. See the preceding table for a list of allowed values for each filter.</p> <p>Type: String</p> <p>Default: None</p>	No

Response Elements

The elements in the following table are wrapped in an `DescribeCustomerGatewaysResponse` structure.

Name	Description
<code>requestId</code>	<p>The ID of the request.</p> <p>Type: <code>xsd:string</code></p>
<code>customerGatewaySet</code>	<p>A list of customer gateways, each one wrapped in an <code>item</code> element.</p> <p>Type: CustomerGatewayType (p. 447)</p>

Examples

Example Request

This example gives a description of the customer gateway with ID cgw-b4dc3961.

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

Example Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/" >
  <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 uses filters to give a description of 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 Operations

- [CreateCustomerGateway](#) (p. 57)
- [DeleteCustomerGateway](#) (p. 120)

DescribeDhcpOptions

Description

Gives you information about one or more sets of DHCP options. You can specify one or more DHCP options set IDs, or no IDs (to describe all your sets of DHCP options).

You can filter the results to return information only about sets of options that match criteria you specify. For example, you could get information for sets that have a certain value for the `domain-name` option. You can specify multiple values for the filter. The option must match at least one of the specified values for the options set to be included in the results.

You can specify multiple filters (e.g., a certain value for `domain-name`, and a tag with a certain value). The result includes information for a set of options only if the specified option matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>dhcp-options-id</code>	The ID of a set of DHCP options. Type: String
<code>key</code>	The key for one of the options (for example, <code>domain-name</code>). Type: String
<code>value</code>	The value for one of the options. Type: String
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:key</code>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag Purpose=X, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>

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

Request Parameters

Name	Description	Required
<code>DhcpOptionsId.n</code>	<p>A DHCP options set ID. You can specify more than one in the request.</p> <p>Type: String</p> <p>Default: Returns information about all of your sets of DHCP options, or only those otherwise specified.</p>	No
<code>Filter.n.Name</code>	<p>The name of a filter. See the preceding table for a list of allowed filter names.</p> <p>Type: String</p> <p>Default: Returns information about all your sets of DHCP options, or only those you otherwise specify.</p>	No
<code>Filter.n.Value.m</code>	<p>A value for the filter. See the preceding table for a list of allowed values for each filter.</p> <p>Type: String</p> <p>Default: None</p>	No

Response Elements

The elements in the following table are wrapped in a `DescribeDhcpOptionsResponse` structure.

Name	Description
<code>requestId</code>	<p>The ID of the request.</p> <p>Type: <code>xsd:string</code></p>

Name	Description
dhcpOptionsSet	A list of DHCP options sets, each one wrapped in an <code>item</code> element. Type: DhcpOptionsType (p. 461) Ancestor: <code>DescribeDhcpOptionsResponse</code> Children: <code>item</code>

Examples

Example Request

This example gives a description of the DHCP options set with ID `dopt-7a8b9c2d`.

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

Example Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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>
    </item>
  </dhcpOptionsSet>
  <tagSet/>
```

```
</item>  
</dhcpOptionsSet>  
</DescribeDhcpOptionsResponse>
```

Example Request

This example uses filters to give a description of 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 Operations

- [CreateDhcpOptions](#) (p. 59)
- [AssociateDhcpOptions](#) (p. 21)
- [DeleteDhcpOptions](#) (p. 122)

DescribeExportTasks

Description

Describes your export tasks. If no export task IDs are specified, all export tasks initiated by you are returned.

Request Parameters

Name	Description	Required
<i>ExportTaskId.n</i>	One or more export task IDs. If no task IDs are provided, all active export tasks are described. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeExportTasks` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>exportTaskSet</code>	A list of export tasks, each one wrapped in an item element. Type: ExportTaskResponseType (p. 466)

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/2020-02-02/">
<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 Operations

- [CancelExportTask](#) (p. 48)
- [CreateInstanceExportTask](#) (p. 65)

DescribeImageAttribute

Description

Gets information about an attribute of an AMI. You can get information about only one attribute per call. These are the available attributes:

- **description**—Description of the AMI provided at image creation
- **kernel**—ID of the kernel associated with the AMI
- **ramdisk**—ID of the RAM disk associated with the AMI
- **launchPermission**—Launch permissions for the AMI
- **productCodes**—Product codes associated with the AMI (if any). Each product code contains a product code and a type.
- **blockDeviceMapping**—Block device mapping of the AMI

Request Parameters

Name	Description	Required
<i>ImageId</i>	The ID of the AMI. Type: String Default: None	Yes
<i>Attribute</i>	The AMI attribute. Type: String Default: None Valid values: <code>description kernel ramdisk launchPermission productCodes blockDeviceMapping</code>	Yes

Response Elements

The elements in the following table are wrapped in a `DescribeImageAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>imageId</code>	The ID of the AMI. Type: <code>xsd:string</code>
<code>launchPermission</code>	A list of launch permissions, each one wrapped in an <code>item</code> element. Type: LaunchPermissionItemType (p. 487)
<code>productCodes</code>	A list of product codes, each one wrapped in an <code>item</code> element that contains a product code and a product code type. Type: ProductCodeItemType (p. 504)

Name	Description
kernel	The kernel ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
ramdisk	The RAM disk ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
description	A user-created description of the AMI, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
blockDeviceMapping	One or more block device mapping entries, each one wrapped in an <code>item</code> 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/2012-08-15/">
  <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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
```

Related Operations

- [DescribeImages](#) (p. 187)
- [ModifyImageAttribute](#) (p. 353)
- [ResetImageAttribute](#) (p. 398)

DescribeImages

Description

Describes 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:

Launch Permission	Description
public	The owner of the AMI granted launch permissions for the AMI to the <code>all</code> 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 AMIs returned can be modified by specifying AMI IDs, AMI owners, or AWS accounts with launch permissions. If no options are specified, Amazon EC2 returns all AMIs for which you have launch permissions.

If you specify one or more AMI IDs, only AMIs that have the specified IDs are returned. If you specify an invalid AMI ID, an error is returned. If you specify an AMI ID for which you do not have access, it will not be included in the returned results.

If you specify one or more AMI owners, only AMIs 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 AMIs owned by Amazon or `self`, for AMIs that you own, or `marketplace` for AMIs from the AWS Marketplace.

Note

For an overview of the AWS Marketplace, go to <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 AMIs with launch permissions for those users are returned. You can specify account IDs (if you own the AMI(s)), `self` for AMIs for which you own or have explicit permissions, or `all` for public AMIs.

Note

Deregistered images are included in the returned results for an unspecified interval after deregistration.

You can filter the results to return information only about images that match criteria you specify. For example, you could get information only about images that use a certain kernel. You can specify multiple values for a filter (for example, the image uses either kernel `aki-1a2b3c4d` or kernel `aki-9b8c7d6f`). An image must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the image uses a certain kernel, and uses an Amazon EBS volume as the root device). The result includes information for a particular image only if it matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

Amazon Elastic Compute Cloud API Reference Description

You can use wildcards with the filter values: * matches zero or more characters, and ? 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 table shows the available filters.

Filter Name	Description
<code>architecture</code>	The image architecture. Type: String Valid values: <code>i386</code> <code>x86_64</code>
<code>block-device-mapping.delete-on-termination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean
<code>block-device-mapping.device-name</code>	The device name (for example, <code>/dev/sdh</code>) for the Amazon EBS volume. Type: String
<code>block-device-mapping.snapshot-id</code>	The ID of the snapshot used for the Amazon EBS volume. Type: String
<code>block-device-mapping.volume-size</code>	The volume size of the Amazon EBS volume, in GiB. Type: Integer
<code>block-device-mapping.volume-type</code>	The volume type of the Amazon EBS volume. Type: String Valid values: <code>standard</code> <code>io1</code>
<code>description</code>	The description of the image (provided during image creation). Type: String
<code>image-id</code>	The ID of the image. Type: String
<code>image-type</code>	The image type. Type: String Valid values: <code>machine</code> <code>kernel</code> <code>ramdisk</code>
<code>is-public</code>	Whether the image is public. Type: Boolean
<code>kernel-id</code>	The kernel ID. Type: String
<code>manifest-location</code>	The location of the image manifest. Type: String

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Description

Filter Name	Description
<code>name</code>	The name of the AMI (provided during image creation). Type: String
<code>owner-alias</code>	The AWS account alias (for example, <code>amazon</code>). Type: String
<code>owner-id</code>	The AWS account ID of the image owner. Type: String
<code>platform</code>	The platform. To only list Windows-based AMIs, use <code>windows</code> . Otherwise, leave blank. Type: String Valid value: <code>windows</code>
<code>product-code</code>	The product code. Type: String
<code>product-code.type</code>	The type of the product code. Type: String Valid values: <code>devpay</code> <code>marketplace</code>
<code>ramdisk-id</code>	The RAM disk ID. Type: String
<code>root-device-name</code>	The name of the root device volume (for example, <code>/dev/sda1</code>). Type: String
<code>root-device-type</code>	The type of the root device volume. Type: String Valid values: <code>ebs</code> <code>instance-store</code>
<code>state</code>	The state of the image. Type: String Valid values: <code>available</code> <code>pending</code> <code>failed</code>
<code>state-reason-code</code>	The reason code for the state change. Type: String
<code>state-reason-message</code>	The message for the state change. Type: String

Filter Name	Description
tag-key	<p>The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code>, you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code>, see the <code>tag:key</code> filter later in this table.</p> <p>For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>Type: String</p>
tag-value	<p>The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter.</p> <p>Type: String</p>
tag: <i>key</i>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag <code>Purpose=X</code>, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag <code>Purpose=X</code> OR <code>Purpose=Y</code>, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>
virtualization-type	<p>The virtualization type.</p> <p>Type: String</p> <p>Valid values: <code>paravirtual</code> <code>hvm</code></p>
hypervisor	<p>The hypervisor type.</p> <p>Type: String</p> <p>Valid values: <code>ovm</code> <code>xen</code></p>

Request Parameters

Name	Description	Required
<i>ExecutableBy.n</i>	<p>The AMIs for which the specified user ID has explicit launch permissions. The user ID can be an AWS account ID, <code>self</code> to return AMIs for which the sender of the request has explicit launch permissions, or <code>all</code> to return AMIs with public launch permissions.</p> <p>Type: String</p> <p>Default: None</p>	No

Name	Description	Required
<i>ImageId.n</i>	One or more AMI IDs. Type: String Default: Returns all AMIs, or only those otherwise specified.	No
<i>Owner.n</i>	The AMIs owned by the specified owner. Multiple owner values can be specified. The IDs <code>amazon</code> , <code>aws-marketplace</code> , and <code>self</code> can be used to include AMIs owned by Amazon, AWS Marketplace, or AMIs owned by you, respectively. Type: String Default: None Valid values: <code>amazon</code> <code>aws-marketplace</code> <code>self</code> AWS account ID <code>all</code>	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeImagesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>imagesSet</code>	A list of images, each one wrapped in an <code>item</code> element. Type: DescribeImagesResponseItemType (p. 450)

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-be3adfd7</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>206029621532</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-d3376696</kernelId>
      <ramdiskId>ari-e73766a2</ramdiskId>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <name>getting-started</name>
      <description>Fedora 8 v1.11 i386 lvm-rootVG-rootFS ext3 ec2pnp enabled</de
scription>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-32885f5a</snapshotId>
            <volumeSize>15</volumeSize>
            <deleteOnTermination>>false</deleteOnTermination>
            <volumeType>standard</volumeType>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <tagSet/>
      <hypervisor>xen</hypervisor>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

Example Request

This example filters the results to display 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-dd20c3b4</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>206029621532</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 retruns 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/2012-08-15/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-a2469acf</imageId>
      <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</im
ageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789999</imageOwnerId>
      <isPublic>true</isPublic>
      <productCodes>
        <item>
          <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
      </productCodes>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
```



```
<kernelId>aki-805ea7e9</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-787e9403</snapshotId>
      <volumeSize>8</volumeSize>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<hypervisor>xen</hypervisor>
</item>
...
</imagesSet>
</DescribeImagesResponse>
```

Related Operations

- [DescribeInstances](#) (p. 198)
- [DescribeImageAttribute](#) (p. 184)

DescribeInstanceAttribute

Description

Describes the specified attribute of the specified instance. You can specify only one attribute at a time. These are the available attributes:

- **instanceType**—The instance type (for example, m1.small)
- **kernel**—The ID of the kernel associated with the instance
- **ramdisk**—The ID of the RAM disk associated with the instance
- **userData**—MIME, Base64-encoded user data provided to the instance
- **disableApiTermination**—Whether the instance can be terminated using the Amazon EC2 API (`false` means the instance can be terminated with the API)
- **instanceInitiatedShutdownBehavior**—Whether the instance stops or terminates when an instance shutdown is initiated (default is stop)
- **rootDeviceName**—The name of the root device volume.
- **blockDeviceMapping**—The block device mapping.
- **sourceDestCheck**—This attribute exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled. The value must be `false` for the instance to perform NAT.
- **groupSet**—The security groups the instance belongs to.
- **productCodes**—The product codes associated with the instance. Each product code contains a product code and a type.
- **ebsOptimized**—Whether the instance is optimized for EBS I/O.

Request Parameters

Name	Description	Required
<i>InstanceId</i>	The instance ID. Type: String Default: None	Yes
<i>Attribute</i>	The instance attribute. Type: String Default: None Valid values: <code>instanceType</code> <code>kernel</code> <code>ramdisk</code> <code>userData</code> <code>disableApiTermination</code> <code>instanceInitiatedShutdownBehavior</code> <code>rootDeviceName</code> <code>blockDeviceMapping</code> <code>sourceDestCheck</code> <code>groupSet</code> <code>productCodes</code> <code>ebsOptimized</code>	Yes

Response Elements

The elements in the following table are wrapped in a `DescribeInstanceAttributeResponse` structure.

Amazon Elastic Compute Cloud API Reference
Response Elements

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instanceId</code>	The ID of the instance. Type: <code>xsd:string</code>
<code>instanceType</code>	The instance type (for example, <code>m1.small</code>), wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>kernel</code>	The kernel ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>ramdisk</code>	The RAM disk ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>userData</code>	MIME, Base64-encoded user data, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>disableApiTermination</code>	Indicates whether the instance can be terminated through the Amazon EC2 API. The value is wrapped in a <code>value</code> element. A value of <code>true</code> means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of <code>false</code> means you can. You must modify this attribute before you can terminate any "locked" instances using the API. Type: <code>xsd:boolean</code>
<code>instanceInitiatedShutdownBehavior</code>	If an instance shutdown is initiated, this determines whether the instance stops or terminates. The value is wrapped in a <code>value</code> element. Type: <code>xsd:string</code> Valid values: <code>stop</code> <code>terminate</code>
<code>rootDeviceName</code>	The name of the root device (for example, <code>/dev/sda1</code>), wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>blockDeviceMapping</code>	Any block device mapping entries for the instance, each one wrapped in an <code>item</code> element. Type: InstanceBlockDeviceMappingResponseItemType (p. 474)
<code>sourceDestCheck</code>	This attribute exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the instance to perform NAT. For more information, see NAT Instances in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: <code>xsd:boolean</code>
<code>groupSet</code>	The security groups the instance belongs to. Each group's information is wrapped in an <code>item</code> element. Type: GroupItemType (p. 468)

Name	Description
productCodes	A list of product codes, each one wrapped in an item element that contains a product code and a product code type. Type: ProductCodesSetItemType (p. 504)
ebsOptimized	Whether the instance is optimized for EBS I/O. Type: xsd:boolean

Examples

Example Request

This example lists the kernel ID of the i-10a64379 instance.

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

Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <kernel>
    <value>aki-f70657b2</value>
  </kernel>
</DescribeInstanceAttributeResponse>
```

Related Operations

- [DescribeInstances](#) (p. 198)
- [ModifyInstanceAttribute](#) (p. 356)
- [ResetInstanceAttribute](#) (p. 400)

DescribeInstances

Description

Returns information about instances that you own.

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.

You can filter the results to return information only about instances that match criteria you specify. For example, you could get information about only instances launched with a certain key pair. You can specify multiple values for a filter (for example, the instance was launched with either key pair A or key pair B). An instance must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the instance was launched with a certain key pair and uses an Amazon EBS volume as the root device). An instance must match *all* the filters for it to be included in the results. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: * matches zero or more characters, and ? 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 table shows the available filters.

Filter Name	Description
<code>architecture</code>	The instance architecture. Type: String Valid values: <code>i386</code> <code>x86_64</code>
<code>availability-zone</code>	The Availability Zone of the instance. Type: String
<code>block-device-mapping.attach-time</code>	The attach time for an Amazon EBS volume mapped to the instance (for example, <code>2010-09-15T17:15:20.000Z</code>) Type: DateTime
<code>block-device-mapping.delete-on-termination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean
<code>block-device-mapping.device-name</code>	The device name (for example, <code>/dev/sdh</code>) for the Amazon EBS volume. Type: String
<code>block-device-mapping.status</code>	The status for the Amazon EBS volume. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>

**Amazon Elastic Compute Cloud API Reference
Description**

Filter Name	Description
<code>block-device-mapping.volume-id</code>	The volume ID of the Amazon EBS volume. Type: String
<code>client-token</code>	The idempotency token you provided when you launched the instance. Type: String
<code>dns-name</code>	The public DNS name of the instance. Type: String
<code>group-id</code>	The ID of a EC2 security group the instance is in. This filter does not work for VPC security groups (instead, use <code>instance.group-id</code>). Type: String
<code>group-name</code>	The name of a EC2 security group the instance is in. This filter does not work for VPC security groups (instead, use <code>instance.group-name</code>). Type: String
<code>image-id</code>	The ID of the image used to launch the instance. Type: String
<code>instance-id</code>	The ID of the instance. Type: String
<code>instance-lifecycle</code>	Indicates whether this is a Spot Instance. Type: String Valid values: <code>spot</code>
<code>instance-state-code</code>	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)
<code>instance-state-name</code>	The state of the instance. Type: String Valid values: <code>pending</code> <code>running</code> <code>shutting-down</code> <code>terminated</code> <code>stopping</code> <code>stopped</code>
<code>instance-type</code>	The type of instance (for example, <code>m1.small</code>). Type: String
<code>instance.group-id</code>	The ID of a VPC security group the instance is in. This filter does not work for EC2 security groups (instead, use <code>group-id</code>). Type: String

Amazon Elastic Compute Cloud API Reference
Description

Filter Name	Description
<code>instance.group-name</code>	The name of a VPC security group the instance is in. This filter does not work for EC2 security groups (instead, use <code>group-name</code>). Type: String
<code>ip-address</code>	The public IP address of the instance. Type: String
<code>kernel-id</code>	The kernel ID. Type: String
<code>key-name</code>	The name of the key pair used when the instance was launched. Type: String
<code>launch-index</code>	When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on). Type: String
<code>launch-time</code>	The time the instance was launched (for example, 2010-08-07T11:54:42.000Z). Type: DateTime
<code>monitoring-state</code>	Indicates whether monitoring is enabled for the instance. Type: String Valid values: <code>disabled</code> <code>enabled</code>
<code>owner-id</code>	The AWS account ID of the instance owner. Type: String
<code>placement-group-name</code>	The name of the placement group the instance is in. Type: String
<code>platform</code>	The platform. Use <code>windows</code> if you have Windows based instances; otherwise, leave blank. Type: String Valid value: <code>windows</code>
<code>private-dns-name</code>	The private DNS name of the instance. Type: String
<code>private-ip-address</code>	The private IP address of the instance. Type: String
<code>product-code</code>	The product code associated with the AMI used to launch the instance. Type: String

Amazon Elastic Compute Cloud API Reference
Description

Filter Name	Description
<code>product-code.type</code>	The type of product code. Type: String Valid values: <code>devpay</code> <code>marketplace</code>
<code>ramdisk-id</code>	The RAM disk ID. Type: String
<code>reason</code>	The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the <code>state-reason-code</code> filter. Type: String
<code>requester-id</code>	The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on) Type: String
<code>reservation-id</code>	The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you'll get one reservation ID. If you launch ten instances using the same launch request, you'll also get one reservation ID. Type: String
<code>root-device-name</code>	The name of the root device for the instance (for example, <code>/dev/sda1</code>). Type: String
<code>root-device-type</code>	The type of root device the instance uses. Type: String Valid values: <code>ebs</code> <code>instance-store</code>
<code>source-dest-check</code>	Indicates whether the instance performs source/destination checking. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the instance to perform Network Address Translation (NAT) in your VPC. Type: Boolean
<code>spot-instance-request-id</code>	The ID of the Spot Instance request. Type: String
<code>state-reason-code</code>	The reason code for the state change. Type: String

**Amazon Elastic Compute Cloud API Reference
Description**

Filter Name	Description
state-reason-message	A message that describes the state change. Type: String
subnet-id	The ID of the subnet the instance is in (if using Amazon Virtual Private Cloud). Type: String
tag-key	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String
tag: <i>key</i>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag <code>Purpose=X</code> , specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag <code>Purpose=X OR Purpose=Y</code> , specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
virtualization-type	The virtualization type of the instance. Type: String Valid values: <code>paravirtual</code> <code>hvm</code>
vpc-id	The ID of the VPC the instance is in (if using Amazon Virtual Private Cloud). Type: String
hypervisor	The hypervisor type of the instance. Type: String Valid values: <code>ovm</code> <code>xen</code>

Amazon Elastic Compute Cloud API Reference
Description

Filter Name	Description
<code>network-interface.description</code>	The description of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.subnet-id</code>	The ID of the subnet of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.vpc-id</code>	The ID of the Amazon VPC of the network interface. (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.network-interface-id</code>	The ID of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.owner-id</code>	The ID of the owner of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.availability-zone</code>	The availability zone of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.requester-id</code>	The requester ID of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.requester-managed</code>	Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on). This filter is available only in Amazon Virtual Private Cloud. Type: Boolean
<code>network-interface.status</code>	The status of the network interface (available only in Amazon Virtual Private Cloud). Type: String Valid Values: available in-use
<code>network-interface.mac-address</code>	The MAC address of the network interface (available only in Amazon Virtual Private Cloud). Type: String Valid Values: available in-use
<code>network-interface-private-dns-name</code>	The private DNS name of the network interface (available only in Amazon Virtual Private Cloud). Type: String

Amazon Elastic Compute Cloud API Reference
Description

Filter Name	Description
<code>network-interface.source-destination-check</code>	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 (available only in Amazon Virtual Private Cloud). Type: Boolean
<code>network-interface.group-id</code>	The ID of a VPC security group associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.group-name</code>	The name of a VPC security group associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.attachment.attachment-id</code>	The ID of the interface attachment (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.attachment.instance-id</code>	The ID of the instance to which the network interface is attached (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.attachment.instance-owner-id</code>	The owner ID of the instance to which the network interface is attached (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.addresses.private-ip-address</code>	The private IP address associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.attachment.device-index</code>	The device index to which the network interface is attached (available only in Amazon Virtual Private Cloud). Type: Integer
<code>network-interface.attachment.status</code>	The status of the attachment. (available only in Amazon Virtual Private Cloud). Type: String Valid values: attaching attached detaching detached
<code>network-interface.attachment.attach-time</code>	The time that the network interface was attached to an instance (available only in Amazon Virtual Private Cloud). Type: Date

Amazon Elastic Compute Cloud API Reference
Request Parameters

Filter Name	Description
<code>network-interface.attachment.delete-on-termination</code>	Specifies whether the attachment is deleted when an instance is terminated (available only in Amazon Virtual Private Cloud). Type: Boolean
<code>network-interface.addresses.primary</code>	Specifies whether the IP address of the network interface is the primary private IP address (available only in Amazon Virtual Private Cloud). Type: Boolean
<code>network-interface.addresses.association.public-ip</code>	The ID representing the association of a VPC Elastic IP address with a network interface in a VPC (available only in Amazon Virtual Private Cloud). Type: String
<code>network-interface.addresses.association.ip-owner-id</code>	The owner ID of the private IP address associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>association.public-ip</code>	The address of the Elastic IP address bound to the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>association.ip-owner-id</code>	The owner of the Elastic IP address associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>association.allocation-id</code>	The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>association.association-id</code>	The association ID returned when the network interface was associated with an IP address (available only in Amazon Virtual Private Cloud). Type: String

Request Parameters

Name	Description	Required
<code>InstanceId.n</code>	One or more instance IDs. Type: String Default: Returns all instances, or only those otherwise specified.	No

Name	Description	Required
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>reservationSet</code>	A list of reservations, each one wrapped in an <code>item</code> element. Type: ReservationInfoType (p. 507)

Examples

Example Request

This example describes the current state of the instances owned by your AWS account.

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

Example Response

```
<DescribeInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-15/' >
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-0ece705a</reservationId>
      <ownerId>053230519467</ownerId>
      <groupSet/>
      <instancesSet>
        <item>
          <instanceId>i-7a00642e</instanceId>
          <imageId>ami-1cd4924e</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
<privateDnsName/>
<dnsName/>
<reason/>
<keyName>VPCKey</keyName>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>c1.medium</instanceType>
<launchTime>2012-06-28T17:41:48.000Z</launchTime>
<placement>
  <availabilityZone>ap-southeast-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<platform>windows</platform>
<monitoring>
  <state>disabled</state>
</monitoring>
<subnetId>subnet-c53c87ac</subnetId>
<vpcId>vpc-cc3c87a5</vpcId>
<privateIpAddress>10.0.0.12</privateIpAddress>
<ipAddress>46.51.219.63</ipAddress>
<sourceDestCheck>>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-374b565b</groupId>
    <groupName>quick-start-3</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-9e151bfc</volumeId>
      <status>attached</status>
      <attachTime>2012-06-28T17:42:05.000Z</attachTime>
      <deleteOnTermination>>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>JNlxa1340905307390</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>SingleENI</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-d83388b1</networkInterfaceId>
    <subnetId>subnet-c53c87ac</subnetId>
    <vpcId>vpc-cc3c87a5</vpcId>
    <description>Primary network interface</description>
    <ownerId>053230519467</ownerId>
```

```
<status>in-use</status>
<privateIpAddress>10.0.0.12</privateIpAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-374b565b</groupId>
    <groupName>quick-start-3</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-31b87358</attachmentId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2012-06-28T17:41:48.000Z</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<association>
  <publicIp>46.51.219.63</publicIp>
  <ipOwnerId>053230519467</ipOwnerId>
</association>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <primary>true</primary>
    <association>
      <publicIp>46.51.219.63</publicIp>
      <ipOwnerId>053230519467</ipOwnerId>
    </association>
  </item>
  <item>
    <privateIpAddress>10.0.0.14</privateIpAddress>
    <primary>false</primary>
    <association>
      <publicIp>46.51.221.177</publicIp>
      <ipOwnerId>053230519467</ipOwnerId>
    </association>
  </item>
</privateIpAddressesSet>
</item>
</networkInterfaceSet>
</item>
</instancesSet>
</item>
<item>
  <reservationId>r-58b30a0c</reservationId>
  <ownerId>053230519467</ownerId>
  <groupSet>
    <item>
      <groupId>sg-aa4170f8</groupId>
      <groupName>quick-start-5</groupName>
    </item>
  </groupSet>
  <instancesSet>
    <item>
      <instanceId>i-507f1804</instanceId>
      <imageId>ami-70d49222</imageId>
      <instanceState>
        <code>16</code>
      </instanceState>
    </item>
  </instancesSet>
</item>
</reservationSet>
</item>
</instancesSet>
</item>
</instancesSet>
```

```
        <name>running</name>
      </instanceState>
      <privateDnsName>ip-10-139-34-251.ap-southeast-1.compute.intern
al.privateDnsName>
      <dnsName>ec2-122-248-233-255.ap-southeast-1.compute.amazon
aws.com/dnsName>
      <reason/>
      <keyName>EC2Key</keyName>
      <amiLaunchIndex>0</amiLaunchIndex>
      <productCodes/>
      <instanceType>t1.micro</instanceType>
      <launchTime>2012-06-29T22:53:42.000Z</launchTime>
      <placement>
        <availabilityZone>ap-southeast-1a</availabilityZone>
        <groupName/>
        <tenancy>default</tenancy>
      </placement>
      <platform>windows</platform>
      <monitoring>
        <state>disabled</state>
      </monitoring>
      <privateIpAddress>10.139.34.251</privateIpAddress>
      <ipAddress>122.248.233.255</ipAddress>
      <groupSet>
        <item>
          <groupId>sg-aa4170f8</groupId>
          <groupName>quick-start-5</groupName>
        </item>
      </groupSet>
      <architecture>x86_64</architecture>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <volumeId>vol-a22b3ac0</volumeId>
            <status>attached</status>
            <attachTime>2012-06-29T22:54:02.000Z</attachTime>
            <deleteOnTermination>true</deleteOnTermination>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>hvm</virtualizationType>
      <clientToken>clNwH1341010421443</clientToken>
      <tagSet>
        <item>
          <key>Name</key>
          <value>EC2 Instance</value>
        </item>
      </tagSet>
      <hypervisor>xen</hypervisor>
      <networkInterfaceSet/>
    </item>
  </instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```


Example Request

This example filters the results to display only the m1.small or m1.large instances that have an Amazon EBS volume that is both attached and set to delete 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 Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservationSet>
    <item>
      <reservationId>r-bc7e30d7</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-2eac845a</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-c7cd56ad</instanceId>
          <imageId>ami-b232d0db</imageId>
          <instanceState>
            <code>l6</code>
            <name>running</name>
          </instanceState>
          <privateDnsName>domU-12-31-39-01-76-06.compute-1.intern
al</privateDnsName>
          <dnsName>ec2-72-44-52-124.compute-1.amazonaws.com</dnsName>
          <keyName>GSG_Keypair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>m1.small</instanceType>
          <launchTime>2010-08-17T01:15:16.000Z</launchTime>
          <placement>
            <availabilityZone>us-east-1b</availabilityZone>
          </placement>
          <kernelId>aki-94c527fd</kernelId>
          <ramdiskId>ari-96c527ff</ramdiskId>
          <monitoring>
            <state>disabled</state>
          </monitoring>
          <privateIpAddress>10.255.121.240</privateIpAddress>
          <ipAddress>72.44.52.124</ipAddress>
          <sourceDestCheck>true</sourceDestCheck>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
<groupSet>
  <item>
    <groupId>sg-2eac845a</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<architecture>i386</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-a482c1cd</volumeId>
      <status>attached</status>
      <attachTime>2010-08-17T01:15:26.000Z</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping/>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

Example Request

The following example describes an instance running in Amazon VPC with instance ID i-7a00642e.

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-id
&Filter.1.Value.1=i-7a00642e
&AUTHPARAMS
```

Example Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7f5f05d5-1a11-4ca9-9608-07dd351487a5</requestId>
  <reservationSet>
    <item>
      <reservationId>r-0ece705a</reservationId>
      <ownerId>053230519467</ownerId>
      <groupSet/>
      <instancesSet>
        <item>
          <instanceId>i-7a00642e</instanceId>
          <imageId>ami-1cd4924e</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
</instanceState>
<privateDnsName/>
<dnsName/>
<reason/>
<keyName>VPCKey</keyName>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>c1.medium</instanceType>
<launchTime>2012-06-28T17:41:48.000Z</launchTime>
<placement>
  <availabilityZone>ap-southeast-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<platform>windows</platform>
<monitoring>
  <state>disabled</state>
</monitoring>
<subnetId>subnet-c53c87ac</subnetId>
<vpcId>vpc-cc3c87a5</vpcId>
<privateIpAddress>10.0.0.12</privateIpAddress>
<ipAddress>46.51.219.63</ipAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-374b565b</groupId>
    <groupName>quick-start-3</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-9e151bfc</volumeId>
      <status>attached</status>
      <attachTime>2012-06-28T17:42:05.000Z</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>JNlxa1340905307390</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>SingleENI</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-d83388b1</networkInterfaceId>
    <subnetId>subnet-c53c87ac</subnetId>
    <vpcId>vpc-cc3c87a5</vpcId>
    <description>Primary network interface</description>
```

```
<ownerId>053230519467</ownerId>
<status>in-use</status>
<privateIpAddress>10.0.0.12</privateIpAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-374b565b</groupId>
    <groupName>quick-start-3</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-31b87358</attachmentId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2012-06-28T17:41:48.000Z</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<association>
  <publicIp>46.51.219.63</publicIp>
  <ipOwnerId>053230519467</ipOwnerId>
</association>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <primary>true</primary>
    <association>
      <publicIp>46.51.219.63</publicIp>
      <ipOwnerId>053230519467</ipOwnerId>
    </association>
  </item>
  <item>
    <privateIpAddress>10.0.0.14</privateIpAddress>
    <primary>false</primary>
    <association>
      <publicIp>46.51.221.177</publicIp>
      <ipOwnerId>053230519467</ipOwnerId>
    </association>
  </item>
</privateIpAddressesSet>
</item>
</networkInterfaceSet>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

Related Operations

- [RunInstances](#) (p. 412)
- [StopInstances](#) (p. 425)
- [StartInstances](#) (p. 423)
- [TerminateInstances](#) (p. 427)

DescribeInstanceStatus

Description

Describes the status of an Amazon EC2 instance including any scheduled events for an instance. 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 three 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 instance's 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 will return 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.

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.

You can filter the results to return information only about instances that match criteria you specify. For example, you could get information about instances in a specific Availability Zone. You can specify multiple values for a filter (for example, more than one Availability Zone). An instance must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the instance is in a specific Availability Zone and its status is set to `retiring`). An instance must match *all* the filters for it to be included in the results. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>availability-zone</code>	The Availability Zone of the instance. Type: String
<code>event.code</code>	The code identifying the type of event. Type: String Valid values: <code>instance-reboot</code> <code>system-reboot</code> <code>system-maintenance</code> <code>instance-retirement</code>
<code>event.description</code>	A description of the event. Type: String
<code>event.not-after</code>	The latest end time for the scheduled event. Type: <code>dateType</code>
<code>event.not-before</code>	The earliest start time for the scheduled event. Type: <code>dateType</code>
<code>instance-state-name</code>	The state of the instance. Type: String Valid values: <code>pending</code> <code>running</code> <code>shutting-down</code> <code>terminated</code> <code>stopping</code> <code>stopped</code>
<code>instance-state-code</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)
<code>system-status.status</code>	The system status of the instance. Type: String Valid values: <code>ok</code> <code>impaired</code> <code>initializing</code> <code>insufficient-data</code> <code>not-applicable</code>
<code>system-status.reachability</code>	Filters on system status where the name is <code>reachability</code> . Type: String Valid values: <code>passed</code> <code>failed</code> <code>initializing</code> <code>insufficient-data</code>
<code>instance-status.status</code>	The status of the instance. Type: String Valid values: <code>ok</code> <code>impaired</code> <code>initializing</code> <code>insufficient-data</code> <code>not-applicable</code>

Filter Name	Description
<code>instance-status.reachability</code>	Filters on instance status where the name is <code>reachability</code> . Type: String Valid values: <code>passed</code> <code>failed</code> <code>initializing</code> <code>insufficient-data</code>

Request Parameters

Name	Description	Required
<i>InstanceId</i>	The list of instance IDs. If not specified, all instances are described. Type: String Default: None Constraints: Maximum 100 explicitly specified instance IDs.	No
<i>IncludeAllInstances</i>	When <code>true</code> , returns the health status for all instances (for example, running, stopped, pending, shutting down). When <code>false</code> , returns only the health status for running instances. Type: Boolean Default: <code>false</code>	No
<i>MaxResults</i>	The maximum number of paginated instance items per response. Type: Integer Default: 1000	No
<i>NextToken</i>	The next paginated set of results to return. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeInstanceStatusResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>InstanceStatusSet</code>	A set of InstanceStatusItemType (p. 478) elements that describe the status of each instance.
<i>NextToken</i>	A string specifying the next paginated set of results to return. Type: <code>xsd:string</code>

Examples

Example Request

This example returns instance status descriptions for all instances.

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&Version=2011-10-01  
&AuthParams
```

Example Request

This example returns instance status descriptions for the specified instances.

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&InstanceId.0=i-0cf27c63  
&InstanceId.1=i-283f9f47  
&Version=2011-10-01  
&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=2011-10-01  
&AuthParams
```

Example Response

```
<DescribeInstanceStatusResponse xmlns='http://ec2.amazonaws.com/doc/2012-04-01/'>  
  <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02f</requestId>  
  <instanceStatusSet>  
    <item>  
      <instanceId>i-283f9f47</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>2012-03-27T16:10:46.000Z</impairedSince>
    </item>
</details>
</systemStatus>
<instanceStatus>
    <status>impaired</status>
    <details>
        <item>
            <name>reachability</name>
            <status>failed</status>
            <impairedSince>2012-03-27T16:10:46.000Z</impairedSince>
        </item>
    </details>
</instanceStatus>
<eventsSet>
    <code>instance-retirement</code>
    <notBefore>2011-12-05T13:00:00+0000</notBefore>
    <notAfter>2011-12-06T13:00:00+000</notAfter>
    <description>
        The instance is running on degraded hardware
    </description>
</eventsSet>
</item>
<item>
    <instanceId>i-d2e36dbd</instanceId>
    <availabilityZone>us-east-1d</availabilityZone>
    <instanceState>
        <code>16</code>
        <name>running</name>
    </instanceState>
    <systemStatus>
        <status>ok</status>
        <details>
            <item>
                <name>reachability</name>
                <status>passed</status>
            </item>
        </details>
    </systemStatus>
    <instanceStatus>
        <status>ok</status>
        <details>
            <item>
                <name>reachability</name>
                <status>passed</status>
            </item>
        </details>
    </instanceStatus>
    <eventsSet>
        <code>instance-reboot</code>
        <notBefore>2011-12-05T13:00:00+0000</notBefore>
        <notAfter>2011-12-06T13:00:00+000</notAfter>
        <description>
            The instance is scheduled for a reboot
        </description>
    </eventsSet>
</item>
</eventsSet>
```

```
        </description>
      </eventsSet>
    </item>
    <item>
      <instanceId>i-9fa454f1</instanceId>
      <availabilityZone>us-east-1c</availabilityZone>
      <instanceState>
        <code>l6</code>
        <name>running</name>
      </instanceState>
      <systemStatus>
        <status>ok</status>
        <details>
          <item>
            <name>reachability</name>
            <status>passed</status>
          </item>
        </details>
      </systemStatus>
      <instanceStatus>
        <status>ok</status>
        <details>
          <item>
            <name>reachability</name>
            <status>passed</status>
          </item>
        </details>
      </instanceStatus>
    </item>
    <item>
      <instanceId>i-0ed2936e</instanceId>
      <availabilityZone>us-east-1c</availabilityZone>
      <instanceState>
        <code>l6</code>
        <name>running</name>
      </instanceState>
      <systemStatus>
        <status>ok</status>
        <details>
          <item>
            <name>reachability</name>
            <status>passed</status>
          </item>
        </details>
      </systemStatus>
      <instanceStatus>
        <status>insufficient-data</status>
        <details>
          <item>
            <name>reachability</name>
            <status>insufficient-data</status>
          </item>
        </details>
      </instanceStatus>
    </item>
  </instanceStatusSet>
</DescribeInstanceStatusResponse>
```

DescribeInternetGateways

Description

Gives you information about your Internet gateways. You can filter the results to return information only about Internet gateways that match criteria you specify. For example, you could get information only about gateways with particular tags. The Internet gateway must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the Internet gateway is attached to a particular VPC and is tagged with a particular value). The result includes information for a particular Internet gateway only if the gateway matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>attachment.state</code>	The current state of the attachment between the gateway and the VPC. Returned only if a VPC is attached. Type: String Valid value: <code>available</code>
<code>attachment.vpc-id</code>	The ID of an attached VPC. Type: String
<code>internet-gateway-id</code>	The ID of the Internet gateway. Type: String
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:key</code>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag Purpose=X, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>

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

Request Parameters

Name	Description	Required
<code>InternetGatewayId.n</code>	<p>One or more Internet gateway IDs.</p> <p>Type: String</p> <p>Default: None</p>	No
<code>Filter.n.Name</code>	<p>The name of a filter. See the preceding table for a list of allowed filter names.</p> <p>Type: String</p> <p>Default: None</p>	No
<code>Filter.n.Value.m</code>	<p>A value for the filter. See the preceding table for a list of allowed filter values for each filter.</p> <p>Type: String</p> <p>Default: None</p>	No

Response Elements

The elements in the following table are wrapped in a `DescribeInternetGatewaysResponse` structure.

Name	Description
<code>requestId</code>	<p>The ID of the request.</p> <p>Type: xsd:string</p>
<code>internetGatewaysSet</code>	<p>A list of Internet gateways, each one wrapped in an <code>item</code> element.</p> <p>Type: InternetGatewayType (p. 485)</p>

Examples

Example Request

This example describes your Internet gateways.

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

Example Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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 Operations

- [CreateInternetGateway](#) (p. 68)
- [DeleteInternetGateway](#) (p. 124)
- [DetachInternetGateway](#) (p. 25)
- [DetachInternetGateway](#) (p. 322)

DescribeKeyPairs

Description

Returns information about key pairs available to you. If you specify key pairs, information about those key pairs is returned. Otherwise, information for all your key pairs is returned.

You can filter the results to return information only about key pairs that match criteria you specify. For example, you could filter the results to return only the key pairs whose names include the string `Dave`. You can specify multiple values for a filter. A key pair must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the key pair name includes the string `Dave`, and the fingerprint equals a certain value). The result includes information for a particular key pair 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>fingerprint</code>	The fingerprint of the key pair. Type: String
<code>key-name</code>	The name of the key pair. Type: String

Request Parameters

Name	Description	Required
<code>KeyName.n</code>	One or more key pair names. Type: String Default: Describes all key pairs you own, or only those otherwise specified.	No
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeKeyPairsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>keySet</code>	A list of key pairs, each one wrapped in an <code>item</code> element. Type: DescribeKeyPairsResponseItem (p. 452)

Examples

Example Request

This example describes the keypair with name `gsg-keypair`.

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=gsg-keypair
&AUTHPARAMS
```

Example Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>gsg-keypair</keyName>
      <keyFingerprint>
        00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
      </keyFingerprint>
    </item>
  </keySet>
</DescribeKeyPairsResponse>
```

Example Request

This example filters the results to display 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 Operations

- [CreateKeyPair](#) (p. 70)
- [ImportKeyPair](#) (p. 348)

- [DeleteKeyPair](#) (p. 126)

DescribeNetworkAcls

Description

Gives you information about the network ACLs in your VPC.

You can filter the results to return information only about ACLs that match criteria you specify. For example, you could get information only about the ACL associated with a particular subnet. The ACL must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the ACL is associated with a particular subnet and has an egress entry that denies traffic to a particular port). The result includes information for a particular ACL 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 with the filter values: * matches zero or more characters, and ? 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 table shows the available filters.

Filter Name	Description
<code>association.association-id</code>	The ID of an association ID for the ACL. Type: String
<code>association.network-acl-id</code>	The ID of the network ACL involved in the association. Type: String
<code>association.subnet-id</code>	The ID of the subnet involved in the association. Type: String
<code>default</code>	Indicates whether the ACL is the default network ACL in the VPC. Type: Boolean
<code>entry.cidr</code>	The CIDR range specified in the entry. Type: String
<code>entry.egress</code>	Indicates whether the entry applies to egress traffic. Type: Boolean
<code>entry.icmp.code</code>	The ICMP code specified in the entry, if any. Type: Integer
<code>entry.icmp.type</code>	The ICMP type specified in the entry, if any. Type: Integer
<code>entry.port-range.from</code>	The start of the port range specified in the entry. Type: Integer
<code>entry.port-range.to</code>	The end of the port range specified in the entry. Type: Integer

Amazon Elastic Compute Cloud API Reference
Description

Filter Name	Description
<code>entry.protocol</code>	The protocol specified in the entry. Type: String Valid values: <code>tcp</code> <code>udp</code> <code>icmp</code> or a protocol number
<code>entry.rule-action</code>	Indicates whether the entry allows or denies the matching traffic. Type: String Valid Values: <code>allow</code> <code>deny</code>
<code>entry.rule-number</code>	The number of an entry (i.e., rule) in the ACL's set of entries. Type: Integer
<code>network-acl-id</code>	The ID of the network ACL. Type: String
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String
<code>tag:key</code>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag <code>Purpose=X</code> , specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag <code>Purpose=X</code> OR <code>Purpose=Y</code> , specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>vpc-id</code>	The ID of the VPC the network ACL is in. Type: String

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

Request Parameters

Name	Description	Required
<i>NetworkAclId.n</i>	One or more network ACL IDs. Type: string Default: None	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed filter values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeNetworkAclsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>networkAclSet</code>	A list of network ACLs, each one wrapped in an <code>item</code> element. Type: NetworkAclType (p. 493)

Examples

Example Request

This example describes all the network ACLs in your VPC.

```
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/2012-08-15/">
  <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>
    <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>
  </entrySet>
</item>
```

```
<item>
  <ruleNumber>110</ruleNumber>
  <protocol>6</protocol>
  <ruleAction>allow</ruleAction>
  <egress>>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
  <portRange>
    <from>80</from>
    <to>80</to>
  </portRange>
</item>
<item>
  <ruleNumber>120</ruleNumber>
  <protocol>6</protocol>
  <ruleAction>allow</ruleAction>
  <egress>>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
  <portRange>
    <from>443</from>
    <to>443</to>
  </portRange>
</item>
<item>
  <ruleNumber>32767</ruleNumber>
  <protocol>all</protocol>
  <ruleAction>deny</ruleAction>
  <egress>>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
</item>
</entrySet>
<associationSet>
  <item>
    <networkAclAssociationId>aclassoc-5c659635</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-ff669596</subnetId>
  </item>
  <item>
    <networkAclAssociationId>aclassoc-c26596ab</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-f0669599</subnetId>
  </item>
</associationSet>
<tagSet/>
</item>
</networkAclSet>
</DescribeNetworkAclsResponse>
```

Related Operations

- [CreateNetworkAcl](#) (p. 72)
- [DeleteNetworkAcl](#) (p. 128)
- [ReplaceNetworkAclAssociation](#) (p. 378)
- [CreateNetworkAclEntry](#) (p. 74)
- [DeleteNetworkAclEntry](#) (p. 130)
- [ReplaceNetworkAclEntry](#) (p. 380)

DescribeNetworkInterfaceAttribute

Description

Describes a network interface attribute. Only one attribute can be specified per call.

Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The ID of the network interface. Type: String Default: None	Yes
<i>Attribute</i>	The attribute of the network interface. Type: String Default: None Valid values: <code>description</code> <code>groupSet</code> <code>sourceDestCheck</code> <code>attachment</code>	Yes

Response Elements

The elements in the following table are wrapped in a `DescribeNetworkInterfaceAttribute` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>networkInterfaceId</code>	The ID of the network interface. Type: <code>xsd:string</code>

Examples

Example Request

This example describes the attributes of a network interface.

```
http://ec2.us-east-1.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute&NetworkInterfaceId=eni-686ea200&Attribute=sourceDestCheck&AUTH_PARAMS
```

Example Response

```
<DescribeNetworkInterfaceAttributeResponse
  xmlns="http://ec2.amazonaws.com/doc/2011-12-15/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
```

```
<sourceDestCheck>  
  <value>true</value>  
</sourceDestCheck>  
</DescribeNetworkInterfaceAttributeResponse>
```

Related Operations

- [AttachNetworkInterface](#) (p. 27)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 77)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

DescribeNetworkInterfaces

Description

Provides information about one or more network interfaces.

You can filter the results to return information only about network interfaces that match criteria you specify. For example, you could get information about only network interfaces launched in a specific Availability Zone. You can specify multiple values for a filter (for example, more than one Availability Zone). A network interface must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the network interface is in a specific Availability Zone, and its owner ID matches a specific owner ID). A network interface must match all the filters for it to be included in the results. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>addresses.private-ip-address</code>	The private IP addresses associated with the network interface. Type: String
<code>addresses.primary</code>	Whether the private IP address is the primary IP address associated with the network interface. Type: Boolean Valid Values: true false
<code>addresses.association.public-ip</code>	The association ID returned when the network interface was associated with the Elastic IP address. Type: String
<code>addresses.association.owner-id</code>	The owner ID of the addresses associated with the network interface. Type: String
<code>association.association-id</code>	The association ID returned when the network interface was associated with an IP address. Type: String
<code>association.allocation-id</code>	The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface. Type: String
<code>association.ip-owner-id</code>	The owner of the Elastic IP address associated with the network interface. Type: String

**Amazon Elastic Compute Cloud API Reference
Description**

Filter Name	Description
<code>association.public-ip</code>	The address of the Elastic IP address bound to the network interface. Type: String
<code>attachment.attachment-id</code>	The ID of the interface attachment. Type: String
<code>attachment.instance-id</code>	The ID of the instance to which the network interface is attached. Type: String
<code>attachment.instance-owner-id</code>	The owner ID of the instance to which the network interface is attached. Type: String
<code>attachment.device-index</code>	The device index to which the network interface is attached. Type: Integer
<code>attachment.status</code>	The status of the attachment. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>
<code>attachment.attach.time</code>	The time that the network interface was attached to an instance. Type: Date
<code>attachment.delete-on-termination</code>	Indicates whether the attachment is deleted when an instance is terminated. Type: Boolean
<code>availability-zone</code>	The Availability Zone of the network interface. Type: String
<code>description</code>	The description of the network interface. Type: String
<code>group-id</code>	The ID of a VPC security group associated with the network interface. Type: String
<code>group-name</code>	The name of a VPC security group associated with the network interface. Type: String
<code>mac-address</code>	The MAC address of the network interface. Type: String
<code>network-interface-id</code>	The ID of the network interface. Type: String

**Amazon Elastic Compute Cloud API Reference
Description**

Filter Name	Description
<code>owner-id</code>	The AWS account ID of the network interface owner. Type: String
<code>private-ip-address</code>	The private IP address or addresses of the network interface. Type: String
<code>private-dns-name</code>	The private DNS name of the network interface. Type: String
<code>requester-id</code>	The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on). Type: String
<code>requester-managed</code>	Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on). Type: Boolean
<code>source-dest-check</code>	Indicates whether the network interface performs source/destination checking. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the network interface to perform Network Address Translation (NAT) in your VPC. Type: Boolean
<code>status</code>	The status of the network interface. If the network interface is not attached to an instance, the status shows <code>available</code> ; if a network interface is attached to an instance the status shows <code>in-use</code> . Type: String Valid values: <code>available</code> <code>in-use</code>
<code>subnet-id</code>	The ID of the subnet that the network interface is in. Type: String
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String

Filter Name	Description
tag-value	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String
tag: <i>key</i>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
vpc-id	The ID of the VPC that the network interface is in. Type: String

Request Parameters

Name	Description	Required
NetworkInterfaceId.n	One or more network interface IDs. Type: String Default: None	No
Filter.n.Name	The filter name. Type: String Default: None	No
Filter.n.Value.n	The filter value. Type: String Default: None	No

Response Elements

Name	Description
requestId	The ID of the request. Type: xsd:string
networkInterfaceSet	Returns information about the network interfaces. Type: InstanceNetworkInterfaceSetItemRequestType (p. 481)

Examples

Example Request

This example describes network interfaces.

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

Example Response

```
<DescribeNetworkInterfacesResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-15/'>
  <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>
      <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>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

```
    </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 Operations

- [AttachNetworkInterface](#) (p. 27)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 77)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

DescribePlacementGroups

Description

Returns information about one or more placement groups in your account. For more information about placement groups and cluster instances, see [Using Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can filter the results to return information only about placement groups that match criteria you specify. For example, you could filter the results to return only the groups whose state is `deleted`. You can specify multiple values for a filter. A placement group must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the group's state is `deleted` and the name includes the string `Project`). The result includes information for a particular 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>group-name</code>	The name of the placement group. Type: String
<code>state</code>	The state of the placement group. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
<code>strategy</code>	The strategy of the placement group. Type: String Valid value: <code>cluster</code>

Request Parameters

Name	Description	Required
<code>GroupName.n</code>	One or more placement group names. Type: string Default: Describes all your placement groups, or only those otherwise specified.	No
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No

Name	Description	Required
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribePlacementGroupsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>placementGroupSet</code>	A list of placement groups, each one wrapped in an <code>item</code> element. Type: PlacementGroupInfoType (p. 499)

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/2012-08-15/">
  <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 results to display 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
```

Related Operations

- [CreatePlacementGroup](#) (p. 82)
- [DeletePlacementGroup](#) (p. 134)

DescribeRegions

Description

Describes Regions that are currently available to the account.

You can use filters with this call just as you can with other "describe" calls.

You can use wildcards with the filter values: * matches zero or more characters, and ? 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 table shows the available filters.

Filter Name	Description
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

Request Parameters

Name	Description	Required
<i>RegionName.n</i>	One or more Region names. Type: String Default: Describes all Regions available to the account.	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeRegionsResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string

Name	Description
regionInfo	A list of Regions, each one wrapped in an <code>item</code> element. Type: RegionItemType (p. 506)

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/2012-08-15/">
  <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/2012-08-15/">
  <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 Operations

- [DescribeAvailabilityZones](#) (p. 167)
- [RunInstances](#) (p. 412)

DescribeReservedInstances

Description

Describes 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*.

You can filter the results to return information about Reserved Instances that matches criteria you specify. For example, you could get information about Reserved Instances in a particular Availability Zone. Or you can specify multiple values for a filter. A Reserved Instance must match at least one of the specified values for it to be included in the results.

You can specify multiple filters as well. For example, you could specify that your Reserved Instance must be in a particular Availability Zone and must be tagged with a particular value. The result includes information for a particular instance only if it matches *all* of your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>availability-zone</code>	The Availability Zone where the Reserved Instance can be used. Type: String
<code>duration</code>	The duration of the Reserved Instance (one year or three years), in seconds. Type: <code>xs:long</code> Valid values: <code>31536000 94608000</code>
<code>fixed-price</code>	The purchase price of the Reserved Instance (for example, <code>9800.0</code>) Type: <code>xs:double</code>
<code>instance-type</code>	The instance type on which the Reserved Instance can be used. Type: String
<code>product-description</code>	The product description of the Reserved Instance. Type: String Valid values: <code>Linux/UNIX Linux/UNIX (Amazon VPC) Windows Windows (Amazon VPC)</code>

**Amazon Elastic Compute Cloud API Reference
Description**

Filter Name	Description
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=X, see the tag:key filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results 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: xs:double

Request Parameters

Name	Description	Required
<i>ReservedInstancesId.n</i>	One or more Reserved Instance IDs. Type: String Default: Describes all your Reserved Instances, or only those otherwise specified.	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No
<i>offeringType</i>	The Reserved Instance offering type. Type: String Valid values: Heavy Utilization Medium Utilization Light Utilization	No

Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>reservedInstancesSet</code>	A list of Reserved Instances, each one wrapped in an <code>item</code> element. Type: DescribeReservedInstancesResponseSetItemType (p. 456)

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    <item>
      <reservedInstancesId>4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8EXAMPLE</reservedInstancesId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>1820.0</fixedPrice>
      <usagePrice>0.24</usagePrice>
      <instanceCount>3</instanceCount>
      <productDescription>Linux/UNIX</productDescription>
      <state>active</state>
      <tagSet/>
    </item>
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

Example Request

This example filters the results to display only one-year, m1.small Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with Amazon 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/UNIX
&AUTHPARAMS
```

Related Operations

- [PurchaseReservedInstancesOffering](#) (p. 367)
- [DescribeReservedInstancesOfferings](#) (p. 253)

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*.

We provide filters for all *describe* calls and commands so that you can limit the results to your specified criteria. Therefore, you can use filters to limit the results when describing Reserved Instances listings, even though you can use the regular request parameters to perform similar tasks.

For example, you could use either the regular request parameters or a filter to get the listing of Reserved Instances that are in an active state. You can also specify multiple request parameters or multiple filters (for example, to limit the results to the Reserved Instances listings that are in the closed state with a specific status message). The result includes information for a particular offering only if it matches *all* of your request parameters or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: * matches zero or more characters, and ? 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 table shows the available filters.

Filter Name	Description
<code>status</code>	Status of the Reserved Instance listing. Valid Values: pending active cancelled closed. Type: String
<code>status-message</code>	Reason for the status. Type: String
<code>reserved-instances-listing-id</code>	The ID of the Reserved Instances listing. Type: String
<code>reserved-instances-id</code>	The ID of the Reserved Instances. Type: String

Request Parameters

Name	Description	Required
<i>ReservedInstancesListingId.n</i>	The information about the Reserved Instance listing wrapped in an <code>item</code> element. Type: DescribeReservedInstancesListingSetItemType (p. 454) Default: None	No
<i>ReservedInstancesId.n</i>	The set of Reserved Instances IDs which are used to see associated listings. Type: DescribeReservedInstancesSetItemType (p. 458) Default: None	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesListingsResponseType` structure.

Name	Description
<code>requestId</code>	The ID of the request to describe Reserved Instance listing. Type: String
<code>reservedInstancesListingsSet</code>	The Reserved Instance listing information wrapped in an <code>item</code> element. Type: DescribeReservedInstancesListingsResponseSetItemType (p. 453)

Examples

Example Request

This example shows all the listings associated with your account.

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

Example Response

```
<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942c9ef5c83</reservedInstancesListingId>
      <reservedInstancesId>af9f760e-64a5-4739-b416-a27540bf4b19</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>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

```
    <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 Operations

- [CancelReservedInstancesListing](#) (p. 50)
- [CreateReservedInstancesListing](#) (p. 84)

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*.

Our policy is to provide filters for all *describe* calls so that you can limit the results to your specified criteria. Therefore, you can use filters to limit the results when describing Reserved Instances offerings, even though you can use the regular request parameters to do something similar.

For example, you could use the regular request parameters or a filter to get the offerings for a particular instance type. You can specify multiple request parameters or multiple filters (for example, limit the results to the `m2.xlarge` instance type, and only for Windows instances). The result includes information for a particular offering only if it matches *all* of your request parameters or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
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 <code>true</code> 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

Request Parameters

Name	Description	Required
<i>ReservedInstancesOfferingId.n</i>	One or more Reserved Instances offering IDs. Type: String Default: None	No
<i>InstanceType</i>	The Amazon EC2 instance type on which the Reserved Instance can be used. Type: String Default: None	No

**Amazon Elastic Compute Cloud API Reference
Request Parameters**

Name	Description	Required
<i>AvailabilityZone</i>	The Availability Zone in which the Reserved Instance can be used. Type: String Default: None	No
<i>ProductDescription</i>	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	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No
<i>InstanceTenancy</i>	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	No
<i>OfferingType</i>	The Reserved Instance offering type. Type: String Valid Values: Heavy Utilization Medium Utilization Light Utilization Default: none	No
<i>IncludeMarketplace</i>	Include Marketplace offerings in the response. Type: Boolean Default: true	No
<i>MinDuration</i>	Minimum duration (in seconds) to filter when searching for offerings. Type: Long Default: 2592000 (1 month)	No
<i>MaxDuration</i>	Maximum duration (in seconds) to filter when searching for offerings. Type: Long Default: 94608000 (3 years)	No

Name	Description	Required
<i>MaxInstanceCount</i>	Maximum number of instances to filter when searching for offerings. Type: Integer Default: 20	No
<i>NextToken</i>	Token to use when requesting the next paginated set of offerings. Type: String Default: First page of results if the string is empty.	No
<i>MaxResults</i>	Maximum number of offerings to return per call. Type: Integer Default: 1000 Maximum: 1000	No

Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesOfferingsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>reservedInstancesOfferingsSet</code>	A list of Reserved Instances offerings. Each offering's information is wrapped in an <code>item</code> element. Type: DescribeReservedInstancesOfferingsResponseSetItemType (p. 454)
<code>nextToken</code>	Specifies 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.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX&
```

```
&Version=2012-08-15  
&AUTHPARAMS
```

Note

When using the Query API the "/" is denoted as "%2F".

This is the response listing Reserved Instance Marketplace offerings only.

```
<DescribeReservedInstancesOfferingsResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-15/' >  
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>  
  <reservedInstancesOfferingsSet>  
    <item>  
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841c726be4c</reservedInstancesOfferingId>  
      <instanceType>m1.large</instanceType>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <duration>90720000</duration>  
      <fixedPrice>4083.333333</fixedPrice>  
      <usagePrice>0.124</usagePrice>  
      <productDescription>Linux/UNIX</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Light Utilization</offeringType>  
      <recurringCharges/>  
      <marketplace>true</marketplace>  
      <pricingDetailsSet>  
        <item>  
          <price>4083.333333</price>  
          <count>1</count>  
        </item>  
      </pricingDetailsSet>  
    </item>  
    <item>  
      <reservedInstancesOfferingId>9948307c-4e03-4ffb-8bd3-8dea689513cb</reservedInstancesOfferingId>  
      <instanceType>m1.xlarge</instanceType>  
      <availabilityZone>us-east-1b</availabilityZone>  
      <duration>28512000</duration>  
      <fixedPrice>430.0</fixedPrice>  
      <usagePrice>0.312</usagePrice>  
      <productDescription>Linux/UNIX</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Light Utilization</offeringType>  
      <recurringCharges/>  
      <marketplace>true</marketplace>  
      <pricingDetailsSet>  
        <item>  
          <price>430.0</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`.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&Version=2012-08-15
&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.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&Version=2012-08-15
&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-
a6400ea2a8f4</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>1200.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Heavy Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.052</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>e5a2ff3b-a4f3-477c-8928-dbd0016cad
db</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
```

```
<availabilityZone>us-east-1a</availabilityZone>
<duration>94608000</duration>
<fixedPrice>1000.0</fixedPrice>
<usagePrice>0.076</usagePrice>
<productDescription>Linux/UNIX (Amazon VPC)</productDescription>
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>Medium Utilization</offeringType>
<recurringCharges/>
<marketplace>>false</marketplace>
<pricingDetailsSet/>
</item>
...
</reservedInstancesOfferingsSet>
<nextToken>h/C8YKPBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

Then, you can use the `nextToken` to fetch the next page. The request should look like the following example.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&NextToken=h/C8YKPBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=
&Version=2012-08-15
&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-
38ffe8469244</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>425.2</fixedPrice>
      <usagePrice>0.124</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>248e7b75-579e-4599-a34d-
cb6aa9ba2ac8</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>780.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
```

```
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>Heavy Utilization</offeringType>
<recurringCharges>
  <item>
    <frequency>Hourly</frequency>
    <amount>0.064</amount>
  </item>
</recurringCharges>
<marketplace>>false</marketplace>
<pricingDetailsSet/>
</item>
...
</reservedInstancesOfferingsSet>
<nextToken>69AJRhm9bxVUF8YCKAs2HsQjyqa246eTkVv23eNFTKw=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

Example Request

This example describes available Reserved Instance offerings.

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

Example Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2012-08-15/">
  <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 results to display only one-year, m1.small or m1.large Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with Amazon 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/UNIX
&AUTHPARAMS
```

Related Operations

- [PurchaseReservedInstancesOffering](#) (p. 367)
- [DescribeReservedInstances](#) (p. 245)

DescribeRouteTables

Description

Gives you information about your route tables. You can filter the results to return information only about tables that match criteria you specify. For example, you could get information only about a table associated with a particular subnet. You can specify multiple values for the filter. The table must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the table has a particular route, and is associated with a particular subnet). The result includes information for a particular table 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>association.route-table-association-id</code>	The ID of an association ID for the route table. Type: String
<code>association.route-table-id</code>	The ID of the route table involved in the association. Type: String
<code>association.subnet-id</code>	The ID of the subnet involved in the association. Type: String
<code>association.main</code>	Indicates whether the route table is the main route table in the VPC. Type: Boolean
<code>route-table-id</code>	The ID of the route table. Type: String
<code>route.destination-cidr-block</code>	The CIDR range specified in a route in the table. Type: String
<code>route.gateway-id</code>	The ID of a gateway specified in a route in the table. Type: String
<code>route.instance-id</code>	The ID of an instance specified in a route in the table. Type: String

Filter Name	Description
<code>route.origin</code>	<p>Describes how the route was created.</p> <p>Type: String</p> <p>Valid values: <code>CreateRouteTable</code> <code>CreateRoute</code> <code>EnableVgwRoutePropogation</code></p> <p><code>CreateRouteTable</code> indicates that route was automatically created when the route table was created.</p> <p><code>CreateRoute</code> indicates that the route was manually added to the route table.</p> <p><code>EnableVgwRoutePropogation</code> indicates that the route was propagated by route propagation.</p>
<code>route.state</code>	<p>The state of a route in the route table. The <code>blackhole</code> 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).</p> <p>Type: String</p> <p>Valid values: <code>active</code> <code>blackhole</code></p>
<code>tag-key</code>	<p>The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code>, you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code>, see the <code>tag:key</code> filter later in this table.</p> <p>For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>Type: String</p>
<code>tag-value</code>	<p>The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter.</p> <p>Type: String</p>
<code>tag:key</code>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag <code>Purpose=X</code>, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag <code>Purpose=X</code> OR <code>Purpose=Y</code>, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>

Filter Name	Description
vpc-id	The ID of the VPC the route table is in. Type: String

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

Request Parameters

Name	Description	Required
<i>RouteTableId.n</i>	One or more route table IDs. Type: string Default: Returns all route tables, or only those otherwise specified.	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed filter values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeRouteTablesResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
routeTableSet	A list of route tables, each one wrapped in an <code>item</code> element. Type: RouteTableType (p. 510)

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/2012-08-15/"
  <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>
      <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 Operations

- [AssociateRouteTable](#) (p. 23)
- [DisassociateRouteTable](#) (p. 334)
- [DeleteRouteTable](#) (p. 138)
- [CreateRouteTable](#) (p. 91)
- [ReplaceRouteTableAssociation](#) (p. 385)

DescribeSecurityGroups

Description

Returns information about security groups in your account. This includes both EC2 security groups and VPC security groups. For information about how the two types of groups differ, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

You can filter the results to return information only about security groups that match criteria you specify. For example, you could get information about groups whose name contains a particular string. You can specify multiple values for a filter. A security group must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the group's name contains a particular string, and the group gives permission to another security group with a different string in its name). The result includes information for a particular group only if it matches *all* your filters. 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, let's say you want to get all groups that have access on port 22. And let's say 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), GroupA is not returned in the results. It is only returned in the results if you specify `ip-permission.from-port=20` or `ip-permission.to-port=30` (or both).

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>description</code>	The description of the security group. Type: String
<code>group-id</code>	The ID of the security group. Type: String
<code>group-name</code>	The name of the security group. Type: String
<code>ip-permission.cidr</code>	The CIDR range that has been granted the permission. Type: String
<code>ip-permission.from-port</code>	The start of port range for the TCP and UDP protocols, or an ICMP type number. Type: String

Filter Name	Description
<code>ip-permission.group-name</code>	The name of security group that has been granted the permission. Type: String
<code>ip-permission.protocol</code>	The IP protocol for the permission. Type: String Valid values: <code>tcp</code> <code>udp</code> <code>icmp</code> or a protocol number
<code>ip-permission.to-port</code>	The end of port range for the TCP and UDP protocols, or an ICMP code. Type: String
<code>ip-permission.user-id</code>	The ID of an AWS account that has been granted the permission. Type: String
<code>owner-id</code>	The AWS account ID of the owner of the security group. Type: String
<code>tag-key</code>	The key of a tag assigned to the security group. Type: String
<code>tag-value</code>	The value of a tag assigned to the security group. Type: String

Request Parameters

Name	Description	Required
<i>GroupName.n</i>	One or more security group names. Type: String Default: Describes all groups you own, or only those otherwise specified.	No
<i>GroupId.n</i>	One or more security group IDs. Type: String Default: Describes all groups you own, or only those otherwise specified.	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeSecurityGroupsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>securityGroupInfo</code>	A list of security groups, each one wrapped in an <code>item</code> element. Type: SecurityGroupItemType (p. 515)

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>111122223333</ownerId>
      <groupId>sg-443d0a12</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/>
      <tagSet/>
    </item>
    <item>
```

```
<ownerId>111122223333</ownerId>
<groupId>sg-5ff8a023</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-99gh4012</groupId>
        <groupName>Group B</groupName>
      </item>
    </groups>
    <ipRanges/>
  </item>
</ipPermissions>
<ipPermissionsEgress/>
<tagSet/>
</item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

Example Request

This example returns information about 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 Operations

- [CreateSecurityGroup](#) (p. 93)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [RevokeSecurityGroupIngress](#) (p. 409)
- [DeleteSecurityGroup](#) (p. 140)

DescribeSnapshotAttribute

Description

Returns information about an attribute of a snapshot. You can get information about only one attribute per call.

Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the Amazon EBS snapshot. Type: String Default: None	Yes
<i>Attribute</i>	The snapshot attribute. Type: String Default: None Valid values: <code>createVolumePermission</code> <code>productCodes</code>	Yes

Response Elements

The elements in the following table are wrapped in a `DescribeSnapshotAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>snapshotId</code>	The ID of the Amazon EBS snapshot. Type: <code>xsd:string</code>
<code>createVolumePermission</code>	A list of permissions for creating volumes from the snapshot. Each permission is wrapped in an <code>item</code> element. Type: CreateVolumePermissionItemType (p. 445)
<code>productCodes</code>	A list of product codes. Each product code is wrapped in an <code>item</code> element type that contains a product code and a type. Type: ProductCodesSetItemType (p. 504)

Examples

Example Request

This example describes permissions for the `snap-78a54011` snapshot.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-78a54011
&Attribute=createVolumePermission
&AUTHPARAMS
```

Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-78a54011</snapshotId>
  <createVolumePermission>
    <item>
      <group>all</group>
    </item>
  </createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

Example Request

This example describes product codes associated with the snap-78a12345 snapshot.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-78a12345
&Attribute=productCodes
&AUTHPARAMS
```

Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-04-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-78a12345</snapshotId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeSnapshotAttributeResponse>
```

Related Operations

- [ModifySnapshotAttribute](#) (p. 361)
- [DescribeSnapshots](#) (p. 273)
- [ResetSnapshotAttribute](#) (p. 404)
- [CreateSnapshot](#) (p. 95)

DescribeSnapshots

Description

Returns information about 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 3 categories:

Permission	Description
public	The owner of the snapshot granted create volume permissions for the snapshot to the <code>all</code> 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.

You can filter the results to return information only about snapshots that match criteria you specify. For example, you could get information about snapshots whose status is `pending`. You can specify multiple values for a filter (for example, the snapshot's status is either `pending` or `completed`). A snapshot must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the snapshot's status is `pending`, and it is tagged with a particular value). The result includes information for a particular snapshot 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

**Amazon Elastic Compute Cloud API Reference
Description**

Filter Name	Description
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=X, see the tag:key filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results 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

Filter Name	Description
volume-size	The size of the volume, in GiB (for example, 20). Type: String

Request Parameters

Name	Description	Required
<i>SnapshotId.n</i>	One or more snapshot IDs. Type: String Default: Describes snapshots for which you have launch permissions.	No
<i>Owner.n</i>	Returns the snapshots owned by the specified owner. Multiple owners can be specified. Type: String Valid values: <code>self</code> <code>amazon</code> AWS Account ID Default: None	No
<i>RestorableBy.n</i>	One or more AWS accounts IDs that can create volumes from the snapshot. Type: String Default: None	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeSnapshotsResponse` structure.

Name	Description
requestId	The ID of the request. Type: <code>xsd:string</code>
snapshotSet	A list of snapshots. Each snapshot is wrapped in an <code>item</code> element. Type: DescribeSnapshotsSetItemResponseType (p. 458)

Examples

Example Request

This example describes snapshot `snap-78a54011`.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-78a54011
&AUTHPARAMS
```

Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-78a54011</snapshotId>
      <volumeId>vol-4d826724</volumeId>
      <status>pending</status>
      <startTime>2008-05-07T12:51:50.000Z</startTime>
      <progress>80&#x0025;</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>10</volumeSize>
      <description>Daily Backup</description>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

Example Request

This example filters the results to display 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-8875daef</volumeId>
      <status>pending</status>
      <startTime>2010-07-29T04:12:01.000Z</startTime>
      <progress>30%</progress>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

```
<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 Operations

- [CreateSnapshot](#) (p. 95)
- [DeleteSnapshot](#) (p. 142)

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

The `DescribeSpotDatafeedSubscription` operation does not have any request parameters.

Response Elements

The elements in the following table are wrapped in a `DescribeSpotDatafeedSubscriptionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotDatafeedSubscription</code>	The Spot Instance datafeed subscription. Type: SpotDatafeedSubscriptionType (p. 516)

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix>spotdata</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

Related Operations

- [CreateSpotDatafeedSubscription](#) (p. 98)

- [DeleteSpotDatafeedSubscription](#) (p. 144)

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*.

You can filter the results to return information only about Spot Instance requests that match criteria you specify. For example, you could get information about requests where the Spot Price you specified is a certain value (however, you can't use greater than or less than comparison, but you can use * and ? wildcards). You can specify multiple values for a filter. A Spot Instance request must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the Spot Price is equal to a particular value, and the instance type is m1.small). The result includes information for a particular request 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 with the filter values: * matches zero or more characters, and ? 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 table shows the available filters.

Filter Name	Description
<code>availability-zone-group</code>	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
<code>create-time</code>	The time stamp when the Spot Instance request was created. Type: String
<code>fault-code</code>	The fault code related to the request. Type: String
<code>fault-message</code>	The fault message related to the request. Type: String
<code>instance-id</code>	The ID of the instance that fulfilled the request. Type: String
<code>launch-group</code>	The Spot Instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String
<code>launch.block-device-mapping.delete-on-termination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean

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Filter Name	Description
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 the instance is in. 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 (available only in Amazon Virtual Private Cloud). Type: String
launch.network-interface.device-index	The index of the device for the network interface attachment on the instance (available only in Amazon Virtual Private Cloud). Type: Integer
launch.network-interface.subnet-id	The ID of the subnet that the instance is in (available only in Amazon Virtual Private Cloud). Type: String

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Description

Filter Name	Description
<code>launch.network-interface.description</code>	A description of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>launch.network-interface.private-ip-address</code>	The primary private IP address of the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>launch.network-interface.delete-on-termination</code>	Whether the network interface is deleted when the instance is terminated (available only in Amazon Virtual Private Cloud). Type: Boolean
<code>launch.network-interface.group-id</code>	The ID of the security group associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>launch.network-interface.group-name</code>	The name of the security group associated with the network interface (available only in Amazon Virtual Private Cloud). Type: String
<code>launch.network-interface.addresses.primary</code>	Whether the IP address is the primary private IP address (available only in Amazon Virtual Private Cloud). Type: String
<code>product-description</code>	The product description associated with the instance. Type: String Valid values: Linux/UNIX Windows
<code>spot-instance-request-id</code>	The Spot Instance request ID. Type: String
<code>spot-price</code>	The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String
<code>state</code>	The state of the Spot Instance request. Type: String Valid values: active cancelled open closed failed

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Filter Name	Description
tag-key	<p>The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code>, you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code>, see the <code>tag:key</code> filter later in this table.</p> <p>For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>Type: String</p>
tag-value	<p>The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter.</p> <p>Type: String</p>
tag: <i>key</i>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag <code>Purpose=X</code>, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag <code>Purpose=X</code> OR <code>Purpose=Y</code>, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>
type	<p>The type of Spot Instance request.</p> <p>Type: String</p> <p>Valid values: <code>one-time</code> <code>persistent</code></p>
launched-availability-zone	<p>The Availability Zone in which the bid is launched.</p> <p>Type: String</p> <p>Valid values: <code>us-east-1a</code>, etc.</p>
valid-from	<p>The start date of the request.</p> <p>Type: DateTime</p>
valid-until	<p>The end date of the request.</p> <p>Type: DateTime</p>

Request Parameters

Name	Description	Required
<i>SpotInstanceRequestId.n</i>	One or more Spot Instance request IDs. Type: String Default: None	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeSpotInstanceRequestsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotInstanceRequestSet</code>	A list of Spot Instance requests. Each request is wrapped in an <code>item</code> element. Type: SpotInstanceRequestSetItemType (p. 517)
<code>networkInterfaceSet</code>	Information about the network interface. Type: InstanceNetworkInterfaceSetItemRequestType (p. 481)

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/2012-08-15/"
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotInstanceRequestSet>
  <item>
    <spotInstanceRequestId>sir-e1471206</spotInstanceRequestId>
    <spotPrice>0.09</spotPrice>
    <type>one-time</type>
    <state>active</state>
    <launchSpecification>
      <imageId>ami-813968c4</imageId>
      <groupSet>
        <item>
          <groupId>sg-xxxxxxx</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <instanceType>m1.small</instanceType>
      <monitoring>
        <enabled>>false</enabled>
      </monitoring>
      <ebsOptimized>>false</ebsOptimized>
    </launchSpecification>
    <instanceId>i-992cf7dd</instanceId>
    <createTime>2010-09-13T23:50:44.000Z</createTime>
    <productDescription>Linux/UNIX</productDescription>
    <launchedAvailabilityZone>us-east-1c</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
```

Related Operations

- [RequestSpotInstances](#) (p. 390)
- [CancelSpotInstanceRequests](#) (p. 53)
- [DescribeSpotPriceHistory](#) (p. 286)

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.

Note

Our policy is to provide filters for all "describe" calls so you can limit the results to your specified criteria. Therefore, you can use filters to limit the results when describing Spot Price histories, even though you can use the regular request parameters to do something similar.

For example, you could use the regular request parameters or a filter to get the history for a particular instance type. You can specify multiple request parameters or multiple filters (for example, limit the results to the m2.xlarge instance type, and only for Windows instances). The result includes information for a particular price history only if it matches *all* your request parameters or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>instance-type</code>	The type of instance (for example, m1.small). Type: String
<code>product-description</code>	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)
<code>spot-price</code>	The Spot Price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported). Type: String
<code>timestamp</code>	The timestamp of the Spot Price history (for example, 2010-08-16T05:06:11.000Z). You can use wildcards (<code>*</code> and <code>?</code>). Greater than or less than comparison is not supported. Type: DateTime
<code>availability-zone</code>	The Availability Zone for which prices should be returned. Type: String

Request Parameters

Name	Description	Required
<i>StartTime</i>	The start date and time of the Spot Instance price history data. Type: DateTime Default: None	No
<i>EndTime</i>	The end date and time of the Spot Instance price history data. Type: DateTime Default: None	No
<i>InstanceType.n</i>	The instance type to return. Type: String Valid values: <code>m1.small</code> <code>m1.large</code> <code>m1.xlarge</code> <code>c1.medium</code> <code>c1.xlarge</code> <code>m2.xlarge</code> <code>m2.2xlarge</code> <code>m2.4xlarge</code> <code>t1.micro</code> Default: None	No
<i>ProductDescription.n</i>	Filters the results by basic product description. Type: String Valid values: <code>Linux/UNIX</code> <code>SUSE Linux</code> <code>Windows</code> <code>Linux/UNIX (Amazon VPC)</code> <code>SUSE Linux (Amazon VPC)</code> <code>Windows (Amazon VPC)</code> Default: Returns all information	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No
<i>AvailabilityZone</i>	Filters the results by availability zone. Type: String Valid values: <code>us-east-1a</code> , etc. Default: None	No
<i>MaxResults</i>	Specifies the number of rows to return. Type: int Valid values: 0 Default: None	No

Name	Description	Required
<i>NextToken</i>	Specifies the next set of rows to return. Type: String Valid values: A NextToken value returned by a previous call of the API. Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeSpotPriceHistoryResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
spotPriceHistorySet	A list of historical Spot Prices. Each price is wrapped in an <code>item</code> element. Type: SpotPriceHistorySetItemType (p. 519)
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 request 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/2012-08-15/">
  <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 Operations

- [DescribeSpotInstanceRequests](#) (p. 280)
- [RequestSpotInstances](#) (p. 390)
- [CancelSpotInstanceRequests](#) (p. 53)

DescribeSubnets

Description

Gives you information about your subnets. You can filter the results to return information only about subnets that match criteria you specify. For example, you could get information only about subnets whose state is `available`. You can specify multiple values for the filter. The subnet must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the subnet is in a particular VPC, and the subnet's state is `available`). The result includes information for a particular subnet 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>availability-zone</code>	The Availability Zone the subnet is in. Type: String
<code>available-ip-address-count</code>	The number of IP addresses in the subnet that are available. Type: String
<code>cidr</code>	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, <code>/28</code>)
<code>state</code>	The state of the subnet. Type: String Valid values: <code>pending</code> <code>available</code>
<code>subnet-id</code>	The ID of the subnet. Type: String
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag: <i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>vpc-id</code>	The ID of the VPC the subnet is in. Type: String

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

Request Parameters

Name	Description	Required
<code>SubnetId.n</code>	A subnet ID. You can specify more than one in the request. Type: String Default: Returns information about all your subnets	No
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your subnets or those you specify by ID.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in an `DescribeSubnetsResponsestructure`.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>

Name	Description
subnetSet	A list of subnets. Each subnet is wrapped in an <code>item</code> element. Type: SubnetType (p. 521)

Examples

Example Request

This example gives a description of two subnets with 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/2012-08-15/">
  <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>250</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <tagSet/>
    </item>
    <item>
      <subnetId>subnet-6e7f829e</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/24</cidrBlock>
      <availableIpAddressCount>250</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <tagSet/>
    </item>
  </subnetSet>
</DescribeSubnetsResponse>
```

Example Request

This example uses filters to give a description of any subnet you own that is in the VPC with 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 Operations

- [CreateSubnet](#) (p. 100)
- [DeleteSubnet](#) (p. 145)

DescribeTags

Description

Lists your tags. For more information about tags, see [Using Tags](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can use filters to limit the results when describing tags. For example, you could get only the tags for a particular resource type. You can specify multiple values for a filter. A tag must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, limit the results to a specific resource type, and get only tags with values that contain the string `database`). The result includes information for a particular tag 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>key</code>	The tag key. Type: String
<code>resource-id</code>	The resource ID. Type: String
<code>resource-type</code>	The resource type. Type: String Valid values: <code>customer-gateway dhcp-options image instance internet-gateway network-acl reserved-instances route-table security-group snapshot spot-instances-request subnet volume vpc vpn-connection vpn-gateway</code>
<code>value</code>	The tag value. Type: String

Request Parameters

Name	Description	Required
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No

Name	Description	Required
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeTagsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>tagSet</code>	A list of tags. Each tag is wrapped in an <code>item</code> element. Type: TagSetItemType (p. 522)

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/2012-08-15/">
  <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>
  </tagSet>
</DescribeTagsResponse>
```

```
<item>
  <resourceId>i-5f4e3d2a</resourceId>
  <resourceType>instance</resourceType>
  <key>stack</key>
  <value>Production</value>
</item>
<item>
  <resourceId>i-12345678</resourceId>
  <resourceType>instance</resourceType>
  <key>database_server</key>
  <value/>
</item>
<item>
  <resourceId>i-12345678</resourceId>
  <resourceType>instance</resourceType>
  <key>stack</key>
  <value>Test</value>
</item>
</tagSet>
</DescribeTagsResponse>
```

Example Request

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

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

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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/2012-08-15/">
  <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 *?ebsserver* 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/2012-08-15/">
  <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/2012-08-15/">
  <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 Operations

- [CreateTags](#) (p. 102)
- [DeleteTags](#) (p. 147)

DescribeVolumes

Description

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

You can filter the results to return information only about volumes that match criteria you specify. For example, you could get information about volumes whose status is `available`. You can specify multiple values for a filter (for example, the volume's status is either `available` or `in-use`). A volume must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the volume's status is `available`, and it is tagged with a particular value). The result includes information for a particular volume 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>attachment.attach-time</code>	The time stamp when the attachment initiated. Type: DateTime
<code>attachment.delete-on-termination</code>	Whether the volume is deleted on instance termination. Type: Boolean
<code>attachment.device</code>	The device name that is exposed to the instance (for example, <code>/dev/sda1</code>). Type: String
<code>attachment.instance-id</code>	The ID of the instance the volume is attached to. Type: String
<code>attachment.status</code>	The attachment state. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>
<code>availability-zone</code>	The Availability Zone in which the volume was created. Type: String
<code>create-time</code>	The time stamp when the volume was created. Type: DateTime
<code>size</code>	The size of the volume, in GiB (for example, 20). Type: String

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Filter Name	Description
snapshot-id	The snapshot from which the volume was created. Type: String
status	The status of the volume. Type: String Valid values: <code>creating</code> <code>available</code> <code>in-use</code> <code>deleting</code> <code>deleted</code> <code>error</code>
tag-key	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String
tag: <i>key</i>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag <code>Purpose=X</code> , specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag <code>Purpose=X</code> OR <code>Purpose=Y</code> , specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
volume-id	The volume ID. Type: String
volume-type	The Amazon EBS volume type. If the volume is an <code>io1</code> volume, the response includes the IOPS as well. Type: String Valid values: <code>standard</code> <code>io1</code>

Request Parameters

Name	Description	Required
<i>VolumeId.n</i>	One or more volume IDs. Type: String Default: Describes all volumes that you own, or only those otherwise specified.	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `DescribeVolumesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>volumeSet</code>	A list of volumes. Each volume is wrapped in an <code>item</code> element. Type: DescribeVolumesSetItemResponseType (p. 459)

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeSet>
    <item>
      <volumeId>vol-4282672b</volumeId>
      <size>80</size>
```

```
<snapshotId/>
<availabilityZone>us-east-1a</availabilityZone>
<status>in-use</status>
<createTime>2008-05-07T11:51:50.000Z</createTime>
<attachmentSet>
  <item>
    <volumeId>vol-4282672b</volumeId>
    <instanceId>i-6058a509</instanceId>
    <device>/dev/sdh</device>
    <status>attached</status>
    <attachTime>2008-05-07T12:51:50.000Z</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
```

Related Operations

- [CreateVolume](#) (p. 104)
- [DeleteVolume](#) (p. 150)
- [AttachVolume](#) (p. 29)
- [DetachVolume](#) (p. 326)

DescribeVolumeAttribute

Description

Describes an attribute of the volume.

Currently, volumes have two attributes, `autoEnableIO` and `productCodes`. You can only specify the description of a single attribute.

Request Parameters

Name	Description	Required
<i>VolumeId</i>	The ID of the volume. Type: String Default: None	Yes
<i>Attribute</i>	The instance attribute. Type: String Default: None Valid values: <code>autoEnableIO</code> <code>productCodes</code>	Yes

Response Elements

The elements in the following table are wrapped in a `DescribeVolumeAttributeResponse` structure. Only one attribute (either `autoEnableIO` or `productCodes` is returned, depending on what attribute you specified.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>volumeId</code>	The ID of the volume. Type: <code>xsd:string</code>
<code>autoEnableIO</code>	The state of <code>autoEnableIO</code> attribute. Type: <code>NullableAttributeBooleanValueType</code>
<code>productCodes</code>	A list of product codes. Each product code is wrapped in an <code>item</code> element that contains a product code and a type. Type: <code>ProductCodesSetItemType</code> (p. 504)

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/2012-08-15/">
  <requestId>5jkd074-37ed-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/2012-08-15/">
  <requestId>5jkd074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <productCodes>
    <item>
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
```

Related Operations

- [DescribeVolumeStatus](#) (p. 306)
- [ModifyVolumeAttribute](#) (p. 363)

DescribeVolumeStatus

Description

Returns the status of one or more 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`, 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 only has one status check. It does not check volume state as reported by `DescribeVolumes`. Therefore, it does not detect volumes in the `ERROR` state (i.e., when a volume is incapable of accepting I/Os because it is in an error state.)

You can filter the results to return information only about volumes that match criteria you specify. For example, you could get information about volumes that have `impaired` status. You can specify multiple values for a filter (for example, more than one Availability Zone). A volume must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (for example, the volume is in a specific Availability Zone and its status is set to `impaired`). A volume must match *all* the filters for it to be included in the results. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>availability-zone</code>	The Availability Zone of the instance. Type: String

Filter Name	Description
<code>volume-status.status</code>	The status of the volume. Type: String Valid values: <code>ok</code> <code>impaired</code> <code>insufficient-data</code>
<code>volume-status.details-name</code>	The cause for the <code>volume-status.status</code> . Type: String Valid values: <code>io-enabled</code>
<code>volume-status.details-status</code>	The status of the <code>volume-status.details-name</code> . Type: String Valid values: <code>passed</code> <code>failed</code>
<code>event.description</code>	A description of the event. Type: String
<code>event.not-after</code>	The latest end time for the event. Type: <code>dateType</code>
<code>event.not-before</code>	The earliest start time for the event. Type: <code>dateType</code>
<code>event.event-id</code>	The event ID. Type: String
<code>event.event-type</code>	The event type, for example, <code>potential-data-inconsistency</code> Type: String
<code>action.code</code>	The action code for the event, for example, <code>enable-volume-io</code> Type: String
<code>action.event-id</code>	The event ID associated with the action. Type: String
<code>action.description</code>	A description of the action. Type: String

Request Parameters

Name	Description	Required
<code>VolumeId.n</code>	One or more volume IDs. Type: String Default: Describes all volumes that you own, or only those otherwise specified.	No

Name	Description	Required
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	The value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No
<i>MaxResults</i>	The maximum number of paginated volume items per response. Type: Integer Default: None	No
<i>NextToken</i>	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	No

Response Elements

The elements in the following table are wrapped in a `DescribeVolumeStatusResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>volumeStatusSet</code>	A list of volumes. Each volume is wrapped in an <code>item</code> element. Type: VolumeStatusItemType
<code>nextToken</code>	A string specifying the next paginated set of results to return. Type: <code>xsd:string</code>

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/2012-08-15/">
  <requestId>5jdkf074-37ed-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 Operations

- [ModifyVolumeAttribute](#) (p. 363)
- [DescribeVolumeAttribute](#) (p. 304)
- [EnableVolumeIO](#) (p. 338)

DescribeVpcs

Description

Gives you information about your VPCs. You can filter the results to return information only about VPCs that match criteria you specify. For example, you could get information only about VPCs whose state is `available`. You can specify multiple values for the filter. A VPC must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the VPC uses one of several sets of DHCP options, and the VPC's state is `available`). The result includes information for a particular VPC 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>cidr</code>	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)
<code>dchp-options-id</code>	The ID of a set of DHCP options. Type: String
<code>state</code>	The state of the VPC. Type: String Valid Values: <code>pending</code> <code>available</code>
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag: <i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>vpc-id</code>	The ID of the VPC. Type: String

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

Request Parameters

Name	Description	Required
<code>VpcId.n</code>	The ID of the VPC. Type: String Default: Returns information about all your VPCs, or only those otherwise specified	No
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your VPCs, or only those otherwise specified.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in an `DescribeVpcsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpcSet</code>	A list of VPCs. Each VPC is wrapped in an <code>item</code> element. Type: VpcType (p. 528)

Examples

Example Request

This example gives a description of the VPC with ID vpc-1a2b3c4d.

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

Example Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcsResponse>
```

Example Request

This example uses filters to give a description of any VPC you own that uses the set of DHCP options with 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 Operations

- [CreateVpc](#) (p. 107)
- [DeleteVpc](#) (p. 152)
- [CreateDhcpOptions](#) (p. 59)
- [AssociateDhcpOptions](#) (p. 21)

DescribeVpnConnections

Description

Gives you information about 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.

You can filter the results to return information only about VPN connections that match criteria you specify. For example, you could get information only about VPN connections whose state is `pending` or `available`. You can specify multiple values for the filter. A VPN connection must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the VPN connection is associated with a particular virtual private gateway, and the gateway's state is `pending` or `available`). The result includes information for a particular VPN connection 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>customer-gateway-configuration</code>	The configuration information for the customer gateway. Type: String
<code>customer-gateway-id</code>	The ID of a customer gateway associated with the VPN connection. Type: String
<code>state</code>	The state of the VPN connection. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
<code>option.static-routes-only</code>	Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP). Type: Boolean
<code>route.destination-cidr-block</code>	The destination CIDR block. This corresponds to the subnet used in a customer data center. Type: String
<code>bgp-asn</code>	The BGP Autonomous System Number (ASN) associated with a BGP device. Type: Integer

Filter Name	Description
tag-key	<p>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=X, see the tag:key filter later in this table.</p> <p>For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>Type: String</p>
tag-value	<p>The value of a tag assigned to the resource. This filter is independent of the tag-key filter.</p> <p>Type: String</p>
tag:key	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources that have been assigned tag Purpose=X, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>
type	<p>The type of VPN connection. Currently the only supported type is ipsec.1.</p> <p>Type: String</p> <p>Valid values: ipsec.1</p>
vpn-connection-id	<p>The ID of the VPN connection.</p> <p>Type: String</p>
vpn-gateway-id	<p>The ID of a virtual private gateway associated with the VPN connection.</p> <p>Type: String</p>

For more information about Amazon Virtual Private Cloud and VPN connections, see [Adding an IPsec 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](#) in the *Amazon Virtual Private Cloud Command Line Reference*.

Request Parameters

Name	Description	Required
<i>VpnConnectionId.n</i>	A VPN connection ID. You can specify more than one in the request. Type: String Default: Returns information about all your VPN connections	No
<i>Filter.n.Name</i>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your VPN connections or those you specify by ID.	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in an `DescribeVpnConnectionsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpnConnectionSet</code>	A list of VPN connections. Each VPN connection is wrapped in an <code>item</code> element. Type: VpnConnectionType (p. 530)

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/2012-08-15/">
  <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 Operations

- [CreateVpnConnection](#) (p. 109)
- [DeleteVpnConnection](#) (p. 154)

DescribeVpnGateways

Description

Gives you information about your virtual private gateways. You can filter the results to return information only about virtual private gateways that match criteria you specify. For example, you could get information only about virtual private gateways whose state is `pending` or `available`. You can specify multiple values for the filter. A virtual private gateway must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the virtual private gateway is in a particular Availability Zone and the gateway's state is `pending` or `available`). The result includes information for a particular virtual private gateway 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 with the filter values: `*` matches zero or more characters, and `?` 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 table shows the available filters.

Filter Name	Description
<code>attachment.state</code>	The current state of the attachment between the gateway and the VPC. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>
<code>attachment.vpc-id</code>	The ID of an attached VPC. Type: String
<code>availability-zone</code>	The Availability Zone the virtual private gateway is in. Type: String
<code>state</code>	The state of the virtual private gateway. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
<code>tag-key</code>	The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag's value is), and the tag value <code>X</code> (regardless of what the tag's key is). If you want to list only resources where <code>Purpose=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, see Using Tags in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag: <i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>type</code>	The type of virtual private gateway. Currently the only supported type is <code>ipsec.1</code> . Type: String Valid values: <code>ipsec.1</code>
<code>vpn-gateway-id</code>	The ID of the virtual private gateway. Type: String

For more information about Amazon Virtual Private Cloud and virtual private gateways, see [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<code>VpnGatewayId.n</code>	A virtual private gateway ID. You can specify more than one in the request. Type: String Default: Returns information about all your virtual private gateways.	No
<code>Filter.n.Name</code>	The name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your virtual private gateways or those you specify by ID.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in an `DescribeVpnGatewaysResponsestructure`.

Name	Description
requestId	The ID of the request. Type: xsd:string
vpnGatewaySet	A list of virtual private gateways. Each virtual private gateway is wrapped in an <code>item</code> element. Type: VpnGatewayType (p. 531)

Examples

Example Request

This example gives a description of the virtual private gateway with ID vgw-8db04f81.

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

Example Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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 give a description of 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 Operations

- [CreateVpnGateway](#) (p. 118)
- [DeleteVpnGateway](#) (p. 158)

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.

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

Request Parameters

Name	Description	Required
<i>InternetGatewayId</i>	The ID of the Internet gateway. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DetachInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachInternetGatewayResponse>
```

Related Operations

- [CreateInternetGateway](#) (p. 68)
- [DeleteInternetGateway](#) (p. 124)
- [DetachInternetGateway](#) (p. 25)
- [DescribeInternetGateways](#) (p. 220)

DetachNetworkInterface

Description

Detaches a network interface from an instance.

Request Parameters

Name	Description	Required
AttachmentId	The ID of the attachment. Type: String Default: None	Yes
Force	Set to <code>true</code> to force a detachment. Type: Boolean Default: None	No

Response Elements

The elements in the following table are wrapped in a `DetachNetworkInterface` structure.

Name	Description
requestId	The ID of the request. Type: <code>xsd:string</code>
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

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/2011-11-15/'>
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

Related Operations

- [AttachNetworkInterface](#) (p. 27)
- [CreateNetworkInterface](#) (p. 77)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

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 volume being stuck in "busy" state while detaching. For more information about Amazon EBS, see [Using 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 cannot 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

Name	Description	Required
<i>VolumeId</i>	The ID of the volume. Type: String Default: None	Yes
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	No
<i>Device</i>	The device name. Type: String Default: None	No
<i>Force</i>	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	No

Response Elements

The elements in the following table are wrapped in a `DetachVolumeResponse` structure.

Name	Description
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-4d826724`.

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-4d826724
&InstanceId=i-6058a509
&AUTHPARAMS
```

Example Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-4d826724</volumeId>
  <instanceId>i-6058a509</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>2008-05-08T11:51:50.000Z</attachTime>
</DetachVolumeResponse>
```

Related Operations

- [CreateVolume](#) (p. 104)
- [DeleteVolume](#) (p. 150)
- [DescribeVolumes](#) (p. 300)
- [AttachVolume](#) (p. 29)

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 Amazon Virtual Private Cloud and virtual private gateways, see [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<i>VpnGatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `DetachVpnGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example detaches the virtual private gateway with ID `vgw-8db04f81` from the VPC with VPC 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/2012-08-15/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DetachVpnGatewayResponse>
```

Related Operations

- [AttachVpnGateway](#) (p. 32)
- [DescribeVpnGateways](#) (p. 318)

DisableVgwRoutePropagation

Description

Disables a virtual private gateway (VGW) from propagating routes to the routing tables of an Amazon VPC.

Request Parameters

Name	Description	Required
<i>RouteTableId</i>	The ID of the routing table. Type: String Default: None	Yes
<i>GatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DisableVgwRoutePropagationResponseType` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

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/2012-08-15/'>>  
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>  
  <return>true</return>  
</DisableVgwRoutePropagationResponse>
```

Related Operations

- [EnableVgwRoutePropagation](#) (p. 336)

DisassociateAddress

Description

Disassociates an Elastic IP address from the instance it's assigned to.

This action applies to both EC2 Elastic IP addresses and VPC Elastic IP addresses. For information about VPC addresses and how they differ from EC2 addresses, see [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

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

Request Parameters

Name	Description	Required
<i>PublicIp</i>	The EC2 Elastic IP address. Type: String Default: None Condition: Required for EC2 Elastic IP addresses	Conditional
<i>AssociationId</i>	The association ID corresponding to the VPC Elastic IP address. Type: String Default: None Condition: Required for VPC Elastic IP addresses	Conditional

Response Elements

The elements in the following table are wrapped in a `DisassociateAddressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example disassociates the EC2 Elastic IP address 67.202.55.255 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 VPC Elastic IP address with association ID eipassoc-aa7486c3 from the VPC instance to which it is assigned.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationID=eipassoc-aa7486c3
&AUTHPARAMS
```

Example Response

```
<DisassociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateAddressResponse>
```

Related Operations

- [AllocateAddress](#) (p. 13)
- [DescribeAddresses](#) (p. 162)
- [ReleaseAddress](#) (p. 376)
- [AssociateAddress](#) (p. 18)

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

Name	Description	Required
<i>AssociationId</i>	The association ID representing the current association between the route table and subnet. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `DisassociateRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns <code>true</code> 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/2012-08-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<return>>true</return>  
</DisassociateRouteTableResponse>
```

Related Operations

- [CreateRouteTable](#) (p. 91)
- [AssociateRouteTable](#) (p. 23)
- [DeleteRouteTable](#) (p. 138)
- [DescribeRouteTables](#) (p. 262)
- [ReplaceRouteTableAssociation](#) (p. 385)

EnableVgwRoutePropagation

Description

Enables a virtual private gateway (VGW) to propagate routes to the routing tables of an Amazon VPC.

Request Parameters

Name	Description	Required
<i>RouteTableId</i>	The ID of the routing table. Type: String Default: None	Yes
<i>GatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `EnableVgwRoutePropagationResponseType` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns <code>true</code> 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/2012-08-15/'>>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
```

```
<return>true</return>  
</EnableVgwRoutePropagation>
```

Related Operations

- [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

Name	Description	Required
<i>VolumeId</i>	The volume ID. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `EnableVolumeIOResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the I/O operations of the volume are enabled. Type: <code>xsd:boolean</code>

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/2012-08-15/" >
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVolumeIOResponse>
```

Related Operations

- [DescribeVolumeStatus](#) (p. 306)

- [ModifyVolumeAttribute](#) (p. 363)
- [DescribeVolumeAttribute](#) (p. 304)

GetConsoleOutput

Description

Retrieves console output for the specified instance.

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.

Request Parameters

Name	Description	Required
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `GetConsoleOutputResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>instanceId</code>	The instance ID. Type: xsd:string
<code>timestamp</code>	The time the output was last updated. Type: xsd:dateTime
<code>output</code>	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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lubiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChSZWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDlwMDYKQklPUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFWOgpY
ZW46IDAwMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhNDAwMDAwIChlc2FibGUpcjk4ME1CIEhJ
R0hNRU0gYXZhaWxhYmxlLGo3MjdNQiBMTldNRU0gYXZhaWxhYmxlLgpoWCaoRXhlY3V0ZSBEaXNh
YmxlKSBwcm90ZWNoaW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRLY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbG1zdHMKS2VybVVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCByZXN0b3JlLi4uIGRvbmUuCG==</output>
</GetConsoleOutputResponse>
```

Related Operations

- [RunInstances](#) (p. 412)

GetPasswordData

Description

Retrieves the encrypted administrator password for an instance running Windows.

Note

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 provided.

Request Parameters

Name	Description	Required
<i>InstanceId</i>	A Windows instance ID. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `GetPasswordDataResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instanceId</code>	The ID of the instance. Type: <code>xsd:string</code>
<code>timestamp</code>	The time the data was last updated. Type: <code>xsd:dateTime</code>
<code>passwordData</code>	The password of the instance. Type: <code>xsd:string</code>

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/2012-08-15/">
  <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 Operations

- [RunInstances](#) (p. 412)

ImportInstance

Description

Creates a new 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

Name	Description	Required
<i>Description</i>	A description of the instance being imported. Type: String Default: None	No
<i>LaunchSpecification.Architecture</i>	The architecture of the instance. Type: String Default: None Valid values: i386 x86_64	Yes
<i>LaunchSpecification.GroupName.n</i>	One or more security group names. Type: String Default: None	No
<i>LaunchSpecification.UserData</i>	User data to be made available to the instance. Type: String Default: None	No
<i>LaunchSpecification.InstanceType</i>	The instance type. Type: String Valid values: m1.small m1.large m1.xlarge c1.medium c1.xlarge m2.xlarge m2.2xlarge m2.4xlarge t1.micro Default: None	Yes
<i>LaunchSpecification.Placement.AvailabilityZone</i>	The Availability Zone to launch the instance into. Type: String Default: EC2 chooses a zone for you	No
<i>LaunchSpecification.Monitoring.Enabled</i>	Specifies whether to enable detailed monitoring for the instance. Type: Boolean Default: false	No
<i>LaunchSpecification.SubnetId</i>	If you're using Amazon Virtual Private Cloud, this specifies the ID of the subnet you want to launch the instance into. Type: String Default: None	No

**Amazon Elastic Compute Cloud API Reference
Response Elements**

Name	Description	Required
<i>LaunchSpecification.InstanceInitiatedShutdownBehavior</i>	Specifies whether the instance stops or terminates on instance-initiated shutdown. Type: String Valid values: stop terminate Default: stop	No
<i>LaunchSpecification.PrivateIpAddress</i>	If you're using Amazon Virtual Private Cloud, you can optionally use this parameter to assign the instance a specific available IP address from the subnet (e.g., 10.0.0.25). Type: String Default: Amazon VPC selects an IP address from the subnet for the instance	No
<i>DiskImage.n.Image.Format</i>	The file format of the disk image. Type: String Default: None Valid values: VMKD RAW VHD	Yes
<i>DiskImage.n.Image.Bytes</i>	The number of bytes in the disk image. Type: Long Default: None	Yes
<i>DiskImage.n.Image.ImportManifestUrl</i>	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 <i>Amazon Simple Storage Service Developer Guide</i> . Type: String Default: None	Yes
<i>DiskImage.n.Image.Description</i>	An optional description of the disk image. Type: String Default: None	No
<i>DiskImage.n.Volume.Size</i>	The size, in GB (2 ³⁰ bytes), of the Amazon EBS volume that will hold the converted image. Type: Integer Default: None	Yes
<i>Platform</i>	The EC2 instance operating system. Type: String Default: None Valid value: Windows	No

Response Elements

The elements in the following table are wrapped in an `ImportInstanceResponse` structure.

Name	Description
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=5snej01TtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

Example Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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=5snej01TtL0uR7KEx
tEXAMPLE%3D
            </importManifestUrl>
          </image>
          <description/>
          <volume>
            <size>12</size>
            <id>vol-1a2b3c4d</id>
          </volume>
          <status>active</status>
          <statusMessage/>
        </item>
      </volumes>
    </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

```
        </item>
    </volumes>
    <instanceId>i-12655a7f</instanceId>
    <description/>
</importInstance>
</conversionTask>
</ImportInstanceResponse>
```

Related Operations

- [ImportVolume](#) (p. 350)
- [DescribeConversionTasks](#) (p. 173)
- [CancelConversionTask](#) (p. 46)

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.

Request Parameters

Name	Description	Required
<i>KeyName</i>	A unique name for the key pair. Type: String Default: None	Yes
<i>PublicKeyMaterial</i>	The public key. You must base64 encode the public key material before sending it to AWS. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `ImportKeyPairResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>keyName</code>	The key pair name you provided. Type: xsd:string
<code>keyFingerprint</code>	The MD5 public key fingerprint as specified in section 4 of RFC4716 . Type: xsd:string

Examples

Example Request

This example uploads the public key for a key pair you name gsg-keypair.

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=gsg-keypair
&PublicKeyMaterial=LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tDQpNSUlDZHp
DQ0FlQ2dBd01CQWdJR0FQalRyR3pQ
TUEwR0NTcUdTSWlzMFRFFQkJRUVFNrk14Q3pBSkJnTlZCQVlUDQpBbFZUTVJNd0VRWURWUVFLRXdw
QmJXRjZiMjR1WTI5dE1rd3dDZl1lEVlFRTEV3TkJWMMU14SVRBZkZjNlZCQVlUDQpHRUZVYXlCTWFX
MXBkRlZrTFVGemMzVnlZVzVqW1NCRFFUQWVGdzB3T1RBM016RXlNVFEzTXpWYUZ3MHhNREEzDQpN
ekV5TVRRM016VmFNrk14Q3pBSkJnTlZCQVlUDQpWVVE1STXdFUVlEVlFRS0V3cEJiV0Y2YjI0dVky
OXRNUnN3DQpGUUVlEVlFRTEV3NUJWMMU1OUkdWMLpXehZjRlZ5Y3pFVklCTUdBmVVFQXhNTWJUSnVi
RGhxZW00MwVHUjFNSUdmDQpNQTlBHQ1Nxr1NjYjNEUUVVCQVVFQUE0R05BRENCaVFLQmdRQ1dOazBo
QytrcExBRnp2YkFQc3U1TDU5bFMwUnI0DQprZEpaM0RFak1pL0IwV2ZDSzhpS2hWYWt1WithSnJt
NDdMUHZCaFVKWk9IeHVUU0VXakFDNmlybDZzKz1SWXVjDQpFZXg0TjI4Z1pCZGpORlAzdEgwZ2Nu
WjdIbXZ4aFBrTEtoRTdpZmViNmNGWUhrDhPhRnRPQ0ZQTmdUSE92VDE5DQoyR3lZb1VyU3BDVGF
U1EUVFBQm8xY3dWVEFPQmdOVkhROEJBZjhFQkFNQ0JhQXdGZ11EVlIwbEFRCSC9CQXd3DQpDZ11J
S3dZQkRlRVUhd013REFZRFZSMFRBUUgVqkFjd0FEQWRWRCZ05WSFE0RUZnUVU1RVNuTUZZUzdyTDNX
TUDLDQpqeJMxVXZ5TThnMHdEUUV1KS29aSWH2Y05BUUVGQ1FBRGdZRUFnWjdDZ11JWHRlWFM1NHVq
bU5jOTR0NWRNc3krDQpCM0Z3WVVNdUd4WUI2eGQvSUVWMTFLRVEyZ0hpZUDMU21jUWg4c2JXTTdt
KzcrYm9UNmc2U2hLbU1jblkzWkRTDQpWRVVFZ2Z5qcEtlaEZRd2pmaVpTUEc1UG5SVENhdkVqS3lT
TUpDVGxpdTdTtjMrR2J3cFU5UzgzK21GM2tsMGRmDQpZn1IrbEl5SWcrU3ROOTg9DQotLS0tLUV
RCBDRVJUSUZJQ0FURS0tLS0tEXAMPLE
&AUTHPARAMS
```

Example Response

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <keyName>gsg-keypair</keyName>
  <keyFingerprint>
    00:00:00: 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
  </keyFingerprint>
</ImportKeyPairResponse>
```

Related Operations

- [CreateKeyPair](#) (p. 70)
- [DescribeKeyPairs](#) (p. 223)
- [DeleteKeyPair](#) (p. 126)

ImportVolume

Description

Creates a new 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

Name	Description	Required
<i>AvailabilityZone</i>	The Availability Zone for the resulting Amazon EBS volume. Type: String Default: None	Yes
<i>Image.Format</i>	The file format of the disk image. Type: String Default: None Valid values: VMDK RAW VHD	Yes
<i>Image.Bytes</i>	The number of bytes in the disk image. Type: Long Default: None	Yes
<i>Image.ImportManifestUrl</i>	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 <i>Amazon Simple Storage Service Developer Guide</i> . Type: String Default: None	Yes
<i>Description</i>	An optional description of the volume being imported. Type: String Default: None	No
<i>Volume.Size</i>	The size, in GB (2 ³⁰ bytes), of an Amazon EBS volume to hold the converted image. Type: Integer Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `ImportVolumeResponse` structure.

Name	Description
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.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS
```

Example Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
        </importManifestUrl>
        <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
      </image>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
    <statusMessage/>
  </conversionTask>
</ImportVolumeResponse>
```

Related Operations

- [ImportInstance](#) (p. 344)
- [DescribeConversionTasks](#) (p. 173)
- [CancelConversionTask](#) (p. 46)

ModifyImageAttribute

Description

Modifies an attribute of an AMI.

Note

AWS Marketplace product codes cannot be modified. Images with an AWS Marketplace product code cannot be made public.

Request Parameters

Name	Description	Required
<i>ImageId</i>	The AMI ID. Type: String Default: None	Yes
<i>LaunchPermission.Add.n.UserId</i>	Adds the specified AWS account ID to the AMI's list of launch permissions. Type: String Default: None	No
<i>LaunchPermission.Remove.n.UserId</i>	Removes the specified AWS account ID from the AMI's list of launch permissions. Type: String Default: None	No
<i>LaunchPermission.Add.n.Group</i>	Adds the specified group to the image's list of launch permissions. The only valid value is <code>all</code> . Type: String Valid value: <code>all</code> (for all EC2 users) Default: None	No
<i>LaunchPermission.Remove.n.Group</i>	Removes the specified group from the image's list of launch permissions. The only valid value is <code>all</code> . Type: String Valid value: <code>all</code> (for all EC2 users) Default: None	No
<i>ProductCode.n</i>	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	No
<i>Description.Value</i>	Changes the AMI's description to the specified value. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `ModifyImageAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example makes the AMI public (i.e., so any AWS account can launch it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

Example Request

This example makes the AMI private (i.e., so only you as the owner can launch 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/2012-08-15/">
  <return>true</return>
</ModifyImageAttributeResponse>
```

Related Operations

- [ResetImageAttribute](#) (p. 398)
- [DescribeImageAttribute](#) (p. 184)

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's Guide*.

Request Parameters

Name	Description	Required
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	Yes
<i>InstanceType.Value</i>	Changes the instance type to the specified value. Type: String Default: None	No
<i>Kernel.Value</i>	Changes the instance's kernel to the specified value. Type: String Default: None	No
<i>Ramdisk.Value</i>	Changes the instance's RAM disk to the specified value. Type: String Default: None	No
<i>UserData.Value</i>	Changes the instance's user data to the specified value. Type: String Default: None	No
<i>DisableApiTermination.Value</i>	Changes the instance's <code>DisableApiTermination</code> flag to the specified value. A value of <code>true</code> means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of <code>false</code> means you can. You must modify this attribute before you can terminate any "locked" instances using the API. Type: Boolean Default: None	No
<i>InstanceInitiatedShutdownBehavior.Value</i>	Changes the instance's <code>InstanceInitiatedShutdownBehavior</code> flag to the specified value. Type: String Default: None Valid values: <code>stop</code> <code>terminate</code>	No

**Amazon Elastic Compute Cloud API Reference
Request Parameters**

Name	Description	Required
<i>BlockMappingDevice.Value</i>	<p>Modifies the <code>DeleteOnTermination</code> attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for <code>DeleteOnTermination</code>, the value defaults to <code>true</code> and the volume will be deleted when the instance is terminated.</p> <p>Note</p> <p>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 <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>Type: <code>BlockDeviceMapping</code> Default: <code>None</code> Example:</p> <pre>&BlockDeviceMapping1.DeviceName=/dev/sdh &BlockDeviceMapping.1.Ebs.DeleteOnTermination=true</pre>	No
<i>SourceDestCheck.Value</i>	<p>Enables a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the instance to perform NAT. For more information, see NAT Instances in the <i>Amazon Virtual Private Cloud User Guide</i>.</p> <p>Type: <code>Boolean</code> Default: <code>None</code></p>	No
<i>GroupId.n</i>	<p>For instances running in a VPC: Changes the security groups that an instance 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.</p> <p>For example, if you want the instance to be in <code>sg-1a1a1a1a</code> and <code>sg-9b9b9b9b</code>, specify <code>GroupId.1=sg-1a1a1a1a</code> and <code>GroupId.2=sg-9b9b9b9b</code>.</p> <p>Type: <code>String</code> Default: <code>None</code></p>	No

Name	Description	Required
<i>EbsOptimized</i>	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: <i>false</i>	No

Response Elements

The elements in the following table are wrapped in a `ModifyInstanceAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example changes the kernel for the instance.

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&Kernel.Value=aki-f70657b2
&AUTHPARAMS
```

Example Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

Related Operations

- [ResetInstanceAttribute](#) (p. 400)
- [DescribeInstanceAttribute](#) (p. 195)

ModifyNetworkInterfaceAttribute

Description

Modifies a network interface attribute. Only one attribute can be specified per call.

Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The ID of the network interface. Type: String Default: None	Yes
<i>Description.Value</i>	The description of the network interface. Type: String Default: None	No
<i>SecurityGroupId.n</i>	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	No
<i>SourceDestCheck.Value</i>	Enables a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the instance to perform NAT. For more information, see NAT Instances in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: Boolean Default: None	No
<i>Attachment.AttachmentId</i>	The ID of the interface attachment. This parameter is required if you are modifying the <code>DeleteOnTermination</code> attribute of an interface attachment. Type: String Default: None	Conditional
<i>Attachment.DeleteOnTermination</i>	Specifies whether to delete the attachment when terminating the instance. You must specify a specific attachment ID to change this attribute. Type: Boolean Default: None	Conditional

Response Elements

The elements in the following table are wrapped in a `ModifyNetworkInterfaceAttribute` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example sets source/destination checking to `false` for the elastic network interface (ENI) `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/2011-11-15/'>
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

Related Operations

- [AttachNetworkInterface](#) (p. 27)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 77)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ResetNetworkInterfaceAttribute](#) (p. 402)

ModifySnapshotAttribute

Description

Adds or remove permission settings for the specified snapshot.

Note

Snapshots with AWS Marketplace product codes cannot be made public.

Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the snapshot. Type: String Default: None	Yes
<i>CreateVolumePermission.Add.n.UserId</i>	Adds the specified AWS account ID to the volume's list of create volume permissions. Type: String Default: None	Yes
<i>CreateVolumePermission.Add.n.Group</i>	Adds the specified group to the volume's list of create volume permissions. The only valid value is <code>all</code> . Type: String Default: None	Yes
<i>CreateVolumePermission.Remove.n.UserId</i>	Removes the specified AWS account ID from the volume's list of create volume permissions. Type: String Default: None	No
<i>CreateVolumePermission.Remove.n.Group</i>	Removes the specified group from the volume's list of create volume permissions. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `ModifySnapshotAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example makes the snap-78a54011 snapshot public, and gives the account with ID 111122223333 permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-78a54011
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

This example makes the snap-78a54011 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-78a54011
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

Example Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

Related Operations

- [DescribeSnapshotAttribute](#) (p. 271)
- [DescribeSnapshots](#) (p. 273)
- [ResetSnapshotAttribute](#) (p. 404)
- [CreateSnapshot](#) (p. 95)

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

Name	Description	Required
<i>VolumeId</i>	The ID of the volume. Type: String Default: None	Yes
<i>AutoEnableIO.Value</i>	This attribute exists to auto-enable the I/O operations to the volume. Type: AttributeBooleanValueType Default: false	Yes

Response Elements

The elements in the following table are wrapped in a `ModifyVolumeAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns <code>true</code> if the auto-enable of the specified volume is enabled. 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/2012-08-15/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <return>true</return>  
</ModifyVolumeAttributeResponse>
```

Related Operations

- [DescribeVolumeAttribute](#) (p. 304)
- [DescribeVolumeStatus](#) (p. 306)

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

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `MonitorInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	A list of instances. Each instance is wrapped in an <code>item</code> element. Type: MonitorInstancesResponseSetItemType (p. 491)

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/2012-08-15/">
  <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 Operations

- [UnmonitorInstances](#) (p. 431)
- [RunInstances](#) (p. 412)

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

Name	Description	Required
<code>reservedInstancesOfferingId</code>	ID of the Reserved Instance offering you want to purchase. Type: String Default: None	Yes

Name	Description	Required
<i>instanceCount</i>	The number of Reserved Instances to purchase. Type: Integer Default: None	Yes
<i>limitPrice</i>	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. 508)	No

Response Elements

The elements in the following table are wrapped in a `PurchaseReservedInstancesOfferingResponse` structure.

Name	Description
<i>requestId</i>	The ID of the request. Type: String
<i>reservedInstancesId</i>	The IDs of the purchased Reserved Instances. Type: 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=4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

The response looks like the following example.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>af9f760e-clc1-449b-8128-1342d3a6927a</reservedIn
stancesId>
</PurchaseReservedInstancesOfferingResponse>
```

Example Request

This example illustrates a purchase of a Reserved Instances offering.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8
&InstanceCount=2
&AUTHPARAMS
```

Example Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>af9f760e-c1c1-449b-8128-1342d3a6927a</reservedIn
stancesId>
</PurchaseReservedInstancesOfferingResponse>
```

Related Operations

- [DescribeReservedInstancesOfferings](#) (p. 253)
- [DescribeReservedInstances](#) (p. 245)

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

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `RebootInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

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/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</RebootInstancesResponse>
```

Related Operations

- [RunInstances](#) (p. 412)

RegisterImage

Description

Registers a new AMI with Amazon EC2. 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

Name	Description	Required
<i>ImageLocation</i>	The full path to your AMI manifest in Amazon S3 storage. Type: String Default: None Condition: Required if registering an instance store-backed AMI	Conditional
<i>Name</i>	A name for your AMI. Type: String Default: None Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(_)	Yes
<i>Description</i>	A description of the AMI. Type: String Default: None Constraints: Up to 255 characters.	No
<i>Architecture</i>	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.	No

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Request Parameters

Name	Description	Required
<i>KernelId</i>	The ID of the kernel. Type: String Default: None	No
<i>RamdiskId</i>	The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk. To find kernel requirements, refer to the Resource Center and search for the kernel ID. Type: String Default: None	No
<i>RootDeviceName</i>	The name of the root device (for example, /dev/sda1, or xvda). Type: String Default: None Condition: Required if registering an Amazon EBS-backed AMI	Conditional
<i>BlockDeviceMapping.n.DeviceName</i>	The device name exposed to the instance (for example, /dev/sdh or xvdh). For more information, see Block Device Mapping . Type: String Default: None Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify <i>DeviceName</i> with the root device name (for example, /dev/sda1 or xvda), and <i>BlockDeviceMapping.n.Ebs.SnapshotId</i> with the snapshot ID	Conditional
<i>BlockDeviceMapping.n.NoDevice</i>	Suppresses a device mapping. Type: Boolean Default: <code>true</code>	No
<i>BlockDeviceMapping.n.VirtualName</i>	The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None	No
<i>BlockDeviceMapping.n.Ebs.SnapshotId</i>	The ID of the snapshot. Type: String Default: None Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify <i>SnapshotId</i> with the snapshot ID, and <i>BlockDeviceMapping.n.DeviceName</i> with the root device name.	Conditional

Name	Description	Required
<i>BlockDeviceMapping.n.Ebs.VolumeSize</i>	The size of the volume, in GiBs. Type: Integer Default: None Condition: Required if you are not creating a volume from a snapshot.	Conditional
<i>BlockDeviceMapping.n.Ebs.DeleteOnTermination</i>	Whether the volume is deleted on instance termination. Type: Boolean Default: true	No
<i>BlockDeviceMapping.n.Ebs.VolumeType</i>	The volume type. Type: String Valid values: standard io1 Default: standard	No
<i>BlockDeviceMapping.n.Ebs.Iops</i>	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is io1; not used with standard volumes. Default: None	Conditional

Response Elements

The elements in the following table are wrapped in a `RegisterImageResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>imageId</code>	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-6eba6e06
&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-6eba6e06
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-823ea6df
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

Example Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-78a54043</imageId>
</RegisterImageResponse>
```

Related Operations

- [DescribeImages](#) (p. 187)
- [DeregisterImage](#) (p. 160)

ReleaseAddress

Description

Releases an Elastic IP address allocated to your account.

This action applies to both EC2 Elastic IP addresses and VPC Elastic IP addresses. For information about VPC addresses and how they differ from EC2 addresses, see [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

If you run this action on an Elastic IP address that is already released, the address might be assigned to another account, which will cause Amazon EC2 to return an error (`AuthFailure`).

Note

For EC2 addresses only: Releasing an IP address automatically disassociates it from any instance it's associated with. To disassociate an IP address without releasing it, use the `DisassociateAddress` action.

If you try to release a VPC address that's associated with an instance, Amazon EC2 returns an error (`InvalidIpAddress.InUse`).

Important

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to your account. Make sure to update your DNS records and any servers or devices that communicate with the address.

Request Parameters

Name	Description	Required
<i>PublicIp</i>	The EC2 Elastic IP address. Type: String Default: None Condition: Required for EC2 Elastic IP addresses	Conditional
<i>AllocationId</i>	The allocation ID that AWS provided when you allocated the address for use with Amazon VPC. Type: String Default: None Condition: Required for VPC Elastic IP addresses	Conditional

Response Elements

The elements in the following table are wrapped in a `ReleaseAddressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string

Name	Description
return	Returns <code>true</code> if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example releases an EC2 Elastic IP address (67.202.55.255).

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

Example Request

This example releases a VPC Elastic IP address with allocation ID `eipalloc-5723d13e`.

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

Example Response

```
<ReleaseAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReleaseAddressResponse>
```

Related Operations

- [AllocateAddress](#) (p. 13)
- [DescribeAddresses](#) (p. 162)
- [AssociateAddress](#) (p. 18)
- [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

Name	Description	Required
<i>AssociationId</i>	The ID representing the current association between the original network ACL and the subnet. Type: String Default: None	Yes
<i>NetworkAclId</i>	The ID of the new ACL to associate with the subnet. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `ReplaceNetworkAclAssociationResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>newAssociationId</code>	The ID representing 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

Related Operations

- [CreateNetworkAcl](#) (p. 72)
- [DeleteNetworkAcl](#) (p. 128)
- [DescribeNetworkAcls](#) (p. 226)

ReplaceNetworkAclEntry

Description

Replaces an entry (i.e., rule) in a network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<code>NetworkAclId</code>	The ID of the ACL. Type: String Default: None	Yes
<code>RuleNumber</code>	The rule number of the entry to replace. Type: Integer Default: None	Yes
<code>Protocol</code>	The IP protocol the rule applies to. You can use -1 to mean all protocols. Type: Integer Valid values: -1 or a protocol number (go to Protocol Numbers).	Yes
<code>RuleAction</code>	Indicates whether to allow or deny traffic that matches the rule. Type: String Default: None Valid values: allow deny	Yes
<code>Egress</code>	Indicates whether this rule applies to egress traffic from the subnet (<code>true</code>) or ingress traffic to the subnet (<code>false</code>). Type: Boolean Default: <code>false</code> Valid values: <code>true</code> <code>false</code>	No
<code>CidrBlock</code>	The CIDR range to allow or deny, in CIDR notation (for example, 172.16.0.0/24). Type: String Default: None	Yes
<code>Icmp.Code</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 Condition: Required if specifying 1 (ICMP) for the protocol.	Conditional

Name	Description	Required
<code>Icmp.Type</code>	For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types. Type: Integer Default: None Condition: Required if specifying 1 (ICMP) for the protocol.	Conditional
<code>PortRange.From</code>	The first port in the range. Type: Integer Default: None Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.	Conditional
<code>PortRange.To</code>	The last port in the range. Type: Integer Default: None Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.	Conditional

Response Elements

The elements in the following table are wrapped in a `ReplaceNetworkAclEntryResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

Related Operations

- [CreateNetworkAclEntry](#) (p. 74)
- [DeleteNetworkAclEntry](#) (p. 130)
- [DescribeNetworkAcls](#) (p. 226)

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

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table. Type: String Default: None	Yes
<i>DestinationCidrBlock</i>	The CIDR address block used for the destination match. For example: 0.0.0.0/0. The value you provide must match the CIDR of an existing route in the table. Type: String Default: None	Yes
<i>GatewayId</i>	The ID of a gateway attached to your VPC. Type: String Default: None Condition: You must provide only one of the following: a <i>GatewayId</i> , <i>InstanceId</i> , or <i>NetworkInterfaceId</i> .	Conditional
<i>InstanceId</i>	The ID of a NAT instance in your VPC. Type: String Default: None Condition: You must provide only one of the following: a <i>GatewayId</i> , <i>InstanceId</i> , or <i>NetworkInterfaceId</i> .	Conditional
<i>NetworkInterfaceId</i>	Allows routing to network interface attachments. Type: String Default: None Condition: You must provide only one of the following: <i>GatewayId</i> , <i>InstanceId</i> , or <i>NetworkInterfaceId</i> .	Conditional

Response Elements

The elements in the following table are wrapped in a `ReplaceRouteResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

Examples

Example Request

This example replaces a route in the route table with ID `rtb-e4ad488d`. The new route matches the CIDR `10.0.0/8` and sends the traffic to the virtual private gateway with ID `vgw-1d00376e`.

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

Example Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
```

Related Operations

- [DeleteRoute](#) (p. 136)
- [CreateRoute](#) (p. 88)
- [DescribeRouteTables](#) (p. 262)

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

Name	Description	Required
<i>AssociationId</i>	The ID representing the current association between the original route table and the subnet. Type: String Default: None	Yes
<i>RouteTableId</i>	The ID of the new route table to associate with the subnet. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `ReplaceRouteTableAssociationResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>newAssociationId</code>	The ID representing 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/2012-
08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

Related Operations

- [CreateRouteTable](#) (p. 91)
- [DisassociateRouteTable](#) (p. 334)
- [DeleteRouteTable](#) (p. 138)
- [DescribeRouteTables](#) (p. 262)
- [AssociateRouteTable](#) (p. 23)

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 `ReasonCodes.n` parameter that applies to that instance. The following table contains descriptions of all available reason codes.

Reason Code	Description
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

Name	Description	Required
<i>InstanceID.n</i>	One or more instance IDs. Type: String	Yes
<i>Status</i>	The status of all instances listed in the <i>InstanceID.n</i> parameter. Type: String Valid values: <code>ok</code> <code>impaired</code>	Yes
<i>StartTime</i>	The time at which the reported instance health state began. Type: DateTime	No

Name	Description	Required
<i>EndTime</i>	The time at which the reported instance health state ended. Type: DateTime	No
<i>ReasonCodes.n</i>	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 <i>InstanceID.n</i> parameter. See the Description (p. 387) 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	Yes
<i>Description</i>	Descriptive text about the instance health state. Type: String Default: None	No

Response Elements

The elements in the following table are wrapped in a `ReportInstanceStatusResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>Return</code>	Indicates whether the values submitted were accepted by Amazon EC2. 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=2012-08-15
&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=2012-08-15
&AuthParams
```

Example Response

```
<ReportInstanceStatusResponse xmlns='http://ec2.amazonaws.com/doc/2011-10-01/'>
  <requestId>b8131cff-dfbd-4277-bafe-be006fd0c4da</requestId>
  <return>>true</return>
</ReportInstanceStatusResponse>
```

RequestSpotInstances

Description

Creates a Spot Instance request. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Using 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

Name	Description	Required
<i>SpotPrice</i>	The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String Default: None	Yes
<i>InstanceCount</i>	The maximum number of Spot Instances to launch. Type: Integer Default: 1	No
<i>Type</i>	The Spot Instance request type. Type: String Valid values: <code>one-time</code> <code>persistent</code> Default: <code>one-time</code>	No
<i>ValidFrom</i>	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	No
<i>ValidUntil</i>	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	No

**Amazon Elastic Compute Cloud API Reference
Request Parameters**

Name	Description	Required
<i>LaunchGroup</i>	The instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String Default: Instances are launched and terminated individually	No
<i>AvailabilityZoneGroup</i>	The user-specified name for a logical grouping of bids. When you specify <i>AvailabilityZoneGroup</i> 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. <i>AvailabilityZoneGroup</i> applies only to bids for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same <i>AvailabilityZoneGroup</i> 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 <i>AvailabilityZoneGroup</i> name was specified. To ensure that all Spot Instances across all bids are launched into a particular Availability Zone, specify <i>LaunchSpecification.Placement.AvailabilityZone</i> in the API or <i>-availability-zone</i> in the CLI. Type: String Default: Instances are launched in any available Availability Zone.	No
<i>LaunchSpecification.ImageId</i>	The ID of the AMI. Type: String Default: None	Yes
<i>LaunchSpecification.KeyName</i>	The name of the key pair. Type: String Default: None	No

Amazon Elastic Compute Cloud API Reference
Request Parameters

Name	Description	Required
<i>LaunchSpecification.SecurityGroupId.n</i>	The ID of the security group. You can use either this parameter or the next to specify a security group. You can use this parameter when launching instances with or without Amazon VPC. Type: String Default: The instance uses the default security group Condition: If you want to specify one or more security groups, you can use either <i>LaunchSpecification.SecurityGroupId.n</i> or <i>LaunchSpecification.SecurityGroup.n</i> .	Conditional
<i>LaunchSpecification.SecurityGroup.n</i>	The name of the security group. You cannot use this parameter when launching an instance with Amazon VPC. Type: String Default: The instance uses the default security group Condition: If you want to specify one or more security groups, you can use either <i>LaunchSpecification.SecurityGroupId.n</i> or <i>LaunchSpecification.SecurityGroup.n</i> .	Conditional
<i>LaunchSpecification UserData</i>	The MIME, Base64-encoded user data to make available to the instances. Type: String Default: None	No
<i>LaunchSpecification.AddressingType</i>	Deprecated. Type: String Default: None	No
<i>LaunchSpecification.InstanceType</i>	The instance type. Type: String Valid values: m1.small m1.large m1.xlarge c1.medium c1.xlarge m2.xlarge m2.2xlarge m2.4xlarge t1.micro Default: m1.small	Yes
<i>LaunchSpecification.Placement.AvailabilityZone</i>	The placement constraint (i.e., 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.	No

Amazon Elastic Compute Cloud API Reference
Request Parameters

Name	Description	Required
<i>LaunchSpecification.Placement.GroupName</i>	The name of an existing placement group you want to launch the instance into (for cluster instances). Type: String Default: None.	No
<i>LaunchSpecification.KernelId</i>	The ID of the kernel. Type: String Default: None	No
<i>LaunchSpecification.RamdiskId</i>	The ID of the RAM disk. 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 Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.DeviceName</i>	The device named exposed to the instance (for example, /dev/sdh or xvdh). For more information, see Block Device Mapping . Type: String Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.NoDevice</i>	Suppresses the device mapping. Type: Boolean Default: true	No
<i>LaunchSpecification.BlockDeviceMapping.n.VirtualName</i>	The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.SnapshotId</i>	The ID of the snapshot. Type: String Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeSize</i>	The size of the volume, in GiBs. Type: Integer Default: None Condition: Required if you are not creating a volume from a snapshot.	Conditional
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.DeleteOnTermination</i>	Whether the volume is deleted on instance termination. Type: Boolean Default: true	No
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeType</i>	The volume type. Type: String Valid values: standard io1 Default: standard	No

**Amazon Elastic Compute Cloud API Reference
Request Parameters**

Name	Description	Required
<i>LaunchSpecification.BlockDeviceMappings.Types</i>	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is <code>io1</code> ; not used with <code>standard</code> volumes. Default: None	Conditional
<i>LaunchSpecification.Monitoring.Enabled</i>	Enables monitoring for the instance. Type: String Default: Disabled	No
<i>LaunchSpecification.SubnetId</i>	The ID of the Amazon VPC subnet in which to launch the Spot Instance. Type: String Default: None	No
<i>LaunchSpecification.NetworkInterface.n.NetworkInterfaceId</i>	Attaches an existing interface to a single instance. Requires <code>n=1</code> instances (available only in Amazon VPC). Type: String Default:	No
<i>LaunchSpecification.NetworkInterface.n.DeviceIndex</i>	Applies to both attaching existing network interfaces and when creating new network interfaces (available only in Amazon VPC). Type: Integer Default:	No
<i>LaunchSpecification.NetworkInterface.n.SubnetId</i>	Applies only when creating new network interfaces (available only in Amazon VPC). Type: String Default:	No
<i>LaunchSpecification.NetworkInterface.n.Description</i>	Applies only when creating new network interfaces (available only in Amazon VPC). Type: String Default:	No
<i>LaunchSpecification.NetworkInterface.n.PrivateIpAddress</i>	Specifies the primary private IP address of the network interface. Applies only when creating new network interfaces. Requires <code>n=1</code> network interfaces in launch (available only in Amazon VPC). Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter if you are also specifying <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary</code> with a value of <code>true</code> with the <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</code> option. Type: String Default:	No

**Amazon Elastic Compute Cloud API Reference
Request Parameters**

Name	Description	Required
<i>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</i>	<p>Specifies the primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch (available only in Amazon VPC).</p> <p>Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with <i>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary</i> with a value of <code>true</code> if you are also specifying the <i>LaunchSpecification.NetworkInterface.n.PrivateIpAddress</i> option.</p> <p>Type: String Default:</p>	No
<i>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary</i>	<p>Whether the private IP address is the primary private IP address. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch (available only in Amazon VPC).</p> <p>Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with a value of <code>true</code> with the <i>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</i> option if you specify the <i>LaunchSpecification.NetworkInterface.n.PrivateIpAddress</i> option.</p> <p>Type: String Default:</p>	No
<i>LaunchSpecification.NetworkInterface.n.SecondaryPrivateIpAddressCount</i>	<p>Specifies 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 (available only in Amazon VPC).</p> <p>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 <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>For a single network interface, you cannot specify this option and specify more than one private IP address using <i>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</i>.</p> <p>Type: Integer Default: None</p>	No
<i>LaunchSpecification.NetworkInterface.n.SecurityGroupId.n</i>	<p>The security group IDs to associate with the created instance. Applies only when creating new network interfaces.</p> <p>Type: String Default:</p>	No
<i>LaunchSpecification.NetworkInterface.n.DeleteOnTermination</i>	<p>Applies to all network interfaces.</p> <p>Type: Boolean Default:</p>	No

Name	Description	Required
<i>LaunchSpecification.IamInstanceProfile.Arn</i>	The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances. Type: String Default: None	No
<i>LaunchSpecification.IamInstanceProfile.Name</i>	The name of the IAM Instance Profile (IIP) to associate with the instances. Type: String Default: None	No
<i>LaunchSpecification.EbsOptimized</i>	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: <code>false</code>	No

Response Elements

The elements in the following table are wrapped in a `RequestSpotInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotInstanceRequestSet</code>	Information about the Spot Instance request, wrapped in an <code>item</code> element. Type: SpotInstanceRequestSetItemType (p. 517)

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-43a4412a
&LaunchSpecification.KeyName=MyKeypair
&LaunchSpecification.Group.1=webserv
&LaunchSpecification.InstanceType=m1.small
```

```
&LaunchSpecification.IamInstanceProfile.Name=s3access  
&AUTHPARAMS
```

Example Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">  
  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <spotInstanceRequestSet>  
    <item>  
      <spotInstanceRequestId>sir-83d64e02</spotInstanceRequestId>  
      <spotPrice>0.5</spotPrice>  
      <type>one-time</type>  
      <state>open</state>  
      <availabilityZoneGroup>MyAzGroup</availabilityZoneGroup>  
      <launchSpecification>  
        <imageId>ami-43a4412a</imageId>  
        <groupSet>  
          <item>  
            <groupId></groupId>  
            <groupName></groupName>  
          </item>  
        </groupSet>  
        <instanceType>m1.small</instanceType>  
        <blockDeviceMapping/>  
        <monitoring>  
          <enabled>>false</enabled>  
        </monitoring>  
        <ebsOptimized>>false</ebsOptimized>  
      </launchSpecification>  
      <createTime>2010-10-20T18:23:41.000Z</createTime>  
      <productDescription>Linux/UNIX</productDescription>  
    </item>  
    <item>  
      ...  
    </item>  
  </spotInstanceRequestSet>  
</RequestSpotInstancesResponse>
```

Related Operations

- [DescribeSpotInstanceRequests](#) (p. 280)
- [CancelSpotInstanceRequests](#) (p. 53)
- [DescribeSpotPriceHistory](#) (p. 286)

ResetImageAttribute

Description

Resets an attribute of an AMI to its default value.

Note

The `productCodes` attribute cannot be reset.

Request Parameters

Name	Description	Required
<i>ImageId</i>	The ID of the AMI. Type: String Default: None	Yes
<i>Attribute</i>	The attribute to reset (currently you can only reset the launch permission attribute). Type: String Default: None Valid value: <code>launchPermission</code>	Yes

Response Elements

The elements in the following table are wrapped in a `ResetImageAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

Related Operations

- [ModifyImageAttribute](#) (p. 353)
- [DescribeImageAttribute](#) (p. 184)

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 exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. The default value is `true`, which means checking is enabled. The value must be `false` for the instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

Name	Description	Required
<code>InstanceId</code>	The ID of the instance. Type: String Default: None	Yes
<code>Attribute</code>	The attribute to reset. Type: String Default: None Valid values: <code>kernel</code> <code>ramdisk</code> <code>sourceDestCheck</code>	Yes

Response Elements

The elements in the following table are wrapped in a `ResetInstanceAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example resets the `kernel` attribute.

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

Example Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

Related Operations

- [ModifyInstanceAttribute](#) (p. 356)
- [DescribeInstanceAttribute](#) (p. 195)

ResetNetworkInterfaceAttribute

Description

Resets a network interface attribute. Only one attribute can be specified per call.

Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The ID of the network interface. Type: String Default: None	Yes
<i>Attribute=[sourceDestCheck]</i>	The name of the attribute to reset; <i>sourceDestCheck</i> defaults to <i>true</i> . Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `ResetNetworkInterfaceAttribute` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example resets the `sourceDestCheck` attribute for the elastic network interface (ENI) `eni-ffda3197`.

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

Example Response

```
<ResetNetworkInterfaceAttributeResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
  <return>true</return>
</ResetNetworkInterfaceAttributeResponse>
```

Related Operations

- [AttachNetworkInterface](#) (p. 27)
- [DetachNetworkInterface](#) (p. 324)
- [CreateNetworkInterface](#) (p. 77)
- [DeleteNetworkInterface](#) (p. 132)
- [DescribeNetworkInterfaceAttribute](#) (p. 231)
- [DescribeNetworkInterfaces](#) (p. 233)
- [ModifyNetworkInterfaceAttribute](#) (p. 359)

ResetSnapshotAttribute

Description

Resets permission settings for the specified snapshot.

Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the snapshot. Type: String Default: None	Yes
<i>Attribute</i>	The attribute to reset (currently only the attribute for permission to create volumes can be reset) Type: String Default: None Valid value: <code>createVolumePermission</code>	Yes

Response Elements

The elements in the following table are wrapped in a `ResetSnapshotAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example resets the permissions for `snap-78a54011`, making it a private snapshot that can only be used by the account that created it.

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-78a54011
&Attribute=createVolumePermission
&AUTHPARAMS
```

Example Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

Related Operations

- [ModifySnapshotAttribute](#) (p. 361)
- [DescribeSnapshotAttribute](#) (p. 271)
- [DescribeSnapshots](#) (p. 273)
- [CreateSnapshot](#) (p. 95)

RevokeSecurityGroupEgress

Description

This action applies only to security groups in a VPC. It doesn't work with EC2 security groups. For information about Amazon Virtual Private Cloud and VPC security groups, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

The action removes one or more egress rules from a VPC security group. The values that you specify in the revoke request (e.g., ports, etc.) 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.

Request Parameters

Name	Description	Required
<i>GroupId</i>	The ID of the VPC security group to modify. Type: String Default: None	Yes
<i>IpPermissions.n.IpProtocol</i>	The IP protocol name or number (go to Protocol Numbers). When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, <code>tcp</code> , <code>udp</code> , or <code>icmp</code>). Type: String Valid values: <code>tcp</code> <code>udp</code> <code>icmp</code> or any protocol number (go to Protocol Numbers). Use <code>-1</code> to specify all.	Yes
<i>IpPermissions.n.FromPort</i>	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 Condition: Required for ICMP and any protocol that uses ports	Conditional
<i>IpPermissions.n.ToPort</i>	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 Condition: Required for ICMP and any protocol that uses ports	Conditional

Name	Description	Required
<i>IpPermissions.n.Groups.m.GroupId</i>	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.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	The CIDR range. Cannot be used when specifying a destination security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.	Conditional

Response Elements

The elements in the following table are wrapped in a `RevokeSecurityGroupEgressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

Examples

Example Request

This example revokes the access that the `webserv` VPC security group (with 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 VPC security group with ID `sg-1a2b3c4d` has to the VPC security group with 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupEgressResponse>
```

Related Operations

- [CreateSecurityGroup](#) (p. 93)
- [DescribeSecurityGroups](#) (p. 267)
- [AuthorizeSecurityGroupEgress](#) (p. 34)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [AuthorizeSecurityGroupIngress](#) (p. 409)
- [DeleteSecurityGroup](#) (p. 140)

RevokeSecurityGroupIngress

Description

This action applies to both EC2 security groups and VPC security groups. For information about VPC security groups and how they differ from EC2 security groups, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

This action removes one or more ingress rules from a security group. The values that you specify in the revoke request (e.g., ports, etc.) must match the existing rule's values for the rule to be removed.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

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

Request Parameters

Name	Description	Required
<i>UserId</i>	Deprecated	No
<i>GroupId</i>	The ID of the EC2 or VPC security group to modify. The group must belong to your account. Type: String Default: None Condition: Required for VPC security groups; can be used instead of <i>GroupName</i> for EC2 security groups	Conditional
<i>GroupName</i>	The name of the EC2 security group to modify. Type: String Default: None Condition: Can be used instead of <i>GroupId</i> for EC2 security groups	Conditional
<i>IpPermissions.n.IpProtocol</i>	The IP protocol name or number (see Protocol Numbers). EC2 security groups can have rules only for TCP, UDP, and ICMP, whereas VPC security groups can have rules assigned to any protocol number. When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, <code>tcp</code> , <code>udp</code> , or <code>icmp</code>). Type: String Valid values for EC2 security groups: <code>tcp</code> <code>udp</code> <code>icmp</code> or the corresponding protocol number (<code>6</code> <code>17</code> <code>1</code>). Valid values for VPC groups: <code>tcp</code> <code>udp</code> <code>icmp</code> or any protocol number (see Protocol Numbers). Use <code>-1</code> to specify all.	Required

Name	Description	Required
<i>IpPermissions.n.FromPort</i>	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 Default: Required for ICMP and any protocol that uses ports	Conditional
<i>IpPermissions.n.ToPort</i>	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 Default: Required for ICMP and any protocol that uses ports	Conditional
<i>IpPermissions.n.Groups.m.UserId</i>	The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For EC2 security groups only. Required if modifying access for one or more source security groups.	Conditional
<i>IpPermissions.n.Groups.m.GroupName</i>	The name of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: Required if modifying access for one or more source security groups.	Conditional
<i>IpPermissions.n.Groups.m.GroupId</i>	The ID of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For VPC security groups only. Required if modifying access for one or more source security groups.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	The CIDR range. Cannot be used when specifying a source security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.	Conditional

Response Elements

The elements in the following table are wrapped in a `RevokeSecurityGroupIngressResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns <code>true</code> 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 webserv security group. Note that if the security group were a VPC security group, the ID of the security group would instead be required in the request.

```
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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

Related Operations

- [CreateSecurityGroup](#) (p. 93)
- [DescribeSecurityGroups](#) (p. 267)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [DeleteSecurityGroup](#) (p. 140)

RunInstances

Description

Launches the specified number of instances of an AMI for which you have permissions.

If Amazon EC2 cannot launch the minimum number of instances you request, no instances will be launched. If there is insufficient capacity to launch the maximum number of instances you request, Amazon EC2 launches the minimum number specified and allocates the remaining available instances using round robin.

Note

Every instance is launched in a security group (created using the `CreateSecurityGroup` operation). If you don't specify a security group in the `RunInstances` request, the "default" security group is used.

For Linux instances, you can provide an optional key pair ID in the launch request (created using the `CreateKeyPair` or `ImportKeyPair` operation). The instances will have access to the public key at boot. You can use this key to provide secure access to an instance of an image on a per-instance basis. Amazon EC2 public images use this feature to provide secure access without passwords.

Important

Launching public images without a key pair ID will leave them inaccessible.

The public key material is made available to the instance at boot time by placing it in the `openssh_id.pub` file on a logical device that is exposed to the instance as `/dev/sda2` (the instance store). The format of this file is suitable for use as an entry within `~/.ssh/authorized_keys` (the OpenSSH format). This can be done at boot (e.g., as part of `rc.local`) allowing for secure access without passwords.

You can provide optional user data in the launch request. All instances that collectively comprise the launch request have access to this data. For more information, see [Instance Metadata](#) in the *Amazon Elastic Compute Cloud User Guide*.

Note

If any of the AMIs have a product code attached for which the user has not subscribed, the `RunInstances` call will fail.

Request Parameters

Name	Description	Required
<i>ImageId</i>	The ID of the AMI. Type: String Default: None	Yes
<i>MinCount</i>	The minimum number of instances to launch. If the value is more than Amazon EC2 can launch, no instances are launched at all. Type: Integer Default: None Constraints: Between 1 and the maximum number allowed for your account (default: 20).	Yes

**Amazon Elastic Compute Cloud API Reference
Request Parameters**

Name	Description	Required
<i>MaxCount</i>	The maximum number of instances to launch. If the value is more than Amazon EC2 can launch, the largest possible number above MinCount will be launched instead. Type: Integer Default: None Constraints: Between 1 and the maximum number allowed for your account (default: 20).	Yes
<i>KeyName</i>	The name of the key pair to use. Type: String Default: None	No
<i>SecurityGroupId.n</i>	One or more security group IDs. Type: String Default: None Condition: Required for VPC security groups; optional for EC2 security groups	Conditional
<i>SecurityGroup.n</i>	One or more security group names. Type: String Default: None Condition: Valid only for EC2 security groups; for EC2 groups either a group ID or a group name is accepted	Conditional
<i>UserData</i>	The Base64-encoded MIME user data to be made available to the instance(s) in this reservation. Type: String Default: None	No
<i>AddressingType</i>	This parameter is deprecated. Type: String Default: None	No
<i>InstanceType</i>	The instance type. Type: String Valid values: t1.micro m1.small m1.medium m1.large m1.xlarge c1.medium c1.xlarge m2.xlarge m2.2xlarge m2.4xlarge hi1.4xlarge cc1.4xlarge cg1.4xlarge cc2.8xlarge Default: m1.small	No
<i>Placement.AvailabilityZone</i>	The Availability Zone to launch the instance into. Type: String Default: EC2 chooses a zone for you	No
<i>Placement.GroupName</i>	The name of an existing placement group you want to launch the instance into (for cluster instances). Type: String Default: None	No

Amazon Elastic Compute Cloud API Reference
Request Parameters

Name	Description	Required
<i>Placement.Tenancy</i>	The tenancy of the instance. An instance with a tenancy of <code>dedicated</code> runs on single-tenant hardware and can only be launched into a VPC. Type: String Default: default	No
<i>KernelId</i>	The ID of the kernel with which to launch the instance. Type: String Default: None	No
<i>RamdiskId</i>	The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk. To find kernel requirements, refer to the Resource Center and search for the kernel ID. Type: String Default: None	No
<i>BlockDeviceMapping.n.DeviceName</i>	The device name exposed to the instance (for example, <code>/dev/sdh</code> or <code>xvdh</code>). For more information, see Block Device Mapping . Type: String Default: None	No
<i>BlockDeviceMapping.n.NoDevice</i>	Suppresses the device mapping. Type: Empty String Default: None	No
<i>BlockDeviceMapping.n.VirtualName</i>	The virtual device name, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None	No
<i>BlockDeviceMapping.n.Ebs.SnapshotId</i>	The ID of the snapshot. Type: String Default: None	No
<i>BlockDeviceMapping.n.Ebs.VolumeSize</i>	The size of the volume, in GiBs. Type: Integer Default: None Condition: Required if you are not creating a volume from a snapshot.	Conditional
<i>BlockDeviceMapping.n.Ebs.DeleteOnTermination</i>	Whether the volume is deleted on instance termination. Type: Boolean Default: true	No
<i>BlockDeviceMapping.n.Ebs.VolumeType</i>	The volume type. Type: String Valid values: <code>standard</code> <code>io1</code> Default: <code>standard</code>	No

Amazon Elastic Compute Cloud API Reference
Request Parameters

Name	Description	Required
<i>BlockDeviceMapping.n.Ebs.Iops</i>	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is <code>io1</code> ; not used with <code>standard</code> volumes. Default: None	Conditional
<i>Monitoring.Enabled</i>	Enables monitoring for the instance. Type: Boolean Default: <code>false</code>	No
<i>SubnetId</i>	If you're using Amazon Virtual Private Cloud, this specifies the ID of the subnet you want to launch the instance into. Type: String Default: None	No
<i>DisableApiTermination</i>	Whether you can terminate the instance using the EC2 API. A value of <code>true</code> means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of <code>false</code> means you can. If you set this to <code>true</code> , and you later want to terminate the instance, you must first change the <code>disableApiTermination</code> attribute's value to <code>false</code> using <code>ModifyInstanceAttribute</code> . Type: Boolean Default: <code>false</code>	No
<i>InstanceInitiatedShutdownBehavior</i>	Whether the instance stops or terminates on instance-initiated shutdown. Type: String Valid values: <code>stop</code> <code>terminate</code> Default: <code>stop</code>	No
<i>PrivateIpAddress</i>	If you're using Amazon Virtual Private Cloud, you can optionally use this parameter to assign the instance a specific available IP address from the subnet (e.g., 10.0.0.25) as the primary IP address. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter if you are also specifying <code>PrivateIpAddresses.n.Primary</code> with a value of <code>true</code> with the <code>PrivateIpAddresses.n.PrivateIpAddress</code> option. Type: String Default: Amazon VPC selects an IP address from the subnet for the instance	No

Amazon Elastic Compute Cloud API Reference
Request Parameters

Name	Description	Required
<i>ClientToken</i>	Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, go to How to Ensure Idempotency in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String Default: None Constraints: Maximum 64 ASCII characters	No
<i>NetworkInterface.n.NetworkInterfaceId</i>	Attaches an existing interface to a single instance. Requires n=1 instances. Type: String Default: None	No
<i>NetworkInterface.n.DeviceIndex</i>	Applies to both attaching existing network interfaces and when creating new network interfaces. Type: Integer Default: None	No
<i>NetworkInterface.n.SubnetId</i>	Applies only when creating new network interfaces. Type: String Default: None	No
<i>NetworkInterface.n.Description</i>	Applies only when creating new network interfaces. Type: String Default: None	No
<i>NetworkInterface.n.PrivateIpAddress</i>	The primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch. Type: String Default: None	No
<i>NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</i>	The private IP address of the specified network interface. 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 cannot specify this parameter with the <i>NetworkInterface.n.PrivateIpAddresses.n.Primary</i> value of <i>true</i> if you designate a primary private IP address using the <i>NetworkInterface.n.PrivateIpAddress</i> option. Type: String Default: None	No

Name	Description	Required
<i>NetworkInterface.n.PrivateIpAddresses.n.Primary</i>	Whether the private IP address is the primary private IP address. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with the <code>NetworkInterface.n.PrivateIpAddresses.n.Primary</code> value of <code>true</code> and the <code>NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</code> option if you designate a primary private IP address using <code>NetworkInterface.n.PrivateIpAddress</code> . Type: Boolean Default: None	No
<i>NetworkInterface.n.SecondaryPrivateIpAddressCount</i>	The number of private IP addresses to assign to a network interface. For a single network interface, you cannot specify this option and specify more than one private IP address using <code>NetworkInterface.n.PrivateIpAddress</code> .	No
<i>NetworkInterface.n.SecurityGroupId.n</i>	Applies only when creating new network interfaces. Type: String Default: None	No
<i>NetworkInterface.n.DeleteOnTermination</i>	Applies to all network interfaces. Type: Boolean Default: None	No
<i>IamInstanceProfile.Arn</i>	Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances. Type: String Default: None	No
<i>IamInstanceProfile.Name</i>	The name of the IAM Instance Profile (IIP) to associate with the instances. Type: String Default: None	No
<i>EbsOptimized</i>	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: <code>false</code>	No

Response Elements

The elements in the following table are wrapped in a `RunInstancesResponse` structure.

Name	Description
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 <code>item</code> element. Type: GroupItemType (p. 468)
instancesSet	A list of instances. Each instance is wrapped in an <code>item</code> element. Type: RunningInstancesItemType (p. 512)
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 of the `ami-60a54009` AMI.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&Placement.AvailabilityZone=us-east-1b
&Monitoring.Enabled=true
&AUTHPARAMS
```

Example Response

```
<RunInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservationId>r-47a5402e</reservationId>
  <ownerId>111122223333</ownerId>
  <groupSet>
    <item>
      <groupId>sg-245f6a01</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <instancesSet>
    <item>
      <instanceId>i-2ba64342</instanceId>
      <imageId>ami-60a54009</imageId>
```

```
<instanceState>
  <code>0</code>
  <name>pending</name>
</instanceState>
<privateDnsName/>
<dnsName/>
<reason/>
<amiLaunchIndex>0</amiLaunchIndex>
<instanceType>m1.small</instanceType>
<launchTime>2007-08-07T11:51:50.000Z</launchTime>
<placement>
  <availabilityZone>us-east-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<monitoring>
  <state>enabled</state>
</monitoring>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<hypervisor>xen</hypervisor>
<ebsOptimized>>false</ebsOptimized>
</item>
<item>
  <instanceId>i-2bc64242</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName/>
  <dnsName/>
  <amiLaunchIndex>1</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
  <launchTime>2007-08-07T11:51:50.000Z</launchTime>
  <placement>
    <availabilityZone>us-east-1b</availabilityZone>
    <groupName/>
    <tenancy>default</tenancy>
  </placement>
  <monitoring>
    <state>enabled</state>
  </monitoring>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-245f6a01</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <virtualizationType>paravirtual</virtualizationType>
```

```
<hypervisor>xen</hypervisor>
<ebsOptimized>>false</ebsOptimized>
<item>
  <instanceId>i-2be64332</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName/>
  <dnsName/>
  <amiLaunchIndex>2</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
  <launchTime>2007-08-07T11:51:50.000Z</launchTime>
  <placement>
    <availabilityZone>us-east-1b</availabilityZone>
    <groupName/>
    <tenancy>default</tenancy>
  </placement>
  <monitoring>
    <state>enabled</state>
  </monitoring>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-245f6a01</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <virtualizationType>paravirtual</virtualizationType>
  <hypervisor>xen</hypervisor>
  <ebsOptimized>>false</ebsOptimized>
</item>
</instancesSet>
</RunInstancesResponse>
```

Example Request

This example launches an instance of the `ami-31814f58` AMI and attaches an elastic network interface to it.

```
https://ec2.amazonaws.com/?Action=RunInstances
ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&Monitoring.Enabled=false
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

Example Response

```
<RunInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>e86ff3c8-2400-45e3-a4e7-f158a69283d4</requestId>
  <reservationId>r-157ad274</reservationId>
```

```
<ownerId>111122223333</ownerId>
<groupSet/>
<instancesSet>
  <item>
    <instanceId>i-0ee0356c</instanceId>
    <imageId>ami-31814f58</imageId>
    <instanceState>
      <code>0</code>
      <name>pending</name>
    </instanceState>
    <privateDnsName/>
    <dnsName/>
    <reason/>
    <amiLaunchIndex>0</amiLaunchIndex>
    <productCodes/>
    <instanceType>m1.small</instanceType>
    <launchTime>2011-12-20T08:29:31.000Z</launchTime>
    <placement>
      <availabilityZone>us-east-1b</availabilityZone>
      <groupName/>
      <tenancy>default</tenancy>
    </placement>
    <kernelId>aki-805ea7e9</kernelId>
    <monitoring>
      <state>disabled</state>
    </monitoring>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-1ea24976</vpcId>
    <privateIpAddress>10.0.0.142</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-050c1369</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <stateReason>
      <code>pending</code>
      <message>pending</message>
    </stateReason>
    <architecture>i386</architecture>
    <rootDeviceType>ebs</rootDeviceType>
    <rootDeviceName>/dev/sda1</rootDeviceName>
    <blockDeviceMapping/>
    <virtualizationType>paravirtual</virtualizationType>
    <clientToken/>
    <hypervisor>xen</hypervisor>
    <networkInterfaceSet>
      <item>
        <networkInterfaceId>eni-c6bb50ae</networkInterfaceId>
        <subnetId>subnet-b2a249da</subnetId>
        <vpcId>vpc-1ea24976</vpcId>
        <description/>
        <ownerId>111122223333</ownerId>
        <status>in-use</status>
        <privateIpAddress>10.0.0.142</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
```

```
        <item>
          <groupId>sg-050c1369</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <attachment>
        <attachmentId>eni-attach-0326646a</attachmentId>
        <deviceIndex>0</deviceIndex>
        <status>attaching</status>
        <attachTime>2011-12-20T08:29:31.000Z</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
      </attachment>
    </item>
  </networkInterfaceSet>
</instancesSet>
</RunInstancesResponse>
```

Example Request

The following example launches an m1.large instance into Amazon VPC in subnet subnet-a61dafcf with a single network interface, 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
&Monitoring.Enabled=false
&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
```

Related Operations

- [DescribeInstances](#) (p. 198)
- [StopInstances](#) (p. 425)
- [StartInstances](#) (p. 423)
- [TerminateInstances](#) (p. 427)
- [AuthorizeSecurityGroupIngress](#) (p. 37)
- [RevokeSecurityGroupIngress](#) (p. 409)
- [DescribeSecurityGroups](#) (p. 267)
- [CreateSecurityGroup](#) (p. 93)
- [CreateKeyPair](#) (p. 70)
- [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.

Note

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 [Using Amazon EBS-Backed AMIs and Instances](#).

Request Parameters

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `StartInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	A list of instance state changes. Each change is wrapped in an <code>item</code> element. Type: InstanceStateChangeType (p. 483)

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/2012-08-15/">
  <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 Operations

- [StopInstances](#) (p. 425)
- [RunInstances](#) (p. 412)
- [DescribeInstances](#) (p. 198)
- [TerminateInstances](#) (p. 427)

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.

Important

Although Spot Instances can use Amazon EBS-backed AMIs, they don't support Stop/Start. In other words, you can't stop and start Spot Instances launched from an AMI with an Amazon EBS root device.

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.

Note

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, go to the "Stop/Start" and "Instance Termination" in [Basics of Amazon EBS-Backed AMIs and Instances](#) in the Amazon EC2 User Guide.

Request Parameters

Name	Description	Required
<i>InstanceIds</i>	One or more instance IDs. Type: String Default: None	Yes
<i>Force</i>	Forces the instance to stop. The instance 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	No

Response Elements

The elements in the following table are wrapped in a `StopInstancesResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
instancesSet	A list of instance state changes. Each change is wrapped in an <code>item</code> element. Type: InstanceStateChangeType (p. 483)

Examples

Example Request

This example stops the `i-10a64379` instance without using the "force" option.

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

Example Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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 Operations

- [StartInstances](#) (p. 423)
- [RunInstances](#) (p. 412)
- [DescribeInstances](#) (p. 198)
- [TerminateInstances](#) (p. 427)

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, go to the "Stop/Start" and "Instance Termination" in [Basics of Amazon EBS-Backed AMIS and Instances](#) in the Amazon EC2 User Guide.

Request Parameters

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in a `TerminateInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	A list of instance state changes. Each change is wrapped in an <code>item</code> element. Type: InstanceStateChangeType (p. 483)

Examples

Example Request

This example terminates the `i-3ea74257` instance.

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-3ea74257
&AUTHPARAMS
```

Example Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/">
  <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 Operations

- [DescribeInstances](#) (p. 198)
- [RunInstances](#) (p. 412)
- [StopInstances](#) (p. 425)
- [StartInstances](#) (p. 423)

UnassignPrivateIpAddresses

Description

Unassigns one or more secondary private IP addresses from a network interface in Amazon VPC.

This command is only available in Amazon VPC.

Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The network interface from which the secondary private IP address will be unassigned. Type: String Default: None	Yes
<i>PrivateIpAddress.n</i>	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 Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `UnassignPrivateIpAddressesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns <code>true</code> 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/2012-08-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</UnassignPrivateIpAddresses>
```

Related Operations

- [AssignPrivateIpAddresses](#) (p. 15)

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

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

Response Elements

The elements in the following table are wrapped in an `UnmonitorInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	A list of monitoring information for one or more instances. Each set of information is wrapped in an <code>item</code> element. Type: MonitorInstancesResponseSetItemType (p. 491)

Examples

Example Request

This example disables monitoring for 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/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
```

```
        <state>disabled</state>
      </monitoring>
    </item>
    <item>
      <instanceId>i-23a3397d</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
  </instancesSet>
</UnmonitorInstancesResponse>
```

Related Operations

- [MonitorInstances](#) (p. 365)
- [RunInstances](#) (p. 412)

Data Types

Topics

- [AssignPrivateIpAddressesSetItemRequestType](#) (p. 436)
- [AssignPrivateIpAddressesType](#) (p. 436)
- [AttachmentSetItemResponseType](#) (p. 437)
- [AttachmentType](#) (p. 438)
- [AvailabilityZoneItemType](#) (p. 438)
- [AvailabilityZoneMessageType](#) (p. 439)
- [BlockDeviceMappingItemType](#) (p. 440)
- [BundleInstanceS3StorageType](#) (p. 440)
- [BundleInstanceTaskErrorType](#) (p. 441)
- [BundleInstanceTaskStorageType](#) (p. 442)
- [BundleInstanceTaskType](#) (p. 443)
- [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 444)
- [ConversionTaskType](#) (p. 444)
- [CreateVolumePermissionItemType](#) (p. 445)
- [CreateVpnConnectionRouteResponseType](#) (p. 446)
- [CreateVpnConnectionRouteType](#) (p. 446)
- [CreateVpnConnectionType](#) (p. 447)
- [CustomerGatewayType](#) (p. 447)
- [DeleteVpnConnectionRouteResponseType](#) (p. 448)
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- [DescribeAddressesResponseItemType](#) (p. 449)
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- [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 453)
- [DescribeReservedInstancesListingSetItemType](#) (p. 454)
- [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 454)
- [DescribeReservedInstancesOfferingsResponseType](#) (p. 456)
- [DescribeReservedInstancesResponseSetItemType](#) (p. 456)
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- [DescribeSnapshotsSetItemResponseType](#) (p. 458)

- [DescribeVolumesSetItemResponseType](#) (p. 459)
- [DhcpConfigurationItemType](#) (p. 460)
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- [EbsBlockDeviceType](#) (p. 464)
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- [EnableVgwRoutePropagationResponseType](#) (p. 466)
- [ExportTaskResponseType](#) (p. 466)
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- [GroupItemType](#) (p. 468)
- [IamInstanceProfileRequestType](#) (p. 469)
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- [ImportVolumeTaskDetailsType](#) (p. 472)
- [InstanceBlockDeviceMappingItemType](#) (p. 473)
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- [InstanceCountsSetItemType](#) (p. 474)
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- [InstanceEbsBlockDeviceType](#) (p. 475)
- [InstanceExportTaskResponseType](#) (p. 476)
- [InstanceStatusEventsSetType](#) (p. 476)
- [InstanceStatusEventType](#) (p. 477)
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- [InstanceStatusSetType](#) (p. 478)
- [InstanceStatusDetailsSetType](#) (p. 479)
- [InstanceStatusType](#) (p. 480)
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- [InstanceNetworkInterfaceSetItemRequestType](#) (p. 481)
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- [VpcType](#) (p. 528)
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AssignPrivateIpAddressesSetItemRequestType

The AssignPrivateIpAddressesSetItemRequestType data type.

Ancestors

- [AssignPrivateIpAddressesType](#)

Relevant Operations

- [AssignPrivateIpAddresses](#)
- [UnassignPrivateIpAddresses](#)

Contents

The following table describes the elements contained in AssignPrivateIpAddressesSetItemRequest.

Name	Description
privateIpAddress	The private IP address. Type: String

AssignPrivateIpAddressesType

The AssignPrivateIpAddressesType data type.

Ancestors

- [AssignPrivateIpAddressesType](#)

Relevant Operations

- [AssignPrivateIpAddresses](#)

Contents

The following table describes the elements contained in the `AssignPrivateIpAddressesType`.

Name	Description
<code>networkInterfaceId</code>	The ID of the network interface. Type: String
<code>privateIpAddressesSet</code>	The list of IP addresses to assign to the network interface. Type: AssignPrivateIpAddressesSetItemRequestType (p. 436)
<code>secondaryPrivateIpAddressCount</code>	The number of secondary private IP addresses. You cannot specify this option with the <code>privateIpAddressesSet</code> option. Type: Integer
<code>allowReassignment</code>	Whether to allow a secondary private IP address to be reassigned if it is currently assigned to another instance or network interface. Type: Boolean

AttachmentSetItemResponseType

The `AttachmentSetItemResponseType` data type.

Ancestors

- `AttachmentSetResponseType`

Relevant Operations

- `DescribeVolumes`

Contents

The following table describes the elements contained in `AttachmentSetItemResponseType`.

Name	Description
<code>volumeId</code>	The ID of the volume. Type: String
<code>instanceId</code>	The ID of the instance. Type: String
<code>device</code>	The device name exposed to the instance (e.g., <code>/dev/sdh</code>). Type: String

Name	Description
status	The attachment state. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>
attachTime	The time stamp when the attachment initiated. Type: DateTime
deleteOnTermination	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean

AttachmentType

The AttachmentType data type.

Ancestors

- AttachmentSetType
- AttachVpnGatewayResponse

Relevant Operations

- CreateVpnGateway
- DescribeVpnGateways
- AttachVpnGateway

Contents

The following table describes the elements contained in AttachmentType.

Name	Description
vpnId	The ID of the VPC the virtual private gateway is attached to. Type: String
state	The current state of the attachment. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>

AvailabilityZoneItem

The AvailabilityZoneItem data type.

Ancestors

- AvailabilityZoneSetType

Relevant Operations

- DescribeAvailabilityZones

Contents

The following table describes the elements contained in AvailabilityZoneItem type.

Name	Description
zoneName	The name of the Availability Zone. Type: String
zoneState	The state of the Availability Zone. Type: String
regionName	The name of the Region. Type: String
messageSet	Any messages about the Availability Zone, each one wrapped in an <code>item</code> element. Type: AvailabilityZoneMessageType (p. 439)

AvailabilityZoneMessageType

The AvailabilityZoneMessageType data type.

Ancestors

- AvailabilityZoneMessageSetType

Relevant Operations

- DescribeAvailabilityZones

Contents

The following table describes the elements contained in AvailabilityZoneMessageType.

Name	Description
message	The message about the Availability Zone. Type: String

BlockDeviceMappingItemType

The BlockDeviceMappingItemType data type.

Ancestors

- BlockDeviceMappingType

Relevant Operations

- DescribeImageAttribute
- DescribeImages
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RegisterImage
- RunInstances

Contents

The following table describes the elements contained in BlockDeviceMappingItemType.

Name	Description
deviceName	The device name exposed to the instance (e.g., /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. 464)
noDevice	Include this empty element to suppress the specified device included in the block device mapping of the AMI.

BundleInstanceS3StorageType

The BundleInstanceS3StorageType data type.

Ancestors

- [BundleInstanceTaskStorageType](#) (p. 442)

Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)
- [BundleInstance](#)

Contents

The following table describes the elements contained in `BundleInstanceS3StorageType`.

Name	Description
<code>awsAccessKeyId</code>	The Access Key ID of the owner of the Amazon S3 bucket. Type: String
<code>bucket</code>	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
<code>prefix</code>	The beginning of the file name of the AMI. Type: String
<code>uploadPolicy</code>	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
<code>uploadPolicySignature</code>	The signature of the Base64 encoded JSON document. Type: String

BundleInstanceTaskErrorType

The `BundleInstanceTaskErrorType` data type.

Ancestors

- [BundleInstanceTaskType](#) (p. 443)

Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)

Contents

The following table describes the elements contained in `BundleInstanceTaskErrorType`.

Name	Description
code	The error code. Type: String
message	The error message. Type: String

BundleInstanceTaskStorageType

The `BundleInstanceTaskStorageType` data type.

Ancestors

- [BundleInstanceTaskType](#) (p. 443)
- [BundleInstanceType](#)

Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)
- [BundleInstance](#)

Contents

The following table describes the elements contained in `BundleInstanceTaskStorageType`.

Name	Description
S3	An Amazon S3 storage location. Type: BundleInstanceS3StorageType (p. 440)

BundleInstanceTaskType

The BundleInstanceTaskType data type.

Ancestors

- BundleInstanceResponseType
- BundleInstanceTasksSetType
- CancelBundleTaskResponseType

Relevant Operations

- BundleInstance
- DescribeBundleTasks
- CancelBundleTask

Contents

The following table describes the elements contained in BundleInstanceTaskType.

Name	Description
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. 441)

CancelSpotInstanceRequestsResponseSetItemType

The CancelSpotInstanceRequestsResponseSetItemType data type.

Ancestors

- CancelSpotInstanceRequestsResponseSetType

Relevant Operations

- CancelSpotInstanceRequests

Contents

The following table describes the elements contained in CancelSpotInstanceRequestsResponseSetItemType.

Name	Description
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

The ConversionTaskType data type.

Ancestors

- ConversionTaskSetType
- ImportInstanceResponse
- ImportVolumeResponse

Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements contained in ConversionTaskType.

Name	Description
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. 472)
importInstance	If the task is for importing an instance, this contains information about the import instance task. Type: ImportInstanceTaskDetailsType (p. 471)
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

The CreateVolumePermissionItemType data type.

Ancestors

- CreateVolumePermissionListType

Relevant Operations

- ModifySnapshotAttribute
- DescribeSnapshotAttribute

Contents

The following table describes the elements contained in CreateVolumePermissionItemType.

Name	Description
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

CreateVpnConnectionRouteResponseType

The CreateVpnConnectionRouteResponseType data type.

Relevant Operations

- CreateVpnConnectionRoute

Contents

The following table describes the elements contained in CreateVpnConnectionRouteResponseType.

Name	Description
requestId	The ID of the requests. Type: String
return Type: Boolean	The CIDR block of the destination subnet associated with the data center of the customer. Type: String

CreateVpnConnectionRouteType

The CreateVpnConnectionRouteType data type.

Relevant Operations

- CreateVpnConnectionRoute
- DeleteVpnConnectionRoute

Contents

The following table describes the elements contained in CreateVpnConnectionRouteType.

Name	Description
<code>vpnConnectionId</code>	The ID of the VPN connection. Type: String
<code>destinationCidrBlock</code>	The CIDR block of the destination subnet associated with the data center of the customer. Type: String

CreateVpnConnectionType

The CreateVpnConnectionType data type.

Relevant Operations

- CreateVpnConnection
- DeleteVpnConnection

Contents

The following table describes the elements contained in CreateVpnConnectionType.

Name	Description
<code>customerGatewayId</code>	The ID of the customer gateway. Type: String
<code>type</code>	The type of VPN connection the customer gateway supports (ipsec.1) Type: String
<code>vpnGatewayId</code>	The ID of the VPN gateway. Type: String
<code>options</code>	The option set describing the VPN connection. Type: VpnConnectionOptionsRequestType (p. 529)

CustomerGatewayType

The CustomerGatewayType data type.

Ancestors

- CreateCustomerGatewayResponse
- CustomerGatewaySetType

Relevant Operations

- CreateCustomerGateway
- DescribeCustomerGateways

Contents

The following table describes the elements contained in CustomerGatewayType.

Name	Description
customerGatewayId	The ID of the customer gateway. Type: String
state	The current state of the customer gateway. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
type	The type of VPN connection the customer gateway supports (ipsec.1). Type: String
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 <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

DeleteVpnConnectionRouteResponseType

The DeleteVpnConnectionRouteResponseType data type.

Relevant Operations

- DeleteVpnConnectionRoute

Contents

The following table describes the elements contained in DeleteVpnConnectionRouteResponseType.

Name	Description
requestId	The ID of the requests. Type: String
return Type: Boolean	Indicates whether the request was successful or not. Type: Boolean

DeleteVpnConnectionRouteType

The DeleteVpnConnectionRouteType data type.

Relevant Operations

- CreateVpnConnectionRoute
- DeleteVpnConnectionRoute

Contents

The following table describes the elements contained in DeleteVpnConnectionRouteType.

Name	Description
vpnConnectionId	The ID of the VPN connection. Type: String
destinationCidrBlock	The CIDR block of the destination subnet associated with the data center of the customer. Type: String

DescribeAddressesResponseItem

The DescribeAddressesResponseItem data type.

Ancestors

- DescribeAddressesResponseInfoType

Relevant Operations

- DescribeAddresses

Contents

The following table describes the elements contained in DescribeAddressesResponseItem.

Name	Description
publicIp	The public IP address. Type: String
allocationId	The ID representing the allocation of the address for use with Amazon VPC. Type: String
domain	Whether this Elastic IP address is for EC2 instances (i.e., standard) or VPC instances. Type: String Valid values: <code>standard</code> <code>vpc</code>
instanceId	The ID of the instance the address is associated with (if any). Type: String
associationId	The ID representing the association of a VPC 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

The DescribeImagesResponseItemType data type.

Ancestors

- DescribeImagesResponseInfoType

Relevant Operations

- DescribeImages

Contents

The following table describes the elements contained in DescribeImagesResponseItemType.

Name	Description
imageId	The ID of the AMI. Type: String

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Name	Description
<code>imageLocation</code>	The location of the AMI. Type: String
<code>imageState</code>	Current state of the AMI. If the operation returns <code>available</code> , the image is successfully registered and available for launching. Type: String Valid values: <code>available</code> <code>pending</code> <code>failed</code>
<code>imageOwnerId</code>	AWS account ID of the image owner. Type: String
<code>isPublic</code>	Whether the image has public launch permissions. The value is <code>true</code> if this image has public launch permissions or <code>false</code> if it has only implicit and explicit launch permissions. Type: Boolean
<code>productCodes</code>	Any product codes associated with the AMI, each one wrapped in an <code>item</code> element. Type: ProductCodesSetItemType (p. 504)
<code>architecture</code>	The architecture of the image. Type: String
<code>imageType</code>	The type of image (machine, kernel, or RAM disk). Type: String
<code>kernelId</code>	The kernel associated with the image, if any. Only applicable for machine images. Type: String
<code>ramdiskId</code>	The RAM disk associated with the image, if any. Only applicable for machine images. Type: String
<code>platform</code>	The value is <code>windows</code> for Windows AMIs; otherwise blank. Type: String
<code>stateReason</code>	The reason for the state change. Type: StateReasonType (p. 520)
<code>imageOwnerAlias</code>	The AWS account alias (e.g., <code>amazon</code> , <code>self</code> , etc.) or AWS account ID that owns the AMI. Type: String
<code>name</code>	The name of the AMI that was provided during image creation. Type: String
<code>description</code>	The description of the AMI that was provided during image creation. Type: String

Name	Description
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: <code>ebs</code> <code>instance-store</code>
rootDeviceName	The device name of the root device (e.g., <code>/dev/sda1</code> , or <code>xvda</code>). Type: String
blockDeviceMapping	Any block device mapping entries, each one wrapped in an <code>item</code> element. Type: BlockDeviceMappingItemType (p. 440)
virtualizationType	The type of virtualization of the AMI. Type: String Valid values: <code>paravirtual</code> <code>hvm</code>
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)
hypervisor	The image's hypervisor type. Type: String Valid values: <code>ovm</code> <code>xen</code>

DescribeKeyPairsResponseItemType

The DescribeKeyPairsResponseItemType data type.

Ancestors

- DescribeKeyPairsResponseInfoType

Relevant Operations

- DescribeKeyPairs

Contents

The following table describes the elements contained in DescribeKeyPairsResponseItemType.

Name	Description
keyName	The name of the key pair. Type: String

Name	Description
keyFingerprint	If you used <code>CreateKeyPair</code> to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used <code>ImportKeyPair</code> to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of RFC4716 . Type: String

DescribeReservedInstancesListingsResponseSetItem

The `DescribeReservedInstancesListingsResponseSetItem` data type.

Ancestors

- `DescribeReservedInstancesListingsResponseType`

Relevant Operations

- `DescribeReservedInstancesListings`

Contents

The following table describes the elements contained in `DescribeReservedInstancesListingsResponseSetItem`.

Name	Description
<code>reservedInstancesListingId</code>	The ID of the Reserved Instance listing. Type: String
<code>reservedInstancesId</code>	The ID of the Reserved Instance. Type: String
<code>createDate</code>	The time the listing is created. Type: DateTime
<code>updateDate</code>	The last modified timestamp of the listing. Type: DateTime
<code>status</code>	The status of the Reserved Instance listing. Type: String Valid Values: <code>active</code> <code>pending</code> <code>cancelled</code> <code>closed</code> .
<code>statusMessage</code>	The reason for the current status of the Reserved Instance listing. The response can be blank. Type: String
<code>instanceCounts</code>	Number of instances in this state. Type: InstanceCountsSetType (p. 475)

Name	Description
priceSchedules	Price of the Reserved Instance listing. Type: PriceScheduleSetType (p. 502)
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)
clientToken	The idempotency token you provided when you created the listing. Type: String

DescribeReservedInstancesListingSetItemType

The DescribeReservedInstancesListingSetItemType data type.

Ancestors

- DescribeReservedInstancesListings

Relevant Operations

- DescribeReservedInstancesListings

Contents

The following table describes the elements contained in DescribeReservedInstancesListingsResponseSetItemType.

Name	Description
reservedInstancesListingId	The ID of the Reserved Instance listing. Type: String

DescribeReservedInstancesOfferingsResponseSetItemType

The DescribeReservedInstancesOfferingsResponseSetItemType data type.

Ancestors

- DescribeReservedInstancesOfferingsResponseSetType

Relevant Operations

- DescribeReservedInstancesOfferings

Contents

The following table describes the elements contained in DescribeReservedInstancesOfferingsResponseSetItemType.

Name	Description
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
currencyCode	The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes (e.g., USD, JPY). At this time, the only supported currency is USD. Type: String
offeringType	The Reserved Instance offering type. Type: String
recurringCharges	The recurring charge tag assigned to the resource. Type: RecurringChargesSetItemType (p. 506)
marketplace	Indicates if the offering is available through the Reserved Instance Marketplace (resale) or AWS. Returns <code>true</code> if it is a Marketplace offering. Type: Boolean
pricingDetailsSet	The pricing details of the Reserved Instance offering wrapped in an <code>item</code> element. Type: PricingDetailsSetItemType (p. 503) .

DescribeReservedInstancesOfferingsResponseType

The DescribeReservedInstancesOfferingsResponseType data type.

Ancestors

- DescribeReservedInstancesOfferings

Relevant Operations

- DescribeReservedInstancesOfferings

Contents

The following table describes the elements contained in DescribeReservedInstancesOfferingsResponseType.

Name	Description
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. 454)
nextToken	A string specifying the next paginated set of results to return. Type: String

DescribeReservedInstancesResponseSetItemType

The DescribeReservedInstancesResponseSetItemType data type.

Ancestors

- DescribeReservedInstancesResponseSetType

Relevant Operations

- DescribeReservedInstances

Contents

The following table describes the elements contained in DescribeReservedInstancesResponseSetItemType.

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Name	Description
<code>reservedInstancesId</code>	The ID of the Reserved Instance. Type: String
<code>instanceType</code>	The instance type on which the Reserved Instance can be used. Type: String
<code>availabilityZone</code>	The Availability Zone in which the Reserved Instance can be used. Type: String
<code>start</code>	The date and time the Reserved Instance started. Type: DateTime
<code>duration</code>	The duration of the Reserved Instance, in seconds. Type: Long
<code>fixedPrice</code>	The purchase price of the Reserved Instance. Type: Double
<code>usagePrice</code>	The usage price of the Reserved Instance, per hour. Type: Double
<code>instanceCount</code>	The number of Reserved Instances purchased. Type: Integer
<code>productDescription</code>	The Reserved Instance description. Type: String Valid values: <code>Linux/UNIX</code> <code>Linux/UNIX (Amazon VPC)</code> <code>Windows</code> <code>Windows (Amazon VPC)</code>
<code>state</code>	The state of the Reserved Instance purchase. Type: String Valid values: <code>payment-pending</code> <code>active</code> <code>payment-failed</code> <code>retired</code>
<code>tagSet</code>	Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 508)
<code>instanceTenancy</code>	The tenancy of the reserved instance. Type: String Valid values: <code>default</code> <code>dedicated</code>
<code>currencyCode</code>	The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. Type: String Valid values: As specified in ISO 4217 (e.g., USD, JPY)
<code>offeringType</code>	The Reserved Instance offering type. Type: String
<code>recurringCharges</code>	The recurring charge tag assigned to the resource. Type: RecurringChargesSetItemType (p. 506)

DescribeReservedInstancesSetItemType

The DescribeReservedInstancesSetItemType data type.

Ancestors

- DescribeReservedInstancesListings

Relevant Operations

- DescribeReservedInstances

Contents

The following table describes the elements contained in DescribeReservedInstancesListingsResponseSetItemType.

Name	Description
reservedInstancesId	The ID of the Reserved Instance. Type: String

DescribeSnapshotsSetItemResponseType

The DescribeSnapshotsSetItemResponseType data type.

Ancestors

- DescribeSnapshotsSetResponseType

Relevant Operations

- DescribeSnapshots

Contents

The following table describes the elements contained in DescribeSnapshotsSetItemResponseType.

Name	Description
snapshotId	The ID of the snapshot. Type: String
volumeId	The ID of the volume. Type: String

Name	Description
status	The snapshot state. Type: String Valid values: <code>pending</code> <code>completed</code> <code>error</code>
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 (<code>amazon</code> , <code>self</code> , etc.) or AWS account ID that owns the AML. Type: String
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

DescribeVolumesSetItemResponseType

The DescribeVolumesSetItemResponseType data type.

Ancestors

- `ItemType-DescribeVolumesSetResponseType`

Relevant Operations

- `DescribeVolumes`

Contents

The following table describes the elements contained in DescribeVolumesSetItemResponseType.

Name	Description
volumeId	The ID of the volume. Type: String

Name	Description
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: <code>creating</code> <code>available</code> <code>in-use</code> <code>deleting</code> <code>deleted</code> <code>error</code>
createTime	The time stamp when volume creation was initiated. Type: DateTime
attachmentSet	Any volumes attached, each one wrapped in an <code>item</code> element. Type: AttachmentSetItemResponseType (p. 437)
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)
volumeType	The volume type. Type: String Valid values: <code>standard</code> <code>io1</code> Default: <code>standard</code>
iops	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is <code>io1</code> ; not used with <code>standard</code> volumes. Default: None

DhcpConfigurationItemType

The DhcpConfigurationItemType data type.

Ancestors

- DhcpConfigurationItemSetType

Relevant Operations

- CreateDhcpOptions

- CreateDhcpOptions
- DescribeDhcpOptions

Contents

The following table describes the elements contained in DhcpConfigurationItemType.

Name	Description
key	The name of a DHCP option. Type: String
valueSet	Any values for a DHCP option, each one wrapped in an <code>item</code> element. Type: DhcpValueType (p. 462)

DhcpOptionsType

The DhcpOptionsType data type.

Ancestors

- CreateDhcpOptionsResponse
- DhcpOptionsSetType

Relevant Operations

- CreateDhcpOptions
- DescribeDhcpOptions

Contents

The following table describes the elements contained in DhcpOptionsType.

Name	Description
dhcpOptionsId	The ID of the set of DHCP options. Type: String
dhcpConfigurationSet	The options in the set. Each option's key and set of values are wrapped in an <code>item</code> element. Type: DhcpConfigurationItemType (p. 460)
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

DhcpValueType

The DhcpValueType data type.

Ancestors

- DhcpValueSetType

Relevant Operations

- CreateDhcpOptions
- CreateDhcpOptions
- DescribeDhcpOptions

Contents

The following table describes the elements contained in DhcpValueType.

Name	Description
value	A value for the DHCP option. Type: String

DisableVgwRoutePropagationResponseType

The DisableVgwRoutePropagationResponseType data type.

Relevant Operations

- DisableVgwRoutePropagation

Contents

The following table describes the elements contained in DisableVgwRoutePropagationResponseType.

Name	Description
requestId	The ID of the requests. Type: String
return	Indicates whether the request was successful or not. Type: Boolean

DiskImageDescriptionType

The DiskImageDescriptionType data type.

Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 471)
- [ImportVolumeTaskDetailsType](#) (p. 472)

Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements contained in DiskImageDescriptionType.

Name	Description
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 <i>Amazon Simple Storage Service Developer Guide</i> . Type: String
checksum	The checksum computed for the disk image. Type: String

DiskImageVolumeDescriptionType

The DiskImageVolumeDescriptionType data type.

Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 471)
- [ImportVolumeTaskDetailsType](#) (p. 472)

Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements contained in DiskImageVolumeDescriptionType.

Name	Description
size	The size of the volume. Type: Integer
id	The volume identifier. Type: String

EbsBlockDeviceType

The EbsBlockDeviceType data type.

Ancestors

- [BlockDeviceMappingItemType](#) (p. 440)

Relevant Operations

- DescribeImageAttribute
- DescribeImages
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RegisterImage
- RunInstances

Contents

The following table describes the elements contained in EbsBlockDeviceType.

Name	Description
snapshotId	The ID of the snapshot. Type: String

Name	Description
<code>volumeSize</code>	The size of the volume, in GiB. If you're specifying a block device mapping, this is required if you're not creating a volume from a snapshot. Type: Integer
<code>deleteOnTermination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean
<code>volumeType</code>	The volume type. Type: String Valid values: <code>standard</code> <code>io1</code> Default: <code>standard</code>
<code>iops</code>	The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 1 to 1000. Condition: Required when the volume type is <code>io1</code> ; not used with <code>standard</code> volumes. Default: None

EbsInstanceBlockDeviceMappingResponseType

The `EbsInstanceBlockDeviceMappingResponseType` data type.

Ancestors

- [InstanceBlockDeviceMappingResponseItemType](#) (p. 474)

Relevant Operations

- `DescribeInstanceAttribute`
- `DescribeInstances`
- `RunInstances`

Contents

The following table describes the elements contained in `EbsInstanceBlockDeviceMappingResponseType`.

Name	Description
<code>volumeId</code>	The ID of the Amazon EBS volume. Type: String

Name	Description
status	The attachment state. Type: String Valid values: attaching attached detaching detached
attachTime	The time stamp when the attachment initiated. Type: DateTime
deleteOnTermination	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean

EnableVgwRoutePropagationResponseType

The EnableVgwRoutePropagationResponseType data type.

Relevant Operations

- EnableVgwRoutePropagation

Contents

The following table describes the elements contained in EnableVgwRoutePropagationResponseType.

Name	Description
requestId	The ID of the requests. Type: String
return	Indicates whether the request was successful or not. Type: Boolean

ExportTaskResponseType

The ExportTaskResponseType data type.

Ancestors

- CreateInstanceExportTaskResponseType
- DescribeExportTasksResponseType
- ExportTaskSetResponseType

Relevant Operations

- CreateInstanceExportTask

- DescribeExportTasks

Contents

The following table describes the elements contained in DescribeExportTasksResponseType.

Name	Description
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	Information about the instance being exported. Type: InstanceExportTaskResponseType (p. 476)
exportToS3	Information about the destination Amazon S3 bucket. Type: ExportToS3TaskResponseType (p. 467)

ExportToS3TaskResponseType

The ExportToS3TaskResponseType data type.

Ancestors

- CreateInstanceExportTaskResponseType
- DescribeExportTasksResponseType
- ExportTaskSetResponseType
- ExportTaskResponseType

Relevant Operations

- CreateInstanceExportTask
- DescribeExportTasks

Contents

The following table describes the elements contained in ExportToS3TaskResponseType.

Name	Description
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

GroupItem

The GroupItem data type.

Ancestors

- GroupSetType

Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances
- CreateNetworkInterface

Contents

The following table describes the elements contained in GroupItem.

Name	Description
groupId	The ID of the security group. In API versions before 2011-01-01, this field returned the name of the security group. Type: String

Name	Description
groupName	The name of the security group. Type: String

IamInstanceProfileRequestType

The IamInstanceProfileRequestType data type.

Ancestors

- RunInstancesType
- LaunchSpecificationRequestType
- LaunchSpecificationResponseType

Relevant Operations

- RunInstances
- RequestSpotInstances

Contents

The following table describes the elements contained in IamInstanceProfileRequestType.

Name	Description
arn	The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instance. Type: String
name	The name of the IAM Instance Profile (IIP) to associate with the instance. Type: String

IamInstanceProfileResponseType

The IamInstanceProfileResponseType data type.

Ancestors

- RunningInstancesItemType

Relevant Operations

- RunInstances
- RequestSpotInstances

Contents

The following table describes the elements contained in `IamInstanceProfileResponseType`.

Name	Description
<code>arn</code>	The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instance. Type: String
<code>id</code>	The ID of the IAM Instance Profile ID (IIP) associated with the instance. Type: String

IcmpTypeCodeType

The `IcmpTypeCodeType` data type.

Ancestors

- NetworkACLEntryType

Relevant Operations

- CreateNetworkAcl
- DescribeNetworkAcls

Contents

The following table describes the elements contained in `IcmpTypeCodeType`.

Name	Description
<code>code</code>	The ICMP code. A value of -1 means all codes for the specified ICMP type. Type: Integer
<code>type</code>	The ICMP type. A value of -1 means all types. Type: Integer

ImportInstanceTaskDetailsType

The ImportInstanceTaskDetailsType data type.

Ancestors

- [ConversionTaskType](#) (p. 444)

Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements contained in ImportInstanceTaskDetailsType.

Name	Description
volumes	Any instance volumes for import, each one wrapped in an <code>item</code> element. Type: ImportInstanceVolumeDetailItemType (p. 471)
instanceId	The ID of the resulting instance in Amazon EC2. Type: String
platform	The instance operating system. Type: String Valid Value: windows
description	An optional description of the instance. Type: String

ImportInstanceVolumeDetailItemType

The ImportInstanceVolumeDetailItemType data type.

Ancestors

- ImportInstanceVolumeDetailSetType

Relevant Operations

- DescribeConversionTasks
- ImportInstance

- [ImportVolume](#)

Contents

The following table describes the elements contained in `ImportInstanceVolumeDetailItemType`.

Name	Description
<code>bytesConverted</code>	The number of bytes converted so far. Type: Long
<code>availabilityZone</code>	The Availability Zone where the resulting instance will reside. Type: String
<code>image</code>	The information about the image. Type: DiskImageDescriptionType (p. 463)
<code>description</code>	The description you provided when starting the import instance task. Type: String
<code>volume</code>	The information about the volume. Type: DiskImageVolumeDescriptionType (p. 463)
<code>status</code>	The status of the import of this particular disk image. Type: String
<code>statusMessage</code>	The status information or errors related to the disk image. Type: String

ImportVolumeTaskDetailsType

The `ImportVolumeTaskDetailsType` data type.

Ancestors

- [ConversionTaskType](#) (p. 444)

Relevant Operations

- `DescribeConversionTasks`
- `ImportInstance`
- `ImportVolume`

Contents

The following table describes the elements contained in `ImportVolumeTaskDetailsType`.

Name	Description
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	Information about the image. Type: DiskImageDescriptionType (p. 463)
volume	Information about the volume. Type: DiskImageVolumeDescriptionType (p. 463)

InstanceBlockDeviceMappingItemType

The InstanceBlockDeviceMappingItemType data type.

Ancestors

- InstanceBlockDeviceMappingType

Relevant Operations

- ModifyInstanceAttribute

Contents

The following table describes the elements contained in InstanceBlockDeviceMappingItemType.

Name	Description
deviceName	The device name exposed to the instance (e.g., /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. 475)
noDevice	Include this empty element to suppress the specified device included in the block device mapping of the AMI.

InstanceBlockDeviceMappingResponseItemType

The InstanceBlockDeviceMappingResponseItemType data type.

Ancestors

- InstanceBlockDeviceMappingResponseType

Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RunInstances

Contents

The following table describes the elements contained in InstanceBlockDeviceMappingResponseItemType.

Name	Description
deviceName	The device name exposed to the instance (e.g., /dev/sdh, or xvdh). Type: String
ebs	Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: EbsInstanceBlockDeviceMappingResponseType (p. 465)

InstanceCountsSetItemType

The InstanceCountsSetItemType data type.

Ancestors

- DescribeReservedInstancesListingSetType
- InstanceCountsSetType

Relevant Operations

- DescribeReservedInstancesListingsResponseType

Contents

The following table describes the elements contained in InstanceCountsSetItemType.

Name	Description
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

The InstanceCountsSetType data type.

Ancestors

- DescribeReservedInstancesListingSetType

Relevant Operations

- DescribeReservedInstancesListingsResponseType

Contents

The following table describes the elements contained in InstanceCountsSetType.

Name	Description
item	The Reserved Instance listing item. Type: InstanceCountsSetItemType (p. 474)

InstanceEbsBlockDeviceType

The InstanceEbsBlockDeviceType data type.

Ancestors

- [InstanceBlockDeviceMappingItemType](#) (p. 473)

Relevant Operations

- [ModifyInstanceAttribute](#)

Contents

The following table describes the elements contained in InstanceEbsBlockDeviceType.

Name	Description
deleteOnTermination	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean
volumeId	The ID of the Amazon EBS volume. Type: String

InstanceExportTaskResponseType

The InstanceExportTaskResponseType data type.

Ancestors

- CreateInstanceExportTaskResponseType
- DescribeExportTasksResponseType
- ExportTaskSetResponseType
- ExportTaskResponseType

Relevant Operations

- CreateInstanceExportTask
- DescribeExportTasks

Contents

The following table describes the elements contained in InstanceExportTaskResponseType.

Name	Description
instanceId	The ID of the resource being exported. Type: String
targetEnvironment	The target virtualization environment. Type: String Valid values: vmware citrix

InstanceStatusEventsSetType

The InstanceStatusEventsSetType data type.

Relevant Operations

- [DescribeInstanceStatus](#) (p. 214)

Contents

The following table describes the elements contained in InstanceStatusEventsSetType.

Name	Description
item	Information about scheduled events for the instance. Type: InstanceStatusEventType (p. 477)

InstanceStatusEventType

The InstanceStatusEventType data type.

Ancestors

- [DescribeInstanceStatus](#)
InstanceStatusEventsSetType

Relevant Operations

- [DescribeInstanceStatus](#) (p. 214)

Contents

The following table describes the elements contained in InstanceStatusEventType.

Name	Description
code	The associated code of the event. Type: String Valid parameters: instance-reboot system-reboot instance-retirement
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

The InstanceStatusItemType data type.

Ancestors

- DescribeInstanceStatus
- InstanceStatusSetType

Relevant Operations

- [DescribeInstanceStatus](#) (p. 214)

Contents

The following table describes the elements contained in InstanceStatusItemType.

Name	Description
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. 476)
instanceState	The intended state of the instance. Calls to DescribeInstanceStatus require that an instance be in the running state. Type: InstanceStateType (p. 484)
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. 480)
instanceStatus	Reports impaired functionality that arises from problems internal to the instance. The DescribeInstanceStatus (p. 214) response elements report such problems as impaired reachability. Type: InstanceStatusType (p. 480)

InstanceStatusSetType

The InstanceStatusSetType data type.

Relevant Operations

- [DescribeInstanceStatus](#) (p. 214)

Contents

The following table describes the elements contained in InstanceStatusSetType.

Name	Description
item	Information about the status of the instance. Type: InstanceStatusItemType

InstanceStatusDetailsSetType

The InstanceStateType data type.

Ancestors

- [InstanceStatusItemType](#) (p. 478)
- [InstanceStatusType](#) (p. 480)

Relevant Operations

- [DescribeInstanceStatus](#) (p. 214)

Contents

The following table describes the elements contained in InstanceStatusDetailsSetType.

Name	Description
name	The type of instance status detail. Type: String Valid values: <code>reachability</code>
status	The status. Type: String Valid values: <code>passed</code> <code>failed</code> <code>insufficient-data</code>
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

InstanceStatusType

The InstanceStateType data type.

Ancestors

- [InstanceStatusItemType](#) (p. 478)

Relevant Operations

- [DescribeInstanceStatus](#) (p. 214)

Contents

The following table describes the elements contained in InstanceStatusType.

Name	Description
status	The status. Type: String Valid values: ok impaired insufficient-data not-applicable
details	Information about system instance health or application instance health. Type: InstanceStatusDetailsSetType (p. 479)

InstanceMonitoringStateType

The InstanceMonitoringStateType data type.

Ancestors

- [MonitorInstancesResponseSetItemType](#) (p. 491)
- [RunningInstancesItemType](#) (p. 512)

Relevant Operations

- [MonitorInstances](#)
- [UnmonitorInstances](#)
- [DescribeInstances](#)
- [RunInstances](#)

Contents

The following table describes the elements contained in InstanceMonitoringStateType.

Name	Description
state	The state of monitoring for the instance. The <code>disabled</code> state means that Detailed Monitoring is disabled for the instance. The <code>enabled</code> state means that Detailed Monitoring is enabled for the instance. The <code>pending</code> state means that the instance is launching or that you recently enabled Detailed Monitoring for the instance. Type: String Valid values: <code>disabled</code> <code>enabled</code> <code>pending</code>

InstanceNetworkInterfaceSetItemRequestType

The InstanceNetworkInterfaceSetItemRequestType data type.

Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetItemRequestType.

Name	Description
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 group IDs for use by the network interface. Type: SecurityGroupIdSetItemType (p. 515)
deleteOnTermination	If set to <code>true</code> , 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. 503)

Name	Description
<code>secondaryPrivateIpAddressCount</code>	The number of secondary private IP addresses. You cannot specify this option with <code>privateIpAddressSet</code> . Type: Integer

InstanceNetworkInterfaceSetType

The InstanceNetworkInterfaceSetType data type.

Ancestors

- [InstanceNetworkInterfaceSetType \(p. 482\)](#)

Relevant Operations

- `DescribeInstances`
- `RunInstances`

Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetType.

Name	Description
<code>networkInterfaceId</code>	The ID of the network interface. Type: String
<code>subnetId</code>	The ID of the subnet. Type: String
<code>vpcId</code>	The ID of the VPC. Type: String
<code>description</code>	The description. Type: String
<code>ownerId</code>	The ID of the customer who created the network interface. Type: String
<code>status</code>	The network interface's status (<code>available</code> or <code>in-use</code>). Type: String
<code>privateIpAddress</code>	The IP address of the network interface within the subnet. Type: String
<code>privateDnsName</code>	The private DNS name. Type: String

Name	Description
sourceDestCheck	Whether to validate network traffic to or from this network interface. Type: Boolean
groupSet.item	A security group. Type: GroupItemType (p. 468)
attachment	The network interface attachment. Type: NetworkInterfaceAttachmentType (p. 496)
association	The association information for an Elastic IP associated with the network interface. Type: NetworkInterfaceAssociationType (p. 494)
privateIpAddressesSet	The private IP addresses associated with the network interface. Type: InstancePrivateIpAddressesSetType

InstanceStateChangeType

The InstanceStateChangeType data type.

Ancestors

- InstanceStateChangeSetType

Relevant Operations

- StartInstances
- StopInstances
- TerminateInstances

Contents

The following table describes the elements contained in InstanceStateChangeType.

Name	Description
instanceId	The instance ID. Type: String
currentState	The current state of the instance. Type: InstanceStateType (p. 484)
previousState	The previous state of the instance. Type: InstanceStateType (p. 484)

InstanceStateType

The InstanceStateType data type.

Ancestors

- [InstanceStateChangeType](#) (p. 483)
- [InstanceStateChangeType](#) (p. 483)
- [RunningInstancesItemType](#) (p. 512)

Relevant Operations

- [StartInstances](#)
- [StopInstances](#)
- [TerminateInstances](#)
- [DescribeInstances](#)
- [DescribeInstanceStatus](#)
- [RunInstances](#)

Contents

The following table describes the elements contained in InstanceStateType.

Name	Description
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

InternetGatewayAttachmentType

The InternetGatewayAttachmentType data type.

Ancestors

- [InternetGatewayAttachmentSetType](#)
- [AttachInternetGatewayResponse](#)

Relevant Operations

- `CreateInternetGateway`
- `DescribeInternetGateways`
- `AttachInternetGateway`

Contents

The following table describes the elements contained in `InternetGatewayAttachmentType`.

Name	Description
<code>vpcId</code>	The ID of the VPC the Internet gateway is attached to. Type: String
<code>state</code>	The current state of the attachment. Type: String Valid values: <code>attaching</code> <code>attached</code> <code>detaching</code> <code>detached</code>

InternetGatewayType

The `VpnGatewayType` data type.

Ancestors

- `CreateInternetGatewayResponse`
- `InternetGatewaySetType`

Relevant Operations

- `CreateInternetGateway`
- `DescribeInternetGateways`

Contents

The following table describes the elements contained in `InternetGatewayType`.

Name	Description
<code>internetGatewayId</code>	The ID of the Internet gateway. Type: String
<code>attachmentSet</code>	Any VPCs attached to the Internet gateway, each one wrapped in an <code>item</code> element. Type: InternetGatewayAttachmentType (p. 484)

Name	Description
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

IpPermissionType

The IpPermissionType data type.

Ancestors

- IpPermissionSetType

Relevant Operations

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

Contents

The following table describes the elements contained in IpPermissionType.

Name	Description
ipProtocol	The protocol. When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., <code>tcp</code> , <code>udp</code> , or <code>icmp</code>). 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 <code>item</code> element. Type: UserIdGroupPairType (p. 523)
ipRanges	A list of IP ranges. Each range is wrapped in an <code>item</code> element. Type: IpRangeItemType (p. 487)

IpRangeltemType

The IpRangeltemType data type.

Ancestors

- IpRangeSetType

Relevant Operations

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

Contents

The following table describes the elements contained in IpRangeltemType.

Name	Description
cidrIp	The CIDR range. Cannot be used when specifying a source security group. Type: String

LaunchPermissionItemType

The LaunchPermissionItemType data type.

Ancestors

- LaunchPermissionListType

Relevant Operations

- DescribeImageAttribute
- ModifyImageAttribute

Contents

The following table describes the elements contained in LaunchPermissionItemType.

Name	Description
group	The name of the group. Type: String Valid Value: all
userId	The AWS account ID. Type: String

LaunchSpecificationRequestType

The LaunchSpecificationRequestType data type.

Ancestors

- RequestSpotInstancesType

Relevant Operations

- RequestSpotInstances

Contents

The following table describes the elements contained in LaunchSpecificationRequestType.

Name	Description
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 <code>item</code> element. Type: GroupItemType (p. 468)
userData	Base64-encoded MIME user data made available to the instance(s) in the reservation. Type: UserData (p. 523)
addressingType	Deprecated. Type: String
instanceType	The instance type. Type: String
placement	The placement information for the instance. Type: PlacementRequestType (p. 499)

Name	Description
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 <code>item</code> element. Type: BlockDeviceMappingItemType (p. 440)
monitoring	The monitoring information for the instance. Type: MonitoringInstanceType (p. 491)
subnetId	The Amazon VPC subnet ID within which to launch the instance(s) for Amazon Virtual Private Cloud. Type: String
networkInterfaceSet	The network interfaces associated with the instance. Type: InstanceNetworkInterfaceSetItemRequestType (p. 481)
iamInstanceProfile	The IAM Instance Profile (IIP) associated with the instance. Type: IamInstanceProfileRequestType (p. 469)
ebsOptimized	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: <code>false</code>

LaunchSpecificationResponseType

The LaunchSpecificationResponseType data type.

Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 517)

Relevant Operations

- [DescribeSpotInstanceRequests](#)

Contents

The following table describes the elements contained in `LaunchSpecificationResponseType`.

Name	Description
<code>imageId</code>	The AMI ID. Type: String
<code>keyName</code>	The name of the key pair. Type: String
<code>groupSet</code>	A list of security groups. Each group is wrapped in an <code>item</code> element. Type: GroupItemType (p. 468)
<code>addressingType</code>	Deprecated. Type: String
<code>instanceType</code>	The instance type. Type: String
<code>placement</code>	The placement information for the instance. Type: PlacementRequestType (p. 499)
<code>kernelId</code>	The ID of the kernel to select. Type: String
<code>ramdiskId</code>	The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID. Type: String
<code>blockDeviceMapping</code>	Any block device mapping entries for the instance. Each entry is wrapped in an <code>item</code> element. Type: BlockDeviceMappingItemType (p. 440)
<code>monitoring</code>	The monitoring information for the instance. Type: MonitoringInstanceType (p. 491)
<code>subnetId</code>	The Amazon VPC subnet ID within which to launch the instance(s) for Amazon Virtual Private Cloud. Type: String
<code>networkInterfaceSet</code>	The network interfaces for the instance. Type: InstanceNetworkInterfaceSetItemType (p. 481)
<code>iamInstanceProfile</code>	The IAM Instance Profile (IIP) associated with the instance. Type: IamInstanceProfileRequestType (p. 469)

Name	Description
ebsOptimized	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

The MonitoringInstanceType data type.

Ancestors

- [LaunchSpecificationRequestType](#) (p. 488)
- [LaunchSpecificationResponseType](#) (p. 489)
- [RunInstancesType](#)

Relevant Operations

- [RequestSpotInstances](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)
- [RunInstances](#)

Contents

The following table describes the elements contained in MonitoringInstanceType.

Name	Description
enabled	Whether monitoring is enabled for the instance. Type: Boolean

MonitorInstancesResponseSetItemType

The MonitorInstancesResponseSetItemType data type.

Ancestors

- [MonitorInstancesResponseSetType](#)

Relevant Operations

- MonitorInstances
- UnmonitorInstances

Contents

The following table describes the elements contained in MonitorInstancesResponseSetItem type.

Name	Description
instanceId	The instance ID. Type: String
monitoring	The monitoring information. Type: InstanceMonitoringStateType (p. 480)

NetworkAclEntryType

The NetworkAclEntryType data type.

Ancestors

- NetworkAclEntrySetType

Relevant Operations

- CreateNetworkAcl
- DescribeNetworkAcls

Contents

The following table describes the elements contained in NetworkAclEntryType.

Name	Description
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	Whether to allow or deny the traffic that matches the rule. Type: String

Name	Description
<code>egress</code>	Indicates an egress rule (rule is applied to traffic leaving the subnet). Value of <code>true</code> indicates egress. Type: Boolean
<code>cidrBlock</code>	The network range to allow or deny, in CIDR notation. Type: String
<code>icmpTypeCode</code>	ICMP protocol: The ICMP type and code. Type: IcmpTypeCodeType (p. 470)
<code>portRange</code>	TCP or UDP protocols: The range of ports the rule applies to. Type: PortRangeType (p. 500)

NetworkACLType

The NetworkACLType data type.

Ancestors

- [CreateNetworkAclResponse](#)
- [NetworkAclSetType](#)

Relevant Operations

- [CreateNetworkAcl](#)
- [DescribeNetworkAcls](#)

Contents

The following table describes the elements contained in NetworkACLType.

Name	Description
<code>networkAclId</code>	The ID of the network ACL. Type: String
<code>vpcId</code>	The ID of the VPC the network ACL is in. Type: String
<code>default</code>	Whether this is the default network ACL in the VPC. Type: Boolean Valid values: <code>true</code> <code>false</code>
<code>entrySet</code>	A list of entries (rules) in the network ACL. Each entry is wrapped in an <code>item</code> element. Type: NetworkAclEntryType (p. 492)

Name	Description
associationSet	A list of associations between the network ACL and one or more subnets. Each association is wrapped in an <code>item</code> element. Type: NetworkAclAssociationType (p. 494)
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

NetworkAclAssociationType

The NetworkAclAssociationType data type.

Ancestors

- NetworkAclAssociationSetType

Relevant Operations

- CreateNetworkAcl
- DescribeNetworkAcls

Contents

The following table describes the elements contained in NetworkAclAssociationType.

Name	Description
networkAclAssociationId	An identifier representing the association between a network ACL and a subnet. Type: String
networkAclId	The ID of the network ACL in the association. Type: String
subnetId	The ID of the subnet in the association. Type: String

NetworkInterfaceAssociationType

The NetworkInterfaceAssociationType data type.

Ancestors

- InstanceNetworkInterfaceSetItemType

Relevant Operations

- RunInstances
- DescribeInstances

Contents

The following table describes the elements contained in NetworkInterfaceAssociationType.

Name	Description
attachmentID	The ID of the network interface attachment. Type: String
instanceID	The ID of the instance attached to the network interface. Type: String
publicIp	The address of the Elastic IP address bound to the network interface. Type: String
ipOwnerId	The ID of the Elastic IP address owner. Type: String

NetworkInterfaceSet

The NetworkInterfaceSet data type.

Ancestors

- InstanceNetworkInterfaceSetType

Relevant Operations

- DescribeInstances
- DescribeNetworkInterfaces
- RequestSpotInstances

Contents

The following table describes the elements contained in NetworkInterfaceSet.

Name	Description
networkInterfaceId	The ID of the network interface. Type: String

Name	Description
subnetId	The ID of the subnet. Type: String
vpcId	The ID of the VPC. Type: String
description	A description. Type: String
ownerId	The ID of the customer who created the interface. Type: String
status	The status (<code>available</code> or <code>in-use</code>). Type: String
privateIpAddress	The IP address of the interface within the subnet. Type: String
privateDnsName	The private DNS name. Type: String
sourceDestCheck	Whether traffic to or from the instance is validated. Type: Boolean
groupSet	A security group. Type: GroupItemType (p. 468)
attachment	The network interface attachment. Type: NetworkInterfaceAttachmentType (p. 496)
association	The association information for an Elastic IP associated with the network interface. Type: NetworkInterfaceAssociationType (p. 494)
privateIpAddressesSet	The list of IP addresses assigned to the network interface. Type: NetworkInterfacePrivateIpAddressesSetItemType (p. 497)

NetworkInterfaceAttachmentType

The `NetworkInterfaceType` data type.

Relevant Operations

- `DescribeNetworkInterfaces`

Contents

The following table describes the elements contained in `NetworkInterfaceAttachmentType`.

Name	Description
attachmentID	The ID of the network interface attachment. Type: String
instanceID	The ID of the instance. Type: String

NetworkInterfacePrivateIpAddressesSetItemType

The NetworkInterfacePrivateIpAddressesType data type.

Relevant Operations

- DescribeNetworkInterfaces

Contents

The following table describes the elements contained in NetworkInterfacePrivateIpAddressesSetItemType.

Name	Description
privateIpAddress	The private IP address of the network interface Type: String
primary	Whether this IP address is the primary private IP address of the network interface. Type: Boolean
association	The association information for an Elastic IP associated with the network interface. Type: NetworkInterfaceAssociationType (p. 494)

NetworkInterfaceType

The NetworkInterfaceType data type.

Relevant Operations

- DescribeNetworkInterfaces

Contents

The following table describes the elements contained in NetworkInterfaceType.

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Name	Description
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	Type: String
status	The status (<code>available</code> or <code>in-use</code>). Type: String
macAddress	Type: String
privateIpAddress	The IP address of the interface within the subnet. Type: String
privateDnsName	The private DNS name. Type: String
sourceDestCheck	Whether traffic to or from the instance is validated. Type: Boolean
groupSet	Type: GroupSetType
attachment	The network interface attachment. Type: NetworkInterfaceAttachmentType (p. 496)
association	The association information for an Elastic IP associated with the network interface. Type: NetworkInterfaceAssociationType (p. 494)
tagSet	Type: ResourceTagSetType
privateIpAddressesSet	The private IP addresses associated with the network interface. Items are returned in a set. Type: NetworkInterfacePrivateIpAddressesSetItemType

PlacementGroupInfoType

Relevant Operations

- DescribePlacementGroups

Contents

The following table describes the elements contained in PlacementGroupInfoType.

Name	Description
groupName	The name of the placement group. Type: String
strategy	The placement strategy. Type: String Valid values: <code>cluster</code>
state	The status of the placement group. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>

PlacementRequestType

The PlacementRequestType data type.

Ancestors

- [LaunchSpecificationRequestType](#) (p. 488)
- [LaunchSpecificationResponseType](#) (p. 489)
- RunInstancesType

Relevant Operations

- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances

Contents

The following table describes the elements contained in PlacementRequestType.

Name	Description
availabilityZone	The Availability Zone for launching the instance. Type: String
groupName	The name of a placement group for the instance. Type: String

PlacementResponseType

The PlacementResponseType data type.

Ancestors

- [RunningInstancesItemType](#) (p. 512)

Relevant Operations

- [DescribeInstances](#)
- [RunInstances](#)

Contents

The following table describes the elements contained in PlacementResponseType.

Name	Description
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

PortRangeType

The PortRangeType data type.

Ancestors

- [NetworkAclEntryType](#)

Relevant Operations

- DescribeNetworkAcls

Contents

The following table describes the elements contained in PortRangeType.

Name	Description
from	The first port in the range. Type: Integer
to	The last port in the range. Type: Integer

PriceScheduleRequestSetItemType

The PriceScheduleRequestSetItemType data type.

Ancestors

- PriceScheduleRequestSetType

Relevant Operations

- CreateReservedInstancesListing

Contents

The following table describes the elements contained in PriceScheduleRequestSetItemType.

Name	Description
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. Type: String Valid Value: USD

PriceScheduleSetItemType

The PriceScheduleSetItemType data type.

Ancestors

- DescribeReservedInstancesListingsResponseSetItemType
- PriceScheduleSetType

Relevant Operations

- CreateReservedInstancesListing

Contents

The following table describes the elements contained in PriceScheduleSetItemType.

Name	Description
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. 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

The PriceScheduleSetType data type.

Ancestors

- DescribeReservedInstancesListingSetType

Relevant Operations

- DescribeReservedInstancesListingsResponseType

Contents

The following table describes the elements contained in PriceScheduleSetType.

Name	Description
item	The Reserved Instance listing price schedule item. Type: PriceScheduleSetItem (p. 502).

PricingDetailsSetItemType

The PricingDetailsSetItemType data type.

Ancestors

- DescribeReservedInstancesOfferings

Relevant Operations

- DescribeReservedInstancesOfferingsResponseType

Contents

The following table describes the elements contained in PricingDetailsSetItemType.

Name	Description
price	Price per instance. Type: Integer
count	Number of instances available for the price. Type: Integer

PrivateAddressesSetItemRequestType

The PrivateAddressesSetItemRequest data type.

Relevant Operations

- [AssignPrivateIpAddresses](#)
- [UnassignPrivateIpAddresses](#)

Contents

The following table describes the elements contained in `PrivateIpAddressesSetItemRequest`.

Name	Description
<code>privateIpAddressesSet</code>	The list of private IP addresses. Type: AssignPrivateIpAddressesSetItemRequestType (p. 436)
<code>primary</code>	Whether the private IP address is the primary private IP address. Type: Boolean

ProductCodeItemType

The `ProductCodeItemType` data type.

Ancestors

- [ProductCodeListType](#)

Relevant Operations

- [DescribeImageAttribute](#)
- [ModifyImageAttribute](#)

Contents

The following table describes the elements contained in `ProductCodeItemType`.

Name	Description
<code>productCode</code>	The product code. Type: String

ProductCodesSetItemType

The `ProductCodesSetItemType` data type.

Ancestors

- ProductCodesSetType

Relevant Operations

- DescribeImages
- DescribeImageAttribute
- DescribeInstances
- DescribeInstanceAttribute
- DescribeSnapshotAttribute
- DescribeVolumeAttribute
- RunInstances

Contents

The following table describes the elements contained in ProductCodesSetItemType.

Name	Description
productCode	The product code. Type: String
type	The type of product code. Type: String Valid values: devpay marketplace

ProductDescriptionSetItemType

The ProductDescriptionSetItemType data type.

Ancestors

- ProductDescriptionSetType

Relevant Operations

- DescribeSpotPriceHistory

Contents

The following table describes the elements contained in ProductDescriptionSetItemType.

Name	Description
productDescription	The description of the AMI. Type: String Valid values: Linux/UNIX SUSE Linux Windows

PropagatingVgwType

The PropagatingVgwType data type.

Contents

The following table describes the elements contained in PropagatingVgwType.

Name	Description
gatewayID	The ID of the virtual private gateway (VGW). Type: String

RecurringChargesSetItemType

The RecurringChargesSetItemType data type.

Relevant Operations

- DescribeReservedInstances
- DescribeReservedInstanceOfferings

Contents

The following table describes the elements contained in RecurringChargesSetItemType.

Name	Description
frequency	The frequency of the recurring charge. Type: String Valid value: Hourly
amount	The amount of the recurring charge. Type: Double

RegionItemType

The RegionItemType data type.

Ancestors

- RegionSetType

Relevant Operations

- DescribeRegions

Contents

The following table describes the elements contained in RegionItemType.

Name	Description
regionName	The name of the Region. Type: String
regionEndpoint	The Region service endpoint. Type: String

ReservationInfoType

The ReservationInfoType data type.

Ancestors

- ReservationSetType

Relevant Operations

- DescribeInstances

Contents

The following table describes the elements contained in ReservationInfoType.

Name	Description
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 <code>item</code> element. Type: GroupItemType (p. 468)

Name	Description
<code>instancesSet</code>	A list of instances. Each instance is wrapped in an <code>item</code> element. Type: RunningInstancesItemType (p. 512)
<code>requesterId</code>	The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling). Type: String

ReservedInstanceLimitPriceType

The `ReservedInstanceLimitPriceType` data type.

Ancestors

- `PurchaseReservedInstancesOfferings`

Relevant Operations

- `DescribeReservedInstancesOfferingsResponse`

Contents

The following table describes the elements contained in `LimitPrice` data type.

Name	Description
<code>amount</code>	Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (<code>instanceCount * price</code>). Type: Double
<code>currencyCode</code>	Currency in which the <code>limitPrice</code> amount is specified. At this time, the only supported currency is USD. Type: Double

ResourceTagSetItemType

The `ResourceTagSetItemType` data type.

Relevant Operations

- `DescribeImages`
- `DescribeInstances`
- `DescribeVolumes`
- `DescribeSnapshots`

- DescribeSpotInstanceRequests

Contents

The following table describes the elements contained in ResourceTagSetItem.

Name	Description
key	The tag key. Type: String
value	The tag value. Type: String

RouteTableAssociationType

The RouteTableAssociationType data type.

Ancestors

- RouteTableAssociationSetType

Relevant Operations

- CreateTable
- DescribeRouteTables

Contents

The following table describes the elements contained in NetworkAclAssociationType.

Name	Description
routeTableAssociationId	An identifier representing the association between a route table and a subnet. Type: String
routeTableId	The ID of the route table in the association. Type: String
subnetId	The ID of the subnet in the association. Type: String
main	Whether this is the main route table. Type: Boolean

RouteTableType

The RouteTableType data type.

Ancestors

- CreateRouteTableResponse
- RouteTableSetType

Relevant Operations

- CreateRouteTable
- DescribeRouteTables

Contents

The following table describes the elements contained in RouteTableType.

Name	Description
routeTableId	The route table's ID. Type: String
vpcId	The ID of the VPC the route table is in. Type: String
routeSet	A list of routes in the route table. Each route is wrapped in an <code>item</code> element. Type: RouteType (p. 510)
associationSet	A list of associations between the route table and one or more subnets. Each association is wrapped in an <code>item</code> element. Type: RouteTableAssociationType (p. 509)
propagatingVgwSet	The IDs of any virtual private gateways (VGW) propagating routes, each route is wrapped in an <code>item</code> element. Type: PropagatingVgwType (p. 506)
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

RouteType

The RouteType data type.

Ancestors

- RouteSetType

Relevant Operations

- CreateRouteTable
- DescribeRouteTables

Contents

The following table describes the elements contained in RouteType.

Name	Description
<i>destinationCidrBlock</i>	The CIDR address block used for the destination match. For example: 0.0.0.0/0. Type: String
<i>gatewayId</i>	The ID of a gateway attached to your VPC. Type: String
<i>instanceId</i>	The ID of a NAT instance in your VPC. Type: String
<i>instanceOwnerId</i>	The owner of the instance. Type: String
<i>networkInterfaceId</i>	The network interface ID. Type: String
<i>state</i>	The state of the route. The <code>blackhole</code> state indicates that the route's target isn't available (e.g., the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, etc.). Type: String Valid values: <code>active</code> <code>blackhole</code>
<i>origin</i>	Describes how the route was created. Type: String Valid values: <code>Valid values: CreateRouteTable CreateRoute EnableVgwRoutePropagation</code> <ul style="list-style-type: none"> • <code>CreateRouteTable</code> indicates that route was automatically created when the route table was create. • <code>CreateRoute</code> indicates that the route was manually added to the route table. • <code>EnableVgwRoutePropagation</code> indicates that the route was propagated by route propagation.

RunningInstancesItemType

The RunningInstancesItemType data type.

Ancestors

- RunningInstancesSetType

Relevant Operations

- DescribeInstances
- RunInstances

Contents

The following table describes the elements contained in RunningInstancesItemType.

Name	Description
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. 484)
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 a running state. Type: String
dnsName	The public DNS name assigned to the instance. This DNS name is contactable from outside the Amazon EC2 network. This element remains empty until the instance enters a 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 within the launch group. Type: String

Name	Description
productCodes	The product codes attached to this instance. Each product code is wrapped in an <code>item</code> element. Type: ProductCodesSetItemType (p. 504)
instanceType	The instance type (for example, m1.small). Type: String
launchTime	The time the instance was launched. Type: DateTime
placement	The location where the instance launched. Type: PlacementResponseType (p. 500)
kernelId	The kernel associated with this instance. Type: String
ramdiskId	The RAM disk associated with this instance. Type: String
platform	The platform of the instance (e.g., Windows). Type: String
monitoring	The monitoring information for the instance. Type: InstanceMonitoringStateType (p. 480)
subnetId	The Amazon VPC subnet ID in which the instance is running. Type: String
vpcId	The Amazon 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 a Network Address Translation (NAT) instance in a VPC to perform NAT. This controls whether source/destination checking is enabled on the instance. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the instance to perform NAT. For more information, go to NAT Instances in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: Boolean
groupSet	A list of VPC security groups the instance is in. Each group is wrapped in an <code>item</code> element. Type: GroupItemType (p. 468)

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Name	Description
<code>stateReason</code>	The reason for the most recent state transition. See StateReasonType (p. 520) for a listing of supported state change codes. Type: StateReasonType (p. 520)
<code>architecture</code>	The architecture of the image. Type: String Valid values: <code>i386</code> <code>x86_64</code>
<code>rootDeviceType</code>	The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device. Type: String Valid values: <code>ebs</code> <code>instance-store</code>
<code>rootDeviceName</code>	The root device name (e.g., <code>/dev/sda1</code>). Type: String
<code>blockDeviceMapping</code>	Any block device mapping entries for the instance, each one wrapped in an <code>item</code> element. Type: InstanceBlockDeviceMappingResponseItemtype (p. 474)
<code>instanceLifecycle</code>	Whether this is a Spot Instance. Type: String Valid values: <code>spot</code> blank (no value)
<code>spotInstanceRequestId</code>	The ID of the Spot Instance request. Type: String
<code>virtualizationType</code>	The instance's virtualization type. Type: String Valid values: <code>paravirtual</code> <code>hvm</code>
<code>clientToken</code>	The idempotency token you provided when you launched the instance. Type: String
<code>tagSet</code>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemtype (p. 508)
<code>hypervisor</code>	The instance's hypervisor type. Type: String Valid values: <code>ovm</code> <code>xen</code>
<code>networkInterfaceSet</code>	The network interfaces for the instance. Type: InstanceNetworkInterfaceSetType (p. 482)
<code>iamInstanceProfile</code>	The IAM Instance Profile (IIP) associated with the instance. Type: IamInstanceProfileResponseType (p. 469)

Name	Description
ebsOptimized	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

SecurityGroupIdSetItemType

The SecurityGroupIdSetItemType data type.

Ancestors

- LaunchSpecificationResponseType
- LaunchSpecificationRequestType
- InstanceNetworkInterfaceSetItemRequestType

Relevant Operations

- CreateNetworkInterface
- ModifyNetworkInterfaceAttribute
- ModifyInstanceAttribute
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RunInstances

Contents

The following table describes the elements contained in SecurityGroupItemtype.

Name	Description
groupId	The ID of the security group associated with the network interface. Type: String

SecurityGroupItemtype

The SecurityGroupItemtype data type.

Ancestors

- SecurityGroupSetType

Relevant Operations

- DescribeSecurityGroups

Contents

The following table describes the elements contained in SecurityGroupItemType.

Name	Description
ownerId	The AWS account ID of the owner of the security group. Type: String
groupId	The ID of the security group. Type: String
groupName	The name of the security group. Type: String
groupDescription	A description of the security group. Type: String
vpcId	The ID of the VPC the security group is in (for VPC security groups). Type: String
ipPermissions	A list of inbound rules associated with the security group. Each permission is wrapped in an <code>item</code> element. Type: IpPermissionType (p. 486)
ipPermissionsEgress	A list of outbound rules associated with the security group (for VPC security groups). Each permission is wrapped in an <code>item</code> element. Type: IpPermissionType (p. 486)
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

SpotDatafeedSubscriptionType

The SpotDatafeedSubscriptionType data type.

Ancestors

- CreateSpotDatafeedSubscriptionResponseType

- DescribeSpotDatafeedSubscriptionResponseType

Relevant Operations

- CreateSpotDatafeedSubscription
- DescribeSpotDatafeedSubscription

Contents

The following table describes the elements contained in SpotDatafeedSubscriptionType.

Name	Description
ownerId	The AWS account ID of the account. Type: String
bucket	The Amazon S3 bucket where the Spot Instance datafeed is located. Type: String
prefix	The prefix that is prepended to datafeed files. Type: String
state	The state of the Spot Instance datafeed subscription. Type: String Valid values: <code>Active</code> <code>Inactive</code>
fault	The fault codes for the Spot Instance request, if any. Type: SpotInstanceStateFaultType (p. 519)

SpotInstanceRequestSetItemType

The SpotInstanceRequestSetItemType data type.

Ancestors

- SpotInstanceRequestSetType

Relevant Operations

- DescribeSpotInstanceRequests
- RequestSpotInstances

Contents

The following table describes the elements contained in SpotInstanceRequestSetItemType.

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Name	Description
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: <code>one-time</code> <code>persistent</code>
state	The state of the Spot Instance request. Type: String Valid values: <code>open</code> <code>closed</code> <code>cancelled</code> <code>failed</code>
fault	The fault codes for the Spot Instance request, if any. Type: SpotInstanceStateFaultType (p. 519)
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. 489)
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

Name	Description
productDescription	The product description associated with the Spot Instance. Type: String
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

SpotInstanceStateFaultType

The SpotInstanceStateFaultType data type.

Ancestors

- [SpotDatafeedSubscriptionType](#) (p. 516)
- [SpotInstanceRequestSetItemType](#) (p. 517)

Relevant Operations

- [CreateSpotDatafeedSubscription](#)
- [DescribeSpotDatafeedSubscription](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)

Contents

The following table describes the elements contained in SpotInstanceStateFaultType.

Name	Description
code	The reason code for the Spot Instance state change. Type: String
message	The message for the Spot Instance state change. Type: String

SpotPriceHistorySetItemType

The SpotPriceHistorySetItemType data type.

Ancestors

- [SpotPriceHistorySetType](#)

Relevant Operations

- [DescribeSpotPriceHistory](#)

Contents

The following table describes the elements contained in `SpotPriceHistorySetItemType`.

Name	Description
<code>instanceType</code>	The instance type. Type: String
<code>productDescription</code>	A general description of the AMI. Type: String Valid values: <code>Linux/UNIX SUSE Linux Windows</code>
<code>spotPrice</code>	The maximum price you will pay to launch one or more Spot Instances. Type: String
<code>timestamp</code>	The date and time the request was created. Type: DateTime
<code>availabilityZone</code>	The Availability Zone. Type: String

StateReasonType

The `StateReasonType` data type.

Ancestors

- [DescribeImagesResponseItemType](#) (p. 450)
- [RunningInstancesItemType](#) (p. 512)

Relevant Operations

- [DescribeImages](#)
- [DescribeInstances](#)
- [RunInstances](#)

Contents

The following table describes the elements contained in `StateReasonType`.

Name	Description
code	The reason code for the state change. See the following table for a list of codes. Type: String
message	The message for the state change. Type: String

The following table lists the currently supported state reason codes.

Code	Description
<code>Server.SpotInstanceTermination</code>	A Spot Instance was terminated due to an increase in the market price.
<code>Server.InternalError</code>	An internal error occurred during instance launch, resulting in termination.
<code>Server.InsufficientInstanceCapacity</code>	There was insufficient instance capacity to satisfy the launch request.
<code>Client.InternalError</code>	A client error caused the instance to terminate on launch.
<code>Client.InstanceInitiatedShutdown</code>	The instance initiated shutdown by a shutdown -h command issued from inside the instance.
<code>Client.UserInitiatedShutdown</code>	The instance was shutdown by a user via an API call.
<code>Client.VolumeLimitExceeded</code>	The volume limit was exceeded.
<code>Client.InvalidSnapshot.NotFound</code>	The specified snapshot was not found.

SubnetType

The SubnetType data type.

Ancestors

- CreateSubnetResponse
- SubnetSetType

Relevant Operations

- CreateSubnet
- DescribeSubnets

Contents

The following table describes the elements contained in SubnetType.

Name	Description
subnetId	The ID of the subnet. Type: String
state	The current state of the subnet. Type: String Valid values: <code>pending</code> <code>available</code>
vpcId	The ID of the VPC the subnet is in. Type: String
cidrBlock	The CIDR block assigned to the subnet. Type: String
availableIpAddressCount	The number of unused IP addresses in the subnet (the IP addresses for any stopped instances are considered unavailable). Type: Integer
availabilityZone	The Availability Zone of the subnet. Type: String
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

TagSetItemType

The TagSetItemType data type.

Relevant Operations

- DescribeTags

Contents

The following table describes the elements contained in TagSetItemType.

Name	Description
resourceId	The ID of the resource. For example, <code>ami-1a2b3c4d</code> . Type: String

Name	Description
resourceType	The type of resource. Type: String Valid values: customer-gateway dhcp-options image instance internet-gateway network-acl reserved-instances route-table security-group snapshot spot-instances-request subnet volume vpc vpn-connection vpn-gateway
key	The key of the tag. Type: String
value	The value of the tag. Type: String

UserDataType

The UserData type data type.

Ancestors

- [LaunchSpecificationRequestType](#) (p. 488)
- [RunInstancesType](#)

Relevant Operations

- [RequestSpotInstances](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)
- [RunInstances](#)

Contents

The following table describes the elements contained in UserData type.

Name	Description
data	The Base64-encoded MIME user data made available to the instance(s) in the reservation. Type: String

UserGroupIdPairType

The UserGroupIdPairType data type.

Ancestors

- UserIdGroupPairSetType

Relevant Operations

- AuthorizeSecurityGroupEgress
- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupEgress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

Contents

The following table describes the elements contained in UserIdGroupPairType.

Name	Description
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

ValueType

The ValueType data type.

Ancestors

- ValueSetType

Relevant Operations

- DescribeVpcs
- DescribeSubnets
- DescribeVpnGateways
- DescribeCustomerGateways

- DescribeVpnConnections

Contents

The following table describes the elements contained in `ValueType`.

Name	Description
<code>value</code>	An individual value. Type: String

VolumeStatusItemType

The `VolumeStatusItemType` data type.

Ancestors

- VolumeStatusSetType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements contained in `VolumeStatusItemType`.

Name	Description
<code>volumeId</code>	The volume ID. Type: String
<code>availabilityZone</code>	The Availability Zone of the volume. Type: String
<code>volumeStatus</code>	The volume status. The status of each volume is wrapped in an <code>item</code> element. Type: VolumeStatusInfoType (p. 526).
<code>eventSet</code>	A list of events associated with the volume. Each event is wrapped in an <code>item</code> element. Type: VolumeStatusEventItemType (p. 527).
<code>actionSet</code>	The details of the action. Each action detail is wrapped in an <code>item</code> element. Type: VolumeStatusActionItemType (p. 527).

VolumeStatusInfoType

The VolumeStatusInfoType data type.

Ancestors

- VolumeStatusItemType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements contained in VolumeStatusInfoType.

Name	Description
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 <code>item</code> type. Type: VolumeStatusDetailsItemType (p. 526).

VolumeStatusDetailsItemType

The VolumeStatusDetailsItemType data type.

Ancestors

- VolumeStatusInfoType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements contained in VolumeStatusDetailsItemType.

Name	Description
name	The name of the volume's status. Type: String
status	The intended status of the volume status. Type: String

VolumeStatusEventItemType

The VolumeStatusEventItemType data type.

Ancestors

- VolumeStatusItemType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements contained in VolumeStatusEventItemType.

Name	Description
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

The VolumeStatusActionItemType data type.

Ancestors

- VolumeStatusItemType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements contained in VolumeStatusActionItemType.

Name	Description
code	The code identifying the action. 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

The VpcType data type.

Ancestors

- CreateVpcResponse
- VpcSetType

Relevant Operations

- CreateVpc
- DescribeVpcs

Contents

The following table describes the elements contained in VpcType.

Name	Description
<code>vpcId</code>	The ID of the VPC. Type: String
<code>state</code>	The current state of the VPC. Type: String Valid values: <code>pending</code> <code>available</code>
<code>cidrBlock</code>	The CIDR block the VPC covers. Type: String
<code>dhcpOptionsId</code>	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
<code>tagSet</code>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)
<code>instanceTenancy</code>	The allowed tenancy of instances launched into the VPC. Type: String

VpnConnectionOptionsRequestType

The `VpnConnectionOptionsRequestType` data type.

Relevant Operations

- `CreateVpnConnection`
- `DeleteVpnConnection`

Contents

The following table describes the elements contained in `VpnConnectionOptionsRequestType`.

Name	Description
<code>staticRoutesOnly</code>	Indicates whether or not the VPN connection uses static routes only. Static routes must be used for devices that do not support BGP. Type: Boolean

VpnConnectionOptionsResponseType

The `VpnConnectionOptionsResponseType` data type.

Contents

The following table describes the elements contained in `VpnConnectionOptionsResponseType`.

Name	Description
<code>staticRoutesOnly</code>	Indicates whether or not the VPN connection uses static routes only. Static routes must be used for devices that do not support BGP. Type: Boolean

VpnConnectionType

The `VpnConnectionType` data type.

Ancestors

- `CreateVpnConnectionResponse`
- `VpnConnectionSetType`

Relevant Operations

- `CreateVpnConnection`
- `DescribeVpnConnections`

Contents

The following table describes the elements contained in `VpnConnectionType`.

Name	Description
<code>vpnConnectionId</code>	The ID of the VPN connection. Type: String
<code>state</code>	The current state of the VPN connection. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
<code>customerGatewayConfiguration</code>	The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the <code>CreateVpnConnection</code> response; however, it's present in the <code>DescribeVpnConnections</code> response only if the VPN connection is in the <code>pending</code> or <code>available</code> state. Type: String
<code>type</code>	The type of VPN connection (<code>ipsec.1</code>). Type: String

Name	Description
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 VPC end of the VPN connection. Type: String
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)
vgwTelemetry	Information about the virtual private gateway. Each gateway is wrapped in an <code>item</code> element. Type: VpnTunnelTelemetryType (p. 532)
options	The option set describing the VPN connection. Type: VpnConnectionOptionsRequestType (p. 529)
routes	The set of static routes associated with a VPN connection. Type: VpnStaticRouteType (p. 532)

VpnGatewayType

The `VpnGatewayType` data type contains information about a virtual private gateway.

Ancestors

- `CreateVpnGatewayResponse`
- `VpnGatewaySetType`

Relevant Operations

- `CreateVpnGateway`
- `DescribeVpnGateways`

Contents

The following table describes the elements contained in `VpnGatewayType`.

Name	Description
vpnGatewayId	The ID of the virtual private gateway. Type: String

Name	Description
state	The current state of the virtual private gateway. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>
type	The type of VPN connection the virtual private gateway supports (ipsec.1). Type: String
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 <code>item</code> element. Type: AttachmentType (p. 438)
tagSet	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: ResourceTagSetItemType (p. 508)

VpnStaticRouteType

The VpnStaticRouteType data type.

Contents

The following table describes the elements contained in VpnStaticRouteType.

Name	Description
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: <code>Static</code>
state	The current state of the static route. Type: String Valid values: <code>pending</code> <code>available</code> <code>deleting</code> <code>deleted</code>

VpnTunnelTelemetryType

The VpnTunnelTelemetryType data type.

Ancestors

- VgwTelemetryType

Relevant Operations

- CreateVpnConnection
- DescribeVpnConnections

Contents

The following table describes the elements contained in VpnTunnelTelemetryType.

Name	Description
<code>outsideIpAddress</code>	The Internet-routable IP address of the virtual private gateway's outside interface. Type: String
<code>status</code>	The status of the VPN tunnel. Type: String Valid values: UP DOWN
<code>lastStatusChange</code>	The date and time of the last change in status. Type: DateTime
<code>statusMessage</code>	If an error occurs, a description of the error. Type: String
<code>acceptedRouteCount</code>	The number of accepted routes. Type: Integer

Common Query Parameters

All Query actions share a set of common parameters that must be present in each call.

Name	Description	Required
<i>Action</i>	Indicates the action to perform. Example: RunInstances	Yes
<i>Version</i>	The API version to use, as specified in the WSDL. Example: 2012-08-15	Yes
<i>AWSAccessKeyId</i>	The Access Key ID for the request sender. This identifies the account which will be charged for usage of the service. The account with which the Access Key ID is associated must be signed up for Amazon EC2, or requests will not be accepted. AKIAIOSFODNN7EXAMPLE	Yes
<i>Timestamp</i>	The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, go to ISO 8601 . 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. For more information, go to Using Temporary Security Credentials in the <i>Amazon Elastic Compute Cloud User Guide</i> . Default: None Type: String	No
<i>Signature</i>	The request signature. For more information, go to Making Query Requests in the <i>Amazon Elastic Compute Cloud User Guide</i> . Example: Qnp14Qk/7tINHzfXCiT7VEXAMPLE	Yes

Name	Description	Required
<i>SignatureMethod</i>	The hash algorithm you use to create the request signature. Valid values: HmacSHA256 HmacSHA1. For more information, go to Making Query Requests in the <i>Amazon Elastic Compute Cloud User Guide</i> . Example: HmacSHA256	Yes
<i>SignatureVersion</i>	The signature version you use to sign the request. Set this value to 2. For more information, go to Making Query Requests in the <i>Amazon Elastic Compute Cloud User Guide</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.

Error Codes

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 an authentication failure or an invalid AMI identifier. In the SOAP API, these error codes are prefixed with `Client`. For example: `Client.AuthFailure`. 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 and should be reported. In the SOAP API, these error codes are prefixed with `Server`. For example: `Server.Unavailable`. In the Query API, these errors are accompanied by a 500-series HTTP response code.

Summary of Client Error Codes

Error Code	Description	Notes
<code>AddressLimitExceeded</code>	You've reached the limit on the number of elastic IP addresses your account can have.	Each AWS account has an EC2 elastic IP address limit. For new accounts, this limit is 5. If you need more than 5 EC2 elastic IP addresses, please complete the Amazon EC2 Elastic IP Address Request Form . We will ask you to think through your use case and help us understand your need for additional addresses. You have a separate limit for VPC elastic IP addresses (5). To request to increase the limit, complete the Amazon VPC Limits form .

Amazon Elastic Compute Cloud API Reference
Summary of Client Error Codes

Error Code	Description	Notes
AttachmentLimitExceeded	You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.	
AuthFailure	User not authorized.	You might be trying to run an AMI for which you do not have permission.
Blocked	The account is currently blocked.	Contact aws-verification@amazon.com if you have questions.
CustomerGatewayLimitExceeded	You've reached the limit on the number of customer gateways you can create.	
DependencyViolation	The specified object has dependent resources.	
DiskImageSizeTooLarge	The disk image exceeds the allowed limit (for instance or volume import).	
FilterLimitExceeded	Request uses too many filters or too many total filter values.	
Gateway.NotAttached	Specified gateway isn't attached, so it can't be detached.	
IdempotentParameterMismatch	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	Instance is in an incorrect state so the attempted action cannot occur.	
IncorrectState	Volume is in an incorrect state.	To attach to an instance, it must be in the 'available' state.
InstanceLimitExceeded	Account has maximum allowed concurrent running instances.	Each AWS account has a concurrent running instance limit. For new accounts, this limit is 20. If you need more than 20 instances, please complete the Amazon EC2 Instance Request Form and your request will be considered.
InsufficientInstanceCapacity	There is insufficient capacity available for the requested instance type.	The returned message gives guidance on how to solve the problem.

**Amazon Elastic Compute Cloud API Reference
Summary of Client Error Codes**

Error Code	Description	Notes
<code>InsufficientReservedInstancesCapacity</code>	Insufficient Reserved Instances capacity.	
<code>InternetGatewayLimitExceeded</code>	You've reached the limit on the number of Internet gateways you can create.	
<code>InvalidAMIAttributeItemValue</code>	The value of an item added to, or removed from, an image attribute is invalid.	If you are specifying a <code>userId</code> , check that it is in the form of an AWS account ID.
<code>InvalidAMIID.Malformed</code>	Specified AMI ID is not valid.	
<code>InvalidAMIID.NotFound</code>	Specified AMI ID does not exist.	
<code>InvalidAMIID.Unavailable</code>	Specified AMI ID has been deregistered and is no longer available.	
<code>InvalidAssociationID.NotFound</code>	Specified association ID does not exist.	
<code>InvalidAttachment.NotFound</code>	The instance cannot detach from a volume to which it is not attached.	
<code>InvalidConversionTaskId</code>	Specified conversion task ID (for instance or volume import) is invalid.	
<code>InvalidCustomerGateway.DuplicateIpAddress</code>	Conflict among chosen gateway IP addresses.	
<code>InvalidCustomerGatewayID.NotFound</code>	The specified customer gateway ID does not exist.	
<code>InvalidDevice.InUse</code>	The device to which you are trying to attach (i.e. <code>/dev/sdh</code>) is already in use on the instance.	
<code>InvalidDhcpOptionsID.NotFound</code>	Specified DHCP options ID does not exist.	
<code>InvalidFormat</code>	Specified disk format (for instance or volume import) is invalid.	
<code>InvalidFilter</code>	Specified filter is invalid.	
<code>InvalidGatewayID.NotFound</code>	Specified gateway ID does not exist.	
<code>InvalidGroup.Duplicate</code>	Attempt to create a duplicate group.	
<code>InvalidGroupId.Malformed</code>	Specified group ID is invalid.	

**Amazon Elastic Compute Cloud API Reference
Summary of Client Error Codes**

Error Code	Description	Notes
<code>InvalidGroup.InUse</code>	Specified group cannot be deleted because it is in use.	
<code>InvalidGroup.NotFound</code>	Specified group name does not exist.	
<code>InvalidGroup.Reserved</code>	Specified group name is a reserved name.	
<code>InvalidInstanceID.Malformed</code>	Specified instance ID is not valid.	
<code>InvalidInstanceID.NotFound</code>	Specified instance ID does not exist.	
<code>InvalidInternetGatewayID.NotFound</code>	Specified Internet gateway ID does not exist.	
<code>InvalidIPAddress.InUse</code>	Specified IP address is currently in use.	
<code>InvalidKeyPair.Duplicate</code>	Attempt to create a duplicate key pair.	
<code>InvalidKeyPair.Format</code>	Format of the public key you've attempted to import is invalid.	
<code>InvalidKeyPair.NotFound</code>	Specified key pair name does not exist.	
<code>InvalidManifest</code>	Specified AMI has an unparsable manifest.	
<code>InvalidNetworkAclEntry.NotFound</code>	Specified network ACL entry does not exist.	
<code>InvalidNetworkAclID.NotFound</code>	Specified network ACL ID does not exist.	
<code>InvalidParameterCombination</code>	Example: <code>RunInstances</code> was called with both <code>minCount</code> and <code>maxCount</code> set to 0, or <code>minCount</code> > <code>maxCount</code> .	
<code>InvalidParameterValue</code>	The value supplied for a parameter was invalid.	Requests that could cause this error include (for example) supplying an invalid image attribute to the <code>DescribeImageAttribute</code> request or an invalid version or encoding value for the <code>userData</code> in a <code>RunInstances</code> request.
<code>InvalidPermission.Duplicate</code>	Attempt to authorize a permission that has already been authorized.	

**Amazon Elastic Compute Cloud API Reference
Summary of Client Error Codes**

Error Code	Description	Notes
<code>InvalidPermission.Malformed</code>	Specified permission is invalid.	
<code>InvalidReservationID.Malformed</code>	Specified reservation ID is invalid.	
<code>InvalidReservationID.NotFound</code>	Specified reservation ID does not exist.	
<code>InvalidRoute.NotFound</code>	Specified route does not exist in the route table.	
<code>InvalidRouteTableID.NotFound</code>	Specified route table ID does not exist.	
<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 that was passed as an argument was malformed.	
<code>InvalidSnapshot.NotFound</code>	The specified snapshot does not exist.	
<code>InvalidUserID.Malformed</code>	The user ID is neither in the form of an AWS account ID or one of the special values accepted by the <code>owner</code> or <code>executableBy</code> flags in the <code>DescribeImages</code> call.	
<code>InvalidReservedInstancesId</code>	Reserved Instances ID not found.	
<code>InvalidReservedInstancesOfferingId</code>	Reserved Instances Offering ID not found.	
<code>InvalidSubnetID.NotFound</code>	Specified subnet ID does not exist.	
<code>InvalidVolumeID.Duplicate</code>	Volume already exists in the system.	
<code>InvalidVolumeID.Malformed</code>	Specified volume ID was malformed.	
<code>InvalidVolumeID.ZoneMismatch</code>	Specified volume ID and instance ID are in different Availability Zones.	
<code>InvalidVolume.NotFound</code>	Specified volume does not exist.	
<code>InvalidVpcID.NotFound</code>	Specified VPC ID does not exist.	

Amazon Elastic Compute Cloud API Reference
Summary of Client Error Codes

Error Code	Description	Notes
<code>InvalidVpnConnectionID.NotFound</code>	The specified VPN connection ID does not exist.	
<code>InvalidVpnGatewayID.NotFound</code>	Specified virtual private gateway ID does not exist.	
<code>InvalidZone.NotFound</code>	The specified 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>MissingParameter</code>	The request is missing a required parameter.	
<code>NetworkAclEntryAlreadyExists</code>	Specified rule number already exists in this network ACL.	
<code>NetworkAclEntryLimitExceeded</code>	You've reached the limit on the number of network ACL entries you can add to the ACL.	
<code>NetworkAclLimitExceeded</code>	You've reached the limit on the number of network ACLs you can create.	
<code>NonEBSInstance</code>	The instance specified does not support EBS.	Please restart the instance and try again. This will ensure that the code is run on an instance with updated code.
<code>PendingSnapshotLimitExceeded</code>	You've reached the limit on the number of Amazon EBS snapshots you can have in the pending state.	
<code>PendingVerification</code>	The account is pending verification.	Contact aws-verification@amazon.com if you have questions.
<code>OptInRequired</code>	The user is not authorized to use the requested product.	This error message can apply to Amazon EC2 or individual AWS Marketplace product codes.
<code>RequestLimitExceeded</code>	The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account.	Retry your request after a few seconds.

Amazon Elastic Compute Cloud API Reference
Summary of Client Error Codes

Error Code	Description	Notes
<code>ReservedInstancesLimitExceeded</code>	Your current quota does not allow you to purchase the required number of reserved instances.	
<code>Resource.AlreadyAssociated</code>	Specified gateway is already attached, or specified subnet is already associated with another object.	
<code>ResourceLimitExceeded</code>	Exceeded an EC2 resource limit.	Example: You reached the maximum number of import conversion tasks allowed.
<code>RouteAlreadyExists</code>	A route for the specified CIDR block already exists in this route table.	
<code>RouteLimitExceeded</code>	You've reached the limit on the number of routes you can add to a route table.	
<code>RouteTableLimitExceeded</code>	You've reached the limit on the number of route tables you can create.	
<code>RulesPerSecurityGroupLimitExceeded</code>	You've reached the limit on the number of rules you can add to a security group.	
<code>SecurityGroupLimitExceeded</code>	You've reached the limit on the number of security groups you can create.	
<code>SecurityGroupsPerInstanceLimitExceeded</code>	You've reached the limit on the number of security groups you can put an instance into.	
<code>SnapshotLimitExceeded</code>	You've reached the limit on the number of Amazon EBS snapshots you can create.	
<code>SubnetLimitExceeded</code>	You've reached the limit on the number of subnets you can create for the VPC.	
<code>UnknownParameter</code>	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.

Amazon Elastic Compute Cloud API Reference
Summary of Server Error Codes

Error Code	Description	Notes
UnsupportedOperation	The instance type or feature is not supported in your requested Availability Zone or with the requested configuration.	The returned message gives guidance on how to solve the problem.
VolumeLimitExceeded	You've reached the limit on the number of Amazon EBS volumes you can create.	
VpcLimitExceeded	You've reached the limit on the number of VPCs you can create.	
VpnConnectionLimitExceeded	You've reached the limit on the number of VPN connections you can create.	
VpnGatewayAttachmentLimitExceeded	You've reached the limit on the number of VPCs that can be attached to the given virtual private gateway.	
VpnGatewayLimitExceeded	You've reached the limit on the number of virtual private gateways you can create.	

Summary of Server Error Codes

Error Code	Description	Notes
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.

Error Code	Description	Notes
InternalServerError	Internal Error.	This error should not occur. If this persists, please contact us with details by posting a message on the AWS forums .
Unavailable	The server is overloaded and cannot 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>
```

Amazon EC2 Resources

The following table lists related resources that you'll find useful as you work with this service.

Resource	Description
Amazon Elastic Compute Cloud Getting Started Guide	Provides a quick tutorial of the service based on a simple use case. Examples and instructions are included.
Amazon Elastic Compute Cloud User Guide	Provides conceptual information about Amazon EC2 and describes how to use Amazon EC2 features using the AWS Management Console, command line tools, and Query API.
Amazon Elastic Compute Cloud Command Line Reference	Contains a comprehensive description of all the command line tools and their options.
Amazon EC2 Technical FAQ	Covers the top questions developers have asked about this product.
Amazon EC2 Release Notes	Give a high-level overview of the current release. They specifically note any new features, corrections, and known issues.
AWS Developer Resource Center	A central starting point to find documentation, code samples, release notes, and other information to help you build innovative applications with AWS.
AWS Management Console	The console lets you perform most of the functions of Amazon EC2 and other AWS products without programming.
Discussion Forums	A community-based forum for developers to discuss technical questions related to Amazon Web Services.
AWS Support Center	The home page for AWS Technical Support, including access to our Developer Forums, Technical FAQs, Service Status page, and AWS Premium Support (if you are subscribed to this program).
AWS Premium Support Information	The primary web page for information about AWS Premium Support, a one-on-one, fast-response support channel to help you build and run applications on AWS Infrastructure Services.

Resource	Description
Amazon EC2 Product Information	The primary web page for information about Amazon EC2.
Form for questions related to your AWS account: Contact Us	This form is <i>only</i> for account questions. For technical questions, use the Discussion Forums.
Terms of Use	Detailed information about the copyright and trademark usage at Amazon.com and other topics.

Document History

The following table describes the important changes since the last release of the Amazon EC2 documentation set.

API version: 2012-08-15.

Latest documentation update: September 11, 2012.

Change	Description	Release Date
Support for Amazon EC2 Reserved Instance Marketplace and a New API Version	<p>Added support for Amazon EC2 Reserved Instance Marketplace and a new API version: 2012-08-15. For information on the calls related to this release, see the following new commands:</p> <ul style="list-style-type: none"> • CancelReservedInstancesListing (p. 50) • CreateReservedInstancesListing (p. 84) • DescribeReservedInstancesListings (p. 249) <p>In addition, the following calls were updated:</p> <ul style="list-style-type: none"> • DescribeReservedInstancesOfferings (p. 253) • PurchaseReservedInstancesOffering (p. 367) 	11 September 2012
Support for AWS Marketplace and a New API Version	Added support for AWS Marketplace AMIs and a new API version: 2012-04-01.	19 April 2012

Change	Description	Release Date
Amazon EBS Volume Status Check	<p>Starting with API version 2012-03-01, you can check the operational status of your Amazon EBS volume. The volume status check gives you information about the I/O, also known as read/write, capability of your EBS volumes. The volume status check lets you know when an EBS volume's data is potentially inconsistent. Amazon Web Services (AWS) gives you options to handle the potentially inconsistent volume. For information on the actions related to this release, see:</p> <ul style="list-style-type: none"> • DescribeVolumeStatus (p. 306) • ModifyVolumeAttribute (p. 363) • DescribeVolumeAttribute (p. 304) • EnableVolumeIO (p. 338) 	12 March 2012
Instance Status Checks	<p>Starting with API version 2011-12-15, you can use the <code>DescribeInstanceStatus</code> action to retrieve results of automated checks performed by Amazon EC2. These status checks detect problems that may impair an instance's ability to run your applications. You can use <code>ReportInstanceStatus</code> to send us feedback or report an inaccurate instance status.</p>	30 December 2011
Elastic Network Interfaces (ENIs) for Amazon EC2 Instances in Amazon Virtual Private Cloud	<p>Starting with API version 2011-12-01, you can attach an elastic network interface (ENI) to an EC2 instance in a VPC. For more information, see:</p> <ul style="list-style-type: none"> • AttachNetworkInterface (p. 27) • DetachNetworkInterface (p. 324) • CreateNetworkInterface (p. 77) • DeleteNetworkInterface (p. 132) • DescribeNetworkInterfaces (p. 233) • DescribeNetworkInterfaceAttribute (p. 231) • ModifyNetworkInterfaceAttribute (p. 359) • ResetNetworkInterfaceAttribute (p. 402) 	21 December 2011
New Offering Types for Amazon EC2 Reserved Instances	<p>Starting with API version 2011-11-01, you can use the new <i>offering-type</i> parameter of <code>DescribeReservedInstancesOfferings</code> to identify the Reserved Instance offerings that address your projected use: <i>Heavy Utilization</i>, <i>Medium Utilization</i>, and <i>Light Utilization</i>. See DescribeReservedInstancesOfferings (p. 253).</p>	01 December 2011
Support for Amazon EC2 Instance Status	<p>The RequestParameters (p. 216) API action allows you to view the status of your instances and any upcoming scheduled events.</p>	14 November 2011
Support for Amazon EC2 Spot Instances in Amazon VPC	<p>The RequestSpotInstances (p. 390) action is updated with the <code>subnet</code> option, which enables you to specify an Amazon VPC subnet into which to launch your Spot Instances.</p>	11 October 2011

Change	Description	Release Date
Support for VHD file format added to the 2011-07-15 API version	We've added VHD as one of the VM file formats supported for import into Amazon EC2. See the API actions ImportInstance and ImportVolume , and the CLI commands ec2-import-instance and ec2-import-volume .	24 August 2011
Updates for the 2011-07-15 API version	We've added one new data type, VpnTunnelTelemetryType (p. 532), for the 2011-07-15 API release.	03 August 2011
Temporary Security Credentials	We've added one new common request parameter, SecurityToken , that supports temporary security credentials. For more information, see Common Query Parameters (p. 534) or go to Using Temporary Security Credentials in the <i>Amazon Elastic Compute Cloud User Guide</i> .	03 August 2011
Spot Instances Availability Zone pricing changes	We've updated several actions that explain API changes for the Spot Instances Availability Zone pricing feature. We've also added new Availability Zone pricing options as part of the information returned by Spot Instance Requests and Spot Price History API calls.	26 May 2011
Updates for the 2011-05-15 API Version	We've updated several existing actions for the 2011-05-15 API release.	26 May 2011
Dedicated Instances	As part of the Dedicated Instances feature release, we've added new options related to the tenancy attribute of instances, and the instance tenancy attribute of VPCs.	27 March 2011
Updates for the 2011-02-28 API version	We've updated several existing actions for the 2011-02-28 API release.	27 March 2011
Updates for the 2011-01-01 API version	We've added new actions and updated several existing actions for the 2011-01-01 API release. The new and updated actions are related to these Amazon VPC objects: Internet gateways, route tables, network ACLs, VPC security groups, and VPC Elastic IP addresses.	11 March 2011
Merged Amazon VPC Documentation	We've merged the Amazon VPC actions into this guide.	11 March 2011
VM Import	Added the following new actions, which allow you to import a virtual machine or volume into Amazon EC2: <ul style="list-style-type: none"> • ImportInstance (p. 344) • ImportVolume (p. 350) • DescribeConversionTasks (p. 173) • CancelConversionTask (p. 46) 	15 December 2010
Consolidated Documentation	We've consolidated the Query and SOAP API topics. See Actions (p. 9).	06 December 2010

Change	Description	Release Date
Parameters for <code>ModifyImageAttribute</code> and <code>ModifyInstanceAttribute</code>	Updated the list of Query parameters for ModifyImageAttribute (p. 353) and for ModifyInstanceAttribute (p. 356).	20 November 2010
Modifying Block Device Mapping	Removed information from ModifyInstanceAttribute (p. 356) about modifying an instance's block device mapping attribute. You currently can't modify an instance's block device mapping with this action.	20 November 2010
Filters and Tags	Added information about filters to many of the <i>describe</i> actions. Added information about creating, describing, and deleting tags. For more information about the API actions for tags, see CreateTags (p. 102), DeleteTags (p. 147), and DescribeTags (p. 294).	19 September 2010
Idempotent Instance Launch	Updated <code>RunInstances</code> to include a <code>ClientToken</code> parameter to ensure idempotency. For more information about the change to <code>RunInstances</code> , see RunInstances (p. 412).	19 September 2010
Import Key Pair	Added <code>ImportKeyPair</code> . For more information, see ImportKeyPair (p. 348).	19 September 2010
Placement Groups for Cluster Compute Instances	Added information about placement groups, which you use with cluster compute instances. For more information about the API actions for placement groups, see CreatePlacementGroup (p. 82), DescribePlacementGroups (p. 239), and DeletePlacementGroup (p. 134).	12 July 2010
Amazon VPC IP Address Designation	Amazon VPC users can now specify the IP address to assign an instance launched in a VPC. For information about using the <code>PrivateIpAddress</code> parameter with the <code>RunInstances</code> action, see RunInstances (p. 412).	12 July 2010
Error List Update	Updated the list of errors to include <code>Client.Blocked</code> , <code>Client.InsufficientInstanceCapacity</code> , <code>Client.PendingVerification</code> , and <code>Client.Unsupported</code> . For more information, see Error Codes (p. 536).	21 May 2010
Security Group Permissions	Clarified the information about authorizing security group permissions. For more information, see AuthorizeSecurityGroupIngress (p. 37).	28 April 2010
New Region	Amazon EC2 now supports the Asia Pacific (Singapore) Region. The new endpoint for requests to this Region is <code>ec2.ap-southeast-1.amazonaws.com</code> .	28 April 2010

Change	Description	Release Date
Clarification about Spot Instances	Clarified that you can't stop and start Spot Instances that use an Amazon EBS root device. For more information about stopping instances, see StopInstances (p. 425).	1 February 2010
Spot Instances	To support customers that use Amazon EC2 instances, but have more flexible usage requirements (e.g., when instances run, how long they run, or whether usage completes within a specific timeframe), Amazon EC2 now provides Spot Instances. A Spot Instance is an instance that Amazon EC2 automatically runs for you when its maximum price is greater than the Spot Price. For conceptual information about Spot Instances, go to the Amazon Elastic Compute Cloud User Guide .	14 December 2009