
Amazon EMR

API Reference

API Version 2009-03-31



Amazon EMR: API Reference

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Welcome

Amazon EMR is a web service that makes it easier to process large amounts of data efficiently. Amazon EMR uses Hadoop processing combined with several AWS services to do tasks such as web indexing, data mining, log file analysis, machine learning, scientific simulation, and data warehouse management.

This document was last published on October 6, 2021.

Actions

The following actions are supported:

- [AddInstanceFleet](#) (p. 4)
- [AddInstanceGroups](#) (p. 7)
- [AddJobFlowSteps](#) (p. 11)
- [AddTags](#) (p. 15)
- [CancelSteps](#) (p. 18)
- [CreateSecurityConfiguration](#) (p. 22)
- [CreateStudio](#) (p. 24)
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- [SetVisibleToAllUsers](#) (p. 138)
- [StartNotebookExecution](#) (p. 141)
- [StopNotebookExecution](#) (p. 145)
- [TerminateJobFlows](#) (p. 147)
- [UpdateStudio](#) (p. 149)
- [UpdateStudioSessionMapping](#) (p. 151)

AddInstanceFleet

Adds an instance fleet to a running cluster.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x.

Request Syntax

```
{
  "ClusterId": "string",
  "InstanceFleet": {
    "InstanceFleetType": "string",
    "InstanceTypeConfigs": [
      {
        "BidPrice": "string",
        "BidPriceAsPercentageOfOnDemandPrice": number,
        "Configurations": [
          {
            "Classification": "string",
            "Configurations": [
              "Configuration"
            ],
            "Properties": {
              "string" : "string"
            }
          }
        ],
        "CustomAmiId": "string",
        "EbsConfiguration": {
          "EbsBlockDeviceConfigs": [
            {
              "VolumeSpecification": {
                "Iops": number,
                "SizeInGB": number,
                "VolumeType": "string"
              },
              "VolumesPerInstance": number
            }
          ],
          "EbsOptimized": boolean
        },
        "InstanceType": "string",
        "WeightedCapacity": number
      }
    ],
    "LaunchSpecifications": {
      "OnDemandSpecification": {
        "AllocationStrategy": "string",
        "CapacityReservationOptions": {
          "CapacityReservationPreference": "string",
          "CapacityReservationResourceGroupArn": "string",
          "UsageStrategy": "string"
        }
      },
      "SpotSpecification": {
        "AllocationStrategy": "string",
        "BlockDurationMinutes": number,
        "TimeoutAction": "string",
        "TimeoutDurationMinutes": number
      }
    }
  }
},
```

```
"Name": "string",  
"TargetOnDemandCapacity": number,  
"TargetSpotCapacity": number  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 297\)](#).

The request accepts the following data in JSON format.

[ClusterId \(p. 4\)](#)

The unique identifier of the cluster.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

[InstanceFleet \(p. 4\)](#)

Specifies the configuration of the instance fleet.

Type: [InstanceFleetConfig \(p. 202\)](#) object

Required: Yes

Response Syntax

```
{  
  "ClusterArn": "string",  
  "ClusterId": "string",  
  "InstanceFleetId": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

[ClusterArn \(p. 5\)](#)

The Amazon Resource Name of the cluster.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

[ClusterId \(p. 5\)](#)

The unique identifier of the cluster.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

InstanceFleetId (p. 5)

The unique identifier of the instance fleet.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

AddInstanceGroups

Adds one or more instance groups to a running cluster.

Request Syntax

```
{
  "InstanceGroups": [
    {
      "AutoScalingPolicy": {
        "Constraints": {
          "MaxCapacity": number,
          "MinCapacity": number
        },
        "Rules": [
          {
            "Action": {
              "Market": "string",
              "SimpleScalingPolicyConfiguration": {
                "AdjustmentType": "string",
                "CoolDown": number,
                "ScalingAdjustment": number
              }
            },
            "Description": "string",
            "Name": "string",
            "Trigger": {
              "CloudWatchAlarmDefinition": {
                "ComparisonOperator": "string",
                "Dimensions": [
                  {
                    "Key": "string",
                    "Value": "string"
                  }
                ],
                "EvaluationPeriods": number,
                "MetricName": "string",
                "Namespace": "string",
                "Period": number,
                "Statistic": "string",
                "Threshold": number,
                "Unit": "string"
              }
            }
          }
        ]
      },
      "BidPrice": "string",
      "Configurations": [
        {
          "Classification": "string",
          "Configurations": [
            "Configuration"
          ],
          "Properties": {
            "string": "string"
          }
        }
      ],
      "CustomAmiId": "string",
      "EbsConfiguration": {
        "EbsBlockDeviceConfigs": [
          {
```

```
        "VolumeSpecification": {
            "Iops": number,
            "SizeInGB": number,
            "VolumeType": "string"
        },
        "VolumesPerInstance": number
    },
    "EbsOptimized": boolean
},
"InstanceCount": number,
"InstanceRole": "string",
"InstanceType": "string",
"Market": "string",
"Name": "string"
}
],
"JobFlowId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

[InstanceGroups](#) (p. 7)

Instance groups to add.

Type: Array of [InstanceGroupConfig](#) (p. 213) objects

Required: Yes

[JobFlowId](#) (p. 7)

Job flow in which to add the instance groups.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–D7FFE000–FFFDD800DC00–DBFFFFFFxnt]*

Required: Yes

Response Syntax

```
{
  "ClusterArn": "string",
  "InstanceGroupIds": [ "string" ],
  "JobFlowId": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ClusterArn (p. 8)

The Amazon Resource Name of the cluster.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

InstanceGroupIds (p. 8)

Instance group IDs of the newly created instance groups.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

JobFlowId (p. 8)

The job flow ID in which the instance groups are added.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of `AddInstanceGroups`.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.AddInstanceGroups
Content-Length: 168
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130715T223346Z
X-Amz-Content-Sha256: ac5a7193b1283898dd822a4b16ca36963879bb010d2dbe57198439973ab2a7d3
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130715/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-
```

```
type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target,
Signature=4c5e7eb762ea45f292a5cd1a1cc56ed60009e19a9dba3d6e5e4e67e96d43af11
Accept: */*

{
  "JobFlowId": "j-3U7TSX5GZFD8Y",
  "InstanceGroups": [{
    "Name": "Task Instance Group",
    "InstanceRole": "TASK",
    "InstanceCount": 2,
    "InstanceType": "m1.small",
    "Market": "ON_DEMAND"
  }]
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 9da5a349-ed9e-11e2-90db-69a5154aeb8d
Content-Type: application/x-amz-json-1.1
Content-Length: 71
Date: Mon, 15 Jul 2013 22:33:47 GMT

{
  "InstanceGroupIds": ["ig-294A6A2KWT4WB"],
  "JobFlowId": "j-3U7TSX5GZFD8Y"
}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

AddJobFlowSteps

AddJobFlowSteps adds new steps to a running cluster. A maximum of 256 steps are allowed in each job flow.

If your cluster is long-running (such as a Hive data warehouse) or complex, you may require more than 256 steps to process your data. You can bypass the 256-step limitation in various ways, including using SSH to connect to the master node and submitting queries directly to the software running on the master node, such as Hive and Hadoop. For more information on how to do this, see [Add More than 256 Steps to a Cluster](#) in the *Amazon EMR Management Guide*.

A step specifies the location of a JAR file stored either on the master node of the cluster or in Amazon S3. Each step is performed by the main function of the main class of the JAR file. The main class can be specified either in the manifest of the JAR or by using the MainFunction parameter of the step.

Amazon EMR executes each step in the order listed. For a step to be considered complete, the main function must exit with a zero exit code and all Hadoop jobs started while the step was running must have completed and run successfully.

You can only add steps to a cluster that is in one of the following states: STARTING, BOOTSTRAPPING, RUNNING, or WAITING.

Note

The string values passed into HadoopJarStep object cannot exceed a total of 10240 characters.

Request Syntax

```
{
  "JobFlowId": "string",
  "Steps": [
    {
      "ActionOnFailure": "string",
      "HadoopJarStep": {
        "Args": [ "string" ],
        "Jar": "string",
        "MainClass": "string",
        "Properties": [
          {
            "Key": "string",
            "Value": "string"
          }
        ]
      },
      "Name": "string"
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

JobFlowId (p. 11)

A string that uniquely identifies the job flow. This identifier is returned by [RunJobFlow](#) (p. 122) and can also be obtained from [ListClusters](#) (p. 69).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Steps (p. 11)

A list of [StepConfig \(p. 279\)](#) to be executed by the job flow.

Type: Array of [StepConfig \(p. 279\)](#) objects

Required: Yes

Response Syntax

```
{  
  "StepIds": [ "string" ]  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

StepIds (p. 12)

The identifiers of the list of steps added to the job flow.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of `AddJobFlowSteps`.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.AddJobFlowSteps
Content-Length: 426
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130716T210948Z
X-Amz-Content-Sha256: 9e5ad0a93c22224947ce98eea94f766103d91b28fa82eb60d0cb8b6f9555a6b2
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130716/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target, Signature=2a2393390760ae85eb74ee3a539e1d758bfd8815a1a6d6f14d4a2fbcfdcd5b7
Accept: */*

{
  "JobFlowId": "j-3TS00IYO4NFN",
  "Steps": [{
    "Name": "Example Jar Step",
    "ActionOnFailure": "CANCEL_AND_WAIT",
    "HadoopJarStep": {
      "Jar": "s3n:\\\\\\elasticmapreduce\\\\samples\\\\cloudburst\\\\cloudburst.jar",
      "Args": [
        "s3n:\\\\\\elasticmapreduce\\\\samples\\\\cloudburst\\\\input\\\\s_suis.br",
        "s3n:\\\\\\elasticmapreduce\\\\samples\\\\cloudburst\\\\input\\\\100k.br",
        "s3n:\\\\\\examples-bucket\\\\cloudburst\\\\output",
        "36",
        "3",
        "0",
        "1",
        "240",
        "48",
        "24",
        "24",
        "128",
        "16"
      ]
    }
  ]
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 6514261f-ee5b-11e2-9345-5332e9ab2e6d
Content-Type: application/x-amz-json-1.1
Content-Length: 0
Date: Tue, 16 Jul 2013 21:05:07 GMT

{
  "StepIds": [
    "s-1XXXXXXXXXA"
  ]
}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

AddTags

Adds tags to an Amazon EMR resource, such as a cluster or an Amazon EMR Studio. Tags make it easier to associate resources in various ways, such as grouping clusters to track your Amazon EMR resource allocation costs. For more information, see [Tag Clusters](#).

Request Syntax

```
{
  "ResourceId": "string",
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ResourceId (p. 15)

The Amazon EMR resource identifier to which tags will be added. For example, a cluster identifier or an Amazon EMR Studio ID.

Type: String

Required: Yes

Tags (p. 15)

A list of tags to associate with a resource. Tags are user-defined key-value pairs that consist of a required key string with a maximum of 128 characters, and an optional value string with a maximum of 256 characters.

Type: Array of [Tag](#) (p. 295) objects

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of AddTags.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1

X-Amz-Target: ElasticMapReduce.AddTags

AUTHPARAMS

{
  "ResourceId": "j-3U7TSX5GZFD8Y",
  "Tags": [{
    "Key": "stack",
    "Value": "Production"
  },
  {
    "Key": "hbase"
  }
]
```

Sample Response

```
HTTP/1.1 200 OK
```

```
x-amzn-RequestId: 9da5a349-ed9e-11e2-90db-69a5154aeb8d
```

```
Content-Type: application/x-amz-json-1.1
```

```
Content-Length: 71
```

```
Date: Mon, 15 Jul 2013 22:33:47 GMT
```

```
{  
  
}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

Response Syntax

```
{
  "CancelStepsInfoList": [
    {
      "Reason": "string",
      "Status": "string",
      "StepId": "string"
    }
  ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

CancelStepsInfoList (p. 19)

A list of [CancelStepsInfo](#) (p. 167), which shows the status of specified cancel requests for each StepID specified.

Type: Array of [CancelStepsInfo](#) (p. 167) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CancelSteps.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.CancelSteps
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
```

```
X-Amz-Date: 20160719T224800Z
X-Amz-Content-Sha256: 9e5ad0a93c22224947ce98eea94f766103d91b28fa82eb60d0cb8b6f9555a6b2
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20160719/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target,
Signature=2a2393390760ae85eb74ee3a539e1d758bfdd8815a1a6d6f14d4a2fbcfdcd5b7
Accept: */*

{
  "ClusterId": "j-2G7RS6DJZE39D",
  "StepIds":
  [
    "s-11B5G7VIKHCZQ", "s-23PUT0NR3XF6O", "s-2NUYMUZ3ADACC", "s-1005XO5JUY9OE", "s-CS88G2XK4N7X", "s-2M366D3KU40TZ"
  ]
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 84931a23-4e03-11e6-b2bd-0db72d19890a
Content-Type: application/x-amz-json-1.1
Date: Tue, 19 Jul 2016 15:31:01 GMT

{
  "CancelStepsInfoList":
  [
    {
      "Reason": "This step cannot be cancelled.",
      "Status": "FAILED",
      "StepId": "s-11B5G7VIKHCZQ",
    },
    {
      "Reason": "Cannot cancel the step. It is already COMPLETED.",
      "Status": "FAILED",
      "StepId": "s-23PUT0NR3XF6O",
    },
    {
      "Reason": "Cannot cancel the step. It is already CANCELLED.",
      "Status": "FAILED",
      "StepId": "s-2NUYMUZ3ADACC",
    },
    {
      "Reason": "Cannot cancel the step. It is already RUNNING.",
      "Status": "FAILED",
      "StepId": "s-1005XO5JUY9OE",
    },
    {
      "Reason": "Cannot cancel the step. It is already FAILED.",
      "Status": "FAILED",
      "StepId": "s-CS88G2XK4N7X",
    },
    {
      "Reason": "",
      "Status": "SUBMITTED",
      "StepId": "s-2M366D3KU40TZ"
    }
  ]
}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

CreateSecurityConfiguration

Creates a security configuration, which is stored in the service and can be specified when a cluster is created.

Request Syntax

```
{  
  "Name": "string",  
  "SecurityConfiguration": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

Name (p. 22)

The name of the security configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

SecurityConfiguration (p. 22)

The security configuration details in JSON format. For JSON parameters and examples, see [Use Security Configurations to Set Up Cluster Security](#) in the *Amazon EMR Management Guide*.

Type: String

Required: Yes

Response Syntax

```
{  
  "CreationDateTime": number,  
  "Name": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

CreationDateTime (p. 22)

The date and time the security configuration was created.

Type: Timestamp

Name (p. 22)

The name of the security configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

CreateStudio

Creates a new Amazon EMR Studio.

Request Syntax

```
{
  "AuthMode": "string",
  "DefaultS3Location": "string",
  "Description": "string",
  "EngineSecurityGroupId": "string",
  "IdpAuthUrl": "string",
  "IdpRelayStateParameterName": "string",
  "Name": "string",
  "ServiceRole": "string",
  "SubnetIds": [ "string" ],
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ],
  "UserRole": "string",
  "VpcId": "string",
  "WorkspaceSecurityGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

AuthMode (p. 24)

Specifies whether the Studio authenticates users using IAM or AWS SSO.

Type: String

Valid Values: SSO | IAM

Required: Yes

DefaultS3Location (p. 24)

The Amazon S3 location to back up Amazon EMR Studio Workspaces and notebook files.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\x\n\t]*

Required: Yes

Description (p. 24)

A detailed description of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

EngineSecurityGroupId (p. 24)

The ID of the Amazon EMR Studio Engine security group. The Engine security group allows inbound network traffic from the Workspace security group, and it must be in the same VPC specified by `VpcId`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

IdpAuthUrl (p. 24)

The authentication endpoint of your identity provider (IdP). Specify this value when you use IAM authentication and want to let federated users log in to a Studio with the Studio URL and credentials from your IdP. Amazon EMR Studio redirects users to this endpoint to enter credentials.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdpRelayStateParameterName (p. 24)

The name that your identity provider (IdP) uses for its `RelayState` parameter. For example, `RelayState` or `TargetSource`. Specify this value when you use IAM authentication and want to let federated users log in to a Studio using the Studio URL. The `RelayState` parameter differs by IdP.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Name (p. 24)

A descriptive name for the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

ServiceRole (p. 24)

The IAM role that the Amazon EMR Studio assumes. The service role provides a way for Amazon EMR Studio to interoperate with other AWS services.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

SubnetIds (p. 24)

A list of subnet IDs to associate with the Amazon EMR Studio. A Studio can have a maximum of 5 subnets. The subnets must belong to the VPC specified by `VpcId`. Studio users can create a Workspace in any of the specified subnets.

Type: Array of strings

Required: Yes

Tags (p. 24)

A list of tags to associate with the Amazon EMR Studio. Tags are user-defined key-value pairs that consist of a required key string with a maximum of 128 characters, and an optional value string with a maximum of 256 characters.

Type: Array of [Tag \(p. 295\)](#) objects

Required: No

UserRole (p. 24)

The IAM user role that users and groups assume when logged in to an Amazon EMR Studio. Only specify a `UserRole` when you use AWS SSO authentication. The permissions attached to the `UserRole` can be scoped down for each user or group using session policies.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

VpcId (p. 24)

The ID of the Amazon Virtual Private Cloud (Amazon VPC) to associate with the Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

WorkspaceSecurityGroupId (p. 24)

The ID of the Amazon EMR Studio Workspace security group. The Workspace security group allows outbound network traffic to resources in the Engine security group, and it must be in the same VPC specified by `VpcId`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Syntax

```
{  
  "StudioId": "string",  
  "Url": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

StudioId (p. 27)

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–D7FFE000–FFFFD800DC00–DBFFFFFFxnt]*

Url (p. 27)

The unique Studio access URL.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [0020–D7FFE000–FFFFD800DC00–DBFFFFFFxnt]*

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

Required: Yes

SessionPolicyArn (p. 29)

The Amazon Resource Name (ARN) for the session policy that will be applied to the user or group. You should specify the ARN for the session policy that you want to apply, not the ARN of your user role. For more information, see [Create an EMR Studio User Role with Session Policies](#).

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [`\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF`\\x\\n\\t]*

Required: Yes

Studioid (p. 29)

The ID of the Amazon EMR Studio to which the user or group will be mapped.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [`\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF`\\x\\n\\t]*

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DeleteSecurityConfiguration

Deletes a security configuration.

Request Syntax

```
{  
  "Name": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

Name (p. 32)

The name of the security configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DeleteStudio

Removes an Amazon EMR Studio from the Studio metadata store.

Request Syntax

```
{  
  "StudioId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

StudioId (p. 34)

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DeleteStudioSessionMapping

Removes a user or group from an Amazon EMR Studio.

Request Syntax

```
{  
  "IdentityId": "string",  
  "IdentityName": "string",  
  "IdentityType": "string",  
  "StudioId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

IdentityId (p. 36)

The globally unique identifier (GUID) of the user or group to remove from the Amazon EMR Studio. For more information, see [UserId](#) and [GroupId](#) in the *AWS SSO Identity Store API Reference*. Either `IdentityName` or `IdentityId` must be specified.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–D7FFE000–FFFFDD800DC00–DBFFDFFFxnt]*

Required: No

IdentityName (p. 36)

The name of the user name or group to remove from the Amazon EMR Studio. For more information, see [UserName](#) and [DisplayName](#) in the *AWS SSO Store API Reference*. Either `IdentityName` or `IdentityId` must be specified.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–D7FFE000–FFFFDD800DC00–DBFFDFFFxnt]*

Required: No

IdentityType (p. 36)

Specifies whether the identity to delete from the Amazon EMR Studio is a user or a group.

Type: String

Valid Values: `USER` | `GROUP`

Required: Yes

StudioId (p. 36)

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)


```

        "AdditionalSlaveSecurityGroups": [ "string" ],
        "Ec2AvailabilityZone": "string",
        "Ec2KeyName": "string",
        "Ec2SubnetId": "string",
        "EmrManagedMasterSecurityGroup": "string",
        "EmrManagedSlaveSecurityGroup": "string",
        "IamInstanceProfile": "string",
        "RequestedEc2AvailabilityZones": [ "string" ],
        "RequestedEc2SubnetIds": [ "string" ],
        "ServiceAccessSecurityGroup": "string"
    },
    "Id": "string",
    "InstanceCollectionType": "string",
    "KerberosAttributes": {
        "ADDomainJoinPassword": "string",
        "ADDomainJoinUser": "string",
        "CrossRealmTrustPrincipalPassword": "string",
        "KdcAdminPassword": "string",
        "Realm": "string"
    },
    "LogEncryptionKmsKeyId": "string",
    "LogUri": "string",
    "MasterPublicDnsName": "string",
    "Name": "string",
    "NormalizedInstanceHours": number,
    "OutpostArn": "string",
    "PlacementGroups": [
        {
            "InstanceRole": "string",
            "PlacementStrategy": "string"
        }
    ],
    "ReleaseLabel": "string",
    "RepoUpgradeOnBoot": "string",
    "RequestedAmiVersion": "string",
    "RunningAmiVersion": "string",
    "ScaleDownBehavior": "string",
    "SecurityConfiguration": "string",
    "ServiceRole": "string",
    "Status": {
        "State": "string",
        "StateChangeReason": {
            "Code": "string",
            "Message": "string"
        }
    },
    "Timeline": {
        "CreationDateTime": number,
        "EndDateTime": number,
        "ReadyDateTime": number
    }
},
"StepConcurrencyLevel": number,
"Tags": [
    {
        "Key": "string",
        "Value": "string"
    }
],
"TerminationProtected": boolean,
"VisibleToAllUsers": boolean
}

```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Cluster (p. 38)

This output contains the details for the requested cluster.

Type: [Cluster](#) (p. 170) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DescribeJobFlows

This API is no longer supported and will eventually be removed. We recommend you use [ListClusters](#) (p. 69), [DescribeCluster](#) (p. 38), [ListSteps](#) (p. 89), [ListInstanceGroups](#) (p. 75) and [ListBootstrapActions](#) (p. 67) instead.

DescribeJobFlows returns a list of job flows that match all of the supplied parameters. The parameters can include a list of job flow IDs, job flow states, and restrictions on job flow creation date and time.

Regardless of supplied parameters, only job flows created within the last two months are returned.

If no parameters are supplied, then job flows matching either of the following criteria are returned:

- Job flows created and completed in the last two weeks
- Job flows created within the last two months that are in one of the following states: RUNNING, WAITING, SHUTTING_DOWN, STARTING

Amazon EMR can return a maximum of 512 job flow descriptions.

Request Syntax

```
{  
  "CreatedAfter": number,  
  "CreatedBefore": number,  
  "JobFlowIds": [ "string" ],  
  "JobFlowStates": [ "string" ]  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

CreatedAfter (p. 41)

Return only job flows created after this date and time.

Type: Timestamp

Required: No

CreatedBefore (p. 41)

Return only job flows created before this date and time.

Type: Timestamp

Required: No

JobFlowIds (p. 41)

Return only job flows whose job flow ID is contained in this list.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

JobFlowStates (p. 41)

Return only job flows whose state is contained in this list.

Type: Array of strings

Valid Values: STARTING | BOOTSTRAPPING | RUNNING | WAITING | SHUTTING_DOWN |
TERMINATED | COMPLETED | FAILED

Required: No

Response Syntax

```
{
  "JobFlows": [
    {
      "AmiVersion": "string",
      "AutoScalingRole": "string",
      "BootstrapActions": [
        {
          "BootstrapActionConfig": {
            "Name": "string",
            "ScriptBootstrapAction": {
              "Args": [ "string" ],
              "Path": "string"
            }
          }
        }
      ],
      "ExecutionStatusDetail": {
        "CreationDateTime": number,
        "EndDateTime": number,
        "LastStateChangeReason": "string",
        "ReadyDateTime": number,
        "StartDateTime": number,
        "State": "string"
      },
      "Instances": {
        "Ec2KeyName": "string",
        "Ec2SubnetId": "string",
        "HadoopVersion": "string",
        "InstanceCount": number,
        "InstanceGroups": [
          {
            "BidPrice": "string",
            "CreationDateTime": number,
            "CustomAmiId": "string",
            "EndDateTime": number,
            "InstanceGroupId": "string",
            "InstanceRequestCount": number,
            "InstanceRole": "string",
            "InstanceRunningCount": number,
            "InstanceType": "string",
            "LastStateChangeReason": "string",
            "Market": "string",
            "Name": "string",
            "ReadyDateTime": number,
            "StartDateTime": number,
            "State": "string"
          }
        ]
      }
    }
  ]
}
```



```

    }
  ],
  "KeepJobFlowAliveWhenNoSteps": boolean,
  "MasterInstanceId": "string",
  "MasterInstanceType": "string",
  "MasterPublicDnsName": "string",
  "NormalizedInstanceHours": number,
  "Placement": {
    "AvailabilityZone": "string",
    "AvailabilityZones": [ "string" ]
  },
  "SlaveInstanceType": "string",
  "TerminationProtected": boolean
},
"JobFlowId": "string",
"JobFlowRole": "string",
"LogEncryptionKmsKeyId": "string",
"LogUri": "string",
"Name": "string",
"ScaleDownBehavior": "string",
"ServiceRole": "string",
"Steps": [
  {
    "ExecutionStatusDetail": {
      "CreationDateTime": number,
      "EndDateTime": number,
      "LastStateChangeReason": "string",
      "StartDateTime": number,
      "State": "string"
    },
    "StepConfig": {
      "ActionOnFailure": "string",
      "HadoopJarStep": {
        "Args": [ "string" ],
        "Jar": "string",
        "MainClass": "string",
        "Properties": [
          {
            "Key": "string",
            "Value": "string"
          }
        ]
      },
      "Name": "string"
    }
  }
],
"SupportedProducts": [ "string" ],
"VisibleToAllUsers": boolean
}
]
}

```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

JobFlows (p. 42)

A list of job flows matching the parameters supplied.

Type: Array of [JobFlowDetail \(p. 231\)](#) objects

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DescribeJobFlows.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.DescribeJobFlows
Content-Length: 62
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130715T220330Z
X-Amz-Content-Sha256: fce83af973f96f173512aca2845c56862b946feb1de0600326f1365b658a0e39
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130715/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target, Signature=29F98a6f44e05ad54fe1e8b3d1a7101ab08dc3ad348995f89c533693cee2bb3b
Accept: */*

{
  "JobFlowIds": ["j-ZKIY4CKQRX72"],
  "DescriptionType": "EXTENDED"
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 634d4142-ed9a-11e2-bbba-b56d7d016ec4
Content-Type: application/x-amz-json-1.1
Content-Length: 1624
Date: Mon, 15 Jul 2013 22:03:31 GMT

{"JobFlows": [{
  "AmiVersion": "2.3.6",
  "BootstrapActions": [],
  "ExecutionStatusDetail": {
    "CreationDateTime": 1.373923429E9,
    "EndDateTime": 1.373923995E9,
    "LastStateChangeReason": "Steps completed",
    "ReadyDateTime": 1.373923754E9,
    "StartDateTime": 1.373923754E9,
    "State": "COMPLETED"
  },
  "Instances": {
```

```
"HadoopVersion": "1.0.3",
"InstanceCount": 1,
"InstanceGroups": [{
  "CreationDateTime": 1.373923429E9,
  "EndDateTime": 1.373923995E9,
  "InstanceGroupId": "ig-3SRUWV3E0NB7K",
  "InstanceRequestCount": 1,
  "InstanceRole": "MASTER",
  "InstanceRunningCount": 0,
  "InstanceType": "m1.small",
  "LastStateChangeReason": "Job flow terminated",
  "Market": "ON_DEMAND",
  "Name": "Master InstanceGroup",
  "ReadyDateTime": 1.37392375E9,
  "StartDateTime": 1.373923646E9,
  "State": "ENDED"
}],
"KeepJobFlowAliveWhenNoSteps": false,
"MasterInstanceId": "i-8c4fbbef",
"MasterInstanceType": "m1.small",
"MasterPublicDnsName": "ec2-107-20-46-140.compute-1.amazonaws.com",
"NormalizedInstanceHours": 1,
"Placement": {"AvailabilityZone": "us-east-1a"},
"TerminationProtected": false
},
"JobFlowId": "j-ZKIY4CKQRX72",
"Name": "Development Job Flow",
"Steps": [{
  "ExecutionStatusDetail": {
    "CreationDateTime": 1.373923429E9,
    "EndDateTime": 1.373923914E9,
    "StartDateTime": 1.373923754E9,
    "State": "COMPLETED"
  },
  "StepConfig": {
    "ActionOnFailure": "CANCEL_AND_WAIT",
    "HadoopJarStep": {
      "Args": [
        "-input",
        "s3://elasticmapreduce/samples/wordcount/input",
        "-output",
        "s3://examples-bucket/example-output",
        "-mapper",
        "s3://elasticmapreduce/samples/wordcount/wordSplitter.py",
        "-reducer",
        "aggregate"
      ],
      "Jar": "/home/hadoop/contrib/streaming/hadoop-streaming.jar",
      "Properties": []
    },
    "Name": "Example Streaming Step"
  }
}],
"SupportedProducts": []
}]}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DescribeNotebookExecution

Provides details of a notebook execution.

Request Syntax

```
{  
  "NotebookExecutionId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

NotebookExecutionId (p. 47)

The unique identifier of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Syntax

```
{  
  "NotebookExecution": {  
    "Arn": "string",  
    "EditorId": "string",  
    "EndTime": number,  
    "ExecutionEngine": {  
      "Id": "string",  
      "MasterInstanceSecurityGroupId": "string",  
      "Type": "string"  
    },  
    "LastStateChangeReason": "string",  
    "NotebookExecutionId": "string",  
    "NotebookExecutionName": "string",  
    "NotebookInstanceSecurityGroupId": "string",  
    "NotebookParams": "string",  
    "OutputNotebookURI": "string",  
    "StartTime": number,  
    "Status": "string",  
    "Tags": [  
      {  
        "Key": "string",  
        "Value": "string"  
      }  
    ]  
  }  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NotebookExecution (p. 47)

Properties of the notebook execution.

Type: [NotebookExecution](#) (p. 249) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DescribeReleaseLabel

Provides EMR release label details, such as releases available the region where the API request is run, and the available applications for a specific EMR release label. Can also list EMR release versions that support a specified version of Spark.

Request Syntax

```
{
  "MaxResults": number,
  "NextToken": "string",
  "ReleaseLabel": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

MaxResults (p. 49)

Reserved for future use. Currently set to null.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

NextToken (p. 49)

The pagination token. Reserved for future use. Currently set to null.

Type: String

Required: No

ReleaseLabel (p. 49)

The target release label to be described.

Type: String

Required: No

Response Syntax

```
{
  "Applications": [
    {
      "Name": "string",
      "Version": "string"
    }
  ],
  "NextToken": "string",
}
```

```
"ReleaseLabel": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Applications (p. 49)

The list of applications available for the target release label. `Name` is the name of the application. `Version` is the concise version of the application.

Type: Array of [SimplifiedApplication](#) (p. 274) objects

NextToken (p. 49)

The pagination token. Reserved for future use. Currently set to null.

Type: String

ReleaseLabel (p. 49)

The target release label described in the response.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

DescribeSecurityConfiguration

Provides the details of a security configuration by returning the configuration JSON.

Request Syntax

```
{  
  "Name": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 297\)](#).

The request accepts the following data in JSON format.

Name (p. 52)

The name of the security configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Syntax

```
{  
  "CreationDateTime": number,  
  "Name": "string",  
  "SecurityConfiguration": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

CreationDateTime (p. 52)

The date and time the security configuration was created

Type: Timestamp

Name (p. 52)

The name of the security configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\\u0020-\\uD7FF\\uE000-\\uFFFF\\uD800\\uDC00-\\uDBFF\\uDFFF\\x\\n\\t]*

SecurityConfiguration (p. 52)

The security configuration details in JSON format.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DescribeStep

Provides more detail about the cluster step.

Request Syntax

```
{  
  "ClusterId": "string",  
  "StepId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 54)

The identifier of the cluster with steps to describe.

Type: String

Required: Yes

StepId (p. 54)

The identifier of the step to describe.

Type: String

Required: Yes

Response Syntax

```
{  
  "Step": {  
    "ActionOnFailure": "string",  
    "Config": {  
      "Args": [ "string" ],  
      "Jar": "string",  
      "MainClass": "string",  
      "Properties": {  
        "string" : "string"  
      }  
    },  
    "Id": "string",  
    "Name": "string",  
    "Status": {  
      "FailureDetails": {  
        "LogFile": "string",  
        "Message": "string",  
        "Reason": "string"  
      },  
      "State": "string",  
      "StateChangeReason": {
```

```
    "Code": "string",
    "Message": "string"
  },
  "Timeline": {
    "CreationDateTime": number,
    "EndDateTime": number,
    "StartDateTime": number
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Step (p. 54)

The step details for the requested step identifier.

Type: [Step \(p. 277\)](#) object

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

DescribeStudio

Returns details for the specified Amazon EMR Studio including ID, Name, VPC, Studio access URL, and so on.

Request Syntax

```
{  
  "StudioId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

StudioId (p. 56)

The Amazon EMR Studio ID.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–0D7FF000–0FFFD0D8000DC00–0DBFF0DFFF0r0n0t]*

Required: Yes

Response Syntax

```
{  
  "Studio": {  
    "AuthMode": "string",  
    "CreationTime": number,  
    "DefaultS3Location": "string",  
    "Description": "string",  
    "EngineSecurityGroupId": "string",  
    "IdpAuthUrl": "string",  
    "IdpRelayStateParameterName": "string",  
    "Name": "string",  
    "ServiceRole": "string",  
    "StudioArn": "string",  
    "StudioId": "string",  
    "SubnetIds": [ "string" ],  
    "Tags": [  
      {  
        "Key": "string",  
        "Value": "string"  
      }  
    ],  
    "Url": "string",  
    "UserRole": "string",  
    "VpcId": "string",  
    "WorkspaceSecurityGroupId": "string"  
  }  
}
```

```
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Studio (p. 56)

The Amazon EMR Studio details.

Type: [Studio](#) (p. 288) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetAutoTerminationPolicy

Returns the auto-termination policy for an Amazon EMR cluster.

Request Syntax

```
{  
  "ClusterId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 58)

Specifies the ID of the Amazon EMR cluster for which the auto-termination policy will be fetched.

Type: String

Required: Yes

Response Syntax

```
{  
  "AutoTerminationPolicy": {  
    "IdleTimeout": number  
  }  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

AutoTerminationPolicy (p. 58)

Specifies the auto-termination policy that is attached to an Amazon EMR cluster.

Type: [AutoTerminationPolicy](#) (p. 162) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetBlockPublicAccessConfiguration

Returns the Amazon EMR block public access configuration for your AWS account in the current Region. For more information see [Configure Block Public Access for Amazon EMR](#) in the *Amazon EMR Management Guide*.

Response Syntax

```
{
  "BlockPublicAccessConfiguration": {
    "BlockPublicSecurityGroupRules": boolean,
    "PermittedPublicSecurityGroupRuleRanges": [
      {
        "MaxRange": number,
        "MinRange": number
      }
    ]
  },
  "BlockPublicAccessConfigurationMetadata": {
    "CreatedByArn": "string",
    "CreationDateTime": number
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

BlockPublicAccessConfiguration (p. 60)

A configuration for Amazon EMR block public access. The configuration applies to all clusters created in your account for the current Region. The configuration specifies whether block public access is enabled. If block public access is enabled, security groups associated with the cluster cannot have rules that allow inbound traffic from 0.0.0.0/0 or ::/0 on a port, unless the port is specified as an exception using `PermittedPublicSecurityGroupRuleRanges` in the `BlockPublicAccessConfiguration`. By default, Port 22 (SSH) is an exception, and public access is allowed on this port. You can change this by updating the block public access configuration to remove the exception.

Note

For accounts that created clusters in a Region before November 25, 2019, block public access is disabled by default in that Region. To use this feature, you must manually enable and configure it. For accounts that did not create an EMR cluster in a Region before this date, block public access is enabled by default in that Region.

Type: [BlockPublicAccessConfiguration](#) (p. 163) object

BlockPublicAccessConfigurationMetadata (p. 60)

Properties that describe the AWS principal that created the `BlockPublicAccessConfiguration` using the `PutBlockPublicAccessConfiguration` action as well as the date and time that the configuration was created. Each time a configuration for block public access is updated, Amazon EMR updates this metadata.

Type: [BlockPublicAccessConfigurationMetadata](#) (p. 164) object

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetManagedScalingPolicy

Fetches the attached managed scaling policy for an Amazon EMR cluster.

Request Syntax

```
{  
  "ClusterId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 62)

Specifies the ID of the cluster for which the managed scaling policy will be fetched.

Type: String

Required: Yes

Response Syntax

```
{  
  "ManagedScalingPolicy": {  
    "ComputeLimits": {  
      "MaximumCapacityUnits": number,  
      "MaximumCoreCapacityUnits": number,  
      "MaximumOnDemandCapacityUnits": number,  
      "MinimumCapacityUnits": number,  
      "UnitType": "string"  
    }  
  }  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ManagedScalingPolicy (p. 62)

Specifies the managed scaling policy that is attached to an Amazon EMR cluster.

Type: [ManagedScalingPolicy](#) (p. 247) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

GetStudioSessionMapping

Fetches mapping details for the specified Amazon EMR Studio and identity (user or group).

Request Syntax

```
{  
  "IdentityId": "string",  
  "IdentityName": "string",  
  "IdentityType": "string",  
  "StudioId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

IdentityId (p. 64)

The globally unique identifier (GUID) of the user or group. For more information, see [UserId](#) and [GroupId](#) in the *AWS SSO Identity Store API Reference*. Either `IdentityName` or `IdentityId` must be specified.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

IdentityName (p. 64)

The name of the user or group to fetch. For more information, see [UserName](#) and [DisplayName](#) in the *AWS SSO Identity Store API Reference*. Either `IdentityName` or `IdentityId` must be specified.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

IdentityType (p. 64)

Specifies whether the identity to fetch is a user or a group.

Type: String

Valid Values: `USER` | `GROUP`

Required: Yes

StudioId (p. 64)

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Syntax

```
{
  "SessionMapping": {
    "CreationTime": number,
    "IdentityId": "string",
    "IdentityName": "string",
    "IdentityType": "string",
    "LastModifiedTime": number,
    "SessionPolicyArn": "string",
    "StudioId": "string"
  }
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

SessionMapping (p. 65)

The session mapping details for the specified Amazon EMR Studio and identity, including session policy ARN and creation time.

Type: [SessionMappingDetail](#) (p. 267) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListBootstrapActions

Provides information about the bootstrap actions associated with a cluster.

Request Syntax

```
{  
  "ClusterId": "string",  
  "Marker": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 67)

The cluster identifier for the bootstrap actions to list.

Type: String

Required: Yes

Marker (p. 67)

The pagination token that indicates the next set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{  
  "BootstrapActions": [  
    {  
      "Args": [ "string" ],  
      "Name": "string",  
      "ScriptPath": "string"  
    }  
  ],  
  "Marker": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

BootstrapActions (p. 67)

The bootstrap actions associated with the cluster.

Type: Array of [Command \(p. 181\)](#) objects

Marker (p. 67)

The pagination token that indicates the next set of results to retrieve.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListClusters

Provides the status of all clusters visible to this AWS account. Allows you to filter the list of clusters based on certain criteria; for example, filtering by cluster creation date and time or by status. This call returns a maximum of 50 clusters in unsorted order per call, but returns a marker to track the paging of the cluster list across multiple ListClusters calls.

Request Syntax

```
{
  "ClusterStates": [ "string" ],
  "CreatedAfter": number,
  "CreatedBefore": number,
  "Marker": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterStates (p. 69)

The cluster state filters to apply when listing clusters. Clusters that change state while this action runs may be not be returned as expected in the list of clusters.

Type: Array of strings

Valid Values: STARTING | BOOTSTRAPPING | RUNNING | WAITING | TERMINATING | TERMINATED | TERMINATED_WITH_ERRORS

Required: No

CreatedAfter (p. 69)

The creation date and time beginning value filter for listing clusters.

Type: Timestamp

Required: No

CreatedBefore (p. 69)

The creation date and time end value filter for listing clusters.

Type: Timestamp

Required: No

Marker (p. 69)

The pagination token that indicates the next set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{
  "Clusters": [
    {
      "ClusterArn": "string",
      "Id": "string",
      "Name": "string",
      "NormalizedInstanceHours": number,
      "OutpostArn": "string",
      "Status": {
        "State": "string",
        "StateChangeReason": {
          "Code": "string",
          "Message": "string"
        },
        "Timeline": {
          "CreationDateTime": number,
          "EndDateTime": number,
          "ReadyDateTime": number
        }
      },
    }
  ],
  "Marker": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Clusters (p. 70)

The list of clusters for the account based on the given filters.

Type: Array of [ClusterSummary](#) (p. 178) objects

Marker (p. 70)

The pagination token that indicates the next set of results to retrieve.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListInstanceFleets

Lists all available details about the instance fleets in a cluster.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Request Syntax

```
{  
  "ClusterId": "string",  
  "Marker": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 72)

The unique identifier of the cluster.

Type: String

Required: Yes

Marker (p. 72)

The pagination token that indicates the next set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{  
  "InstanceFleets": [  
    {  
      "Id": "string",  
      "InstanceFleetType": "string",  
      "InstanceTypeSpecifications": [  
        {  
          "BidPrice": "string",  
          "BidPriceAsPercentageOfOnDemandPrice": number,  
          "Configurations": [  
            {  
              "Classification": "string",  
              "Configurations": [  
                "Configuration"  
              ],  
              "Properties": {  
                "string" : "string"  
              }  
            }  
          ]  
        }  
      ]  
    }  
  ]  
}
```

```

    ],
    "CustomAmiId": "string",
    "EbsBlockDevices": [
      {
        "Device": "string",
        "VolumeSpecification": {
          "Iops": number,
          "SizeInGB": number,
          "VolumeType": "string"
        }
      }
    ],
    "EbsOptimized": boolean,
    "InstanceType": "string",
    "WeightedCapacity": number
  }
],
"LaunchSpecifications": {
  "OnDemandSpecification": {
    "AllocationStrategy": "string",
    "CapacityReservationOptions": {
      "CapacityReservationPreference": "string",
      "CapacityReservationResourceGroupArn": "string",
      "UsageStrategy": "string"
    }
  },
  "SpotSpecification": {
    "AllocationStrategy": "string",
    "BlockDurationMinutes": number,
    "TimeoutAction": "string",
    "TimeoutDurationMinutes": number
  }
},
"Name": "string",
"ProvisionedOnDemandCapacity": number,
"ProvisionedSpotCapacity": number,
"Status": {
  "State": "string",
  "StateChangeReason": {
    "Code": "string",
    "Message": "string"
  }
},
"Timeline": {
  "CreationDateTime": number,
  "EndDateTime": number,
  "ReadyDateTime": number
}
},
"TargetOnDemandCapacity": number,
"TargetSpotCapacity": number
}
],
"Marker": "string"
}

```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

InstanceFleets (p. 72)

The list of instance fleets for the cluster and given filters.

Type: Array of [InstanceFleet](#) (p. 199) objects

Marker (p. 72)

The pagination token that indicates the next set of results to retrieve.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListInstanceGroups

Provides all available details about the instance groups in a cluster.

Request Syntax

```
{  
  "ClusterId": "string",  
  "Marker": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 75)

The identifier of the cluster for which to list the instance groups.

Type: String

Required: Yes

Marker (p. 75)

The pagination token that indicates the next set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{  
  "InstanceGroups": [  
    {  
      "AutoScalingPolicy": {  
        "Constraints": {  
          "MaxCapacity": number,  
          "MinCapacity": number  
        },  
        "Rules": [  
          {  
            "Action": {  
              "Market": "string",  
              "SimpleScalingPolicyConfiguration": {  
                "AdjustmentType": "string",  
                "CoolDown": number,  
                "ScalingAdjustment": number  
              }  
            },  
            "Description": "string",  
            "Name": "string",  
            "Trigger": {  
              "CloudWatchAlarmDefinition": {
```

```
        "ComparisonOperator": "string",
        "Dimensions": [
            {
                "Key": "string",
                "Value": "string"
            }
        ],
        "EvaluationPeriods": number,
        "MetricName": "string",
        "Namespace": "string",
        "Period": number,
        "Statistic": "string",
        "Threshold": number,
        "Unit": "string"
    }
}
},
"Status": {
    "State": "string",
    "StateChangeReason": {
        "Code": "string",
        "Message": "string"
    }
}
},
"BidPrice": "string",
"Configurations": [
    {
        "Classification": "string",
        "Configurations": [
            "Configuration"
        ],
        "Properties": {
            "string" : "string"
        }
    }
],
"ConfigurationsVersion": number,
"CustomAmiId": "string",
"EbsBlockDevices": [
    {
        "Device": "string",
        "VolumeSpecification": {
            "Iops": number,
            "SizeInGB": number,
            "VolumeType": "string"
        }
    }
],
"EbsOptimized": boolean,
"Id": "string",
"InstanceGroupType": "string",
"InstanceType": "string",
"LastSuccessfullyAppliedConfigurations": [
    {
        "Classification": "string",
        "Configurations": [
            "Configuration"
        ],
        "Properties": {
            "string" : "string"
        }
    }
],
"LastSuccessfullyAppliedConfigurationsVersion": number,
```

```
    "Market": "string",
    "Name": "string",
    "RequestedInstanceCount": number,
    "RunningInstanceCount": number,
    "ShrinkPolicy": {
      "DecommissionTimeout": number,
      "InstanceResizePolicy": {
        "InstancesToProtect": [ "string" ],
        "InstancesToTerminate": [ "string" ],
        "InstanceTerminationTimeout": number
      }
    },
    "Status": {
      "State": "string",
      "StateChangeReason": {
        "Code": "string",
        "Message": "string"
      },
      "Timeline": {
        "CreationDateTime": number,
        "EndDateTime": number,
        "ReadyDateTime": number
      }
    }
  },
  "Marker": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

InstanceGroups (p. 75)

The list of instance groups for the cluster and given filters.

Type: Array of [InstanceGroup](#) (p. 210) objects

Marker (p. 75)

The pagination token that indicates the next set of results to retrieve.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListInstances

Provides information for all active EC2 instances and EC2 instances terminated in the last 30 days, up to a maximum of 2,000. EC2 instances in any of the following states are considered active: AWAITING_FULFILLMENT, PROVISIONING, BOOTSTRAPPING, RUNNING.

Request Syntax

```
{  
  "ClusterId": "string",  
  "InstanceFleetId": "string",  
  "InstanceFleetType": "string",  
  "InstanceGroupId": "string",  
  "InstanceGroupTypes": [ "string" ],  
  "InstanceStates": [ "string" ],  
  "Marker": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 79)

The identifier of the cluster for which to list the instances.

Type: String

Required: Yes

InstanceFleetId (p. 79)

The unique identifier of the instance fleet.

Type: String

Required: No

InstanceFleetType (p. 79)

The node type of the instance fleet. For example MASTER, CORE, or TASK.

Type: String

Valid Values: MASTER | CORE | TASK

Required: No

InstanceGroupId (p. 79)

The identifier of the instance group for which to list the instances.

Type: String

Required: No

InstanceGroupTypes (p. 79)

The type of instance group for which to list the instances.

Type: Array of strings

Valid Values: MASTER | CORE | TASK

Required: No

InstanceStates (p. 79)

A list of instance states that will filter the instances returned with this request.

Type: Array of strings

Valid Values: AWAITING_FULFILLMENT | PROVISIONING | BOOTSTRAPPING | RUNNING | TERMINATED

Required: No

Marker (p. 79)

The pagination token that indicates the next set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{
  "Instances": [
    {
      "EbsVolumes": [
        {
          "Device": "string",
          "VolumeId": "string"
        }
      ],
      "Ec2InstanceId": "string",
      "Id": "string",
      "InstanceFleetId": "string",
      "InstanceGroupId": "string",
      "InstanceType": "string",
      "Market": "string",
      "PrivateDnsName": "string",
      "PrivateIpAddress": "string",
      "PublicDnsName": "string",
      "PublicIpAddress": "string",
      "Status": {
        "State": "string",
        "StateChangeReason": {
          "Code": "string",
          "Message": "string"
        }
      },
      "Timeline": {
        "CreationDateTime": number,
        "EndDateTime": number,
        "ReadyDateTime": number
      }
    }
  ],
  "Marker": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Instances (p. 80)

The list of instances for the cluster and given filters.

Type: Array of [Instance](#) (p. 197) objects

Marker (p. 80)

The pagination token that indicates the next set of results to retrieve.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListNotebookExecutions

Provides summaries of all notebook executions. You can filter the list based on multiple criteria such as status, time range, and editor id. Returns a maximum of 50 notebook executions and a marker to track the paging of a longer notebook execution list across multiple `ListNotebookExecution` calls.

Request Syntax

```
{  
  "EditorId": "string",  
  "From": number,  
  "Marker": "string",  
  "Status": "string",  
  "To": number  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

EditorId (p. 82)

The unique ID of the editor associated with the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

From (p. 82)

The beginning of time range filter for listing notebook executions. The default is the timestamp of 30 days ago.

Type: Timestamp

Required: No

Marker (p. 82)

The pagination token, returned by a previous `ListNotebookExecutions` call, that indicates the start of the list for this `ListNotebookExecutions` call.

Type: String

Required: No

Status (p. 82)

The status filter for listing notebook executions.

- `START_PENDING` indicates that the cluster has received the execution request but execution has not begun.
- `STARTING` indicates that the execution is starting on the cluster.

- **RUNNING** indicates that the execution is being processed by the cluster.
- **FINISHING** indicates that execution processing is in the final stages.
- **FINISHED** indicates that the execution has completed without error.
- **FAILING** indicates that the execution is failing and will not finish successfully.
- **FAILED** indicates that the execution failed.
- **STOP_PENDING** indicates that the cluster has received a `StopNotebookExecution` request and the stop is pending.
- **STOPPING** indicates that the cluster is in the process of stopping the execution as a result of a `StopNotebookExecution` request.
- **STOPPED** indicates that the execution stopped because of a `StopNotebookExecution` request.

Type: String

Valid Values: `START_PENDING` | `STARTING` | `RUNNING` | `FINISHING` | `FINISHED` | `FAILING` | `FAILED` | `STOP_PENDING` | `STOPPING` | `STOPPED`

Required: No

To (p. 82)

The end of time range filter for listing notebook executions. The default is the current timestamp.

Type: Timestamp

Required: No

Response Syntax

```
{
  "Marker": "string",
  "NotebookExecutions": [
    {
      "EditorId": "string",
      "EndTime": number,
      "NotebookExecutionId": "string",
      "NotebookExecutionName": "string",
      "StartTime": number,
      "Status": "string"
    }
  ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Marker (p. 83)

A pagination token that a subsequent `ListNotebookExecutions` can use to determine the next set of results to retrieve.

Type: String

NotebookExecutions (p. 83)

A list of notebook executions.

Type: Array of [NotebookExecutionSummary](#) (p. 252) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListReleaseLabels

Retrieves release labels of EMR services in the region where the API is called.

Request Syntax

```
{
  "Filters": {
    "Application": "string",
    "Prefix": "string"
  },
  "MaxResults": number,
  "NextToken": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

Filters (p. 85)

Filters the results of the request. `Prefix` specifies the prefix of release labels to return. `Application` specifies the application (with/without version) of release labels to return.

Type: [ReleaseLabelFilter](#) (p. 260) object

Required: No

MaxResults (p. 85)

Defines the maximum number of release labels to return in a single response. The default is 100.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

NextToken (p. 85)

Specifies the next page of results. If `NextToken` is not specified, which is usually the case for the first request of `ListReleaseLabels`, the first page of results are determined by other filtering parameters or by the latest version. The `ListReleaseLabels` request fails if the identity (AWS account ID) and all filtering parameters are different from the original request, or if the `NextToken` is expired or tampered with.

Type: String

Required: No

Response Syntax

```
{
  "NextToken": "string",
}
```

```
"ReleaseLabels": [ "string" ]  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NextToken (p. 85)

Used to paginate the next page of results if specified in the next `ListReleaseLabels` request.

Type: String

ReleaseLabels (p. 85)

The returned release labels.

Type: Array of strings

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListSecurityConfigurations

Lists all the security configurations visible to this account, providing their creation dates and times, and their names. This call returns a maximum of 50 clusters per call, but returns a marker to track the paging of the cluster list across multiple ListSecurityConfigurations calls.

Request Syntax

```
{  
  "Marker": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

Marker (p. 87)

The pagination token that indicates the set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{  
  "Marker": "string",  
  "SecurityConfigurations": [  
    {  
      "CreationDateTime": number,  
      "Name": "string"  
    }  
  ]  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Marker (p. 87)

A pagination token that indicates the next set of results to retrieve. Include the marker in the next ListSecurityConfiguration call to retrieve the next page of results, if required.

Type: String

SecurityConfigurations (p. 87)

The creation date and time, and name, of each security configuration.

Type: Array of [SecurityConfigurationSummary](#) (p. 266) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListSteps

Provides a list of steps for the cluster in reverse order unless you specify `stepIds` with the request or filter by `StepStates`. You can specify a maximum of 10 `stepIds`. The AWS CLI automatically paginates results to return a list greater than 50 steps. To return more than 50 steps using the AWS CLI, specify a `Marker`, which is a pagination token that indicates the next set of steps to retrieve.

Request Syntax

```
{  
  "ClusterId": "string",  
  "Marker": "string",  
  "StepIds": [ "string" ],  
  "StepStates": [ "string" ]  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 89)

The identifier of the cluster for which to list the steps.

Type: String

Required: Yes

Marker (p. 89)

The maximum number of steps that a single `ListSteps` action returns is 50. To return a longer list of steps, use multiple `ListSteps` actions along with the `Marker` parameter, which is a pagination token that indicates the next set of results to retrieve.

Type: String

Required: No

StepIds (p. 89)

The filter to limit the step list based on the identifier of the steps. You can specify a maximum of ten Step IDs. The character constraint applies to the overall length of the array.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

StepStates (p. 89)

The filter to limit the step list based on certain states.

Type: Array of strings

Valid Values: PENDING | CANCEL_PENDING | RUNNING | COMPLETED | CANCELLED | FAILED | INTERRUPTED

Required: No

Response Syntax

```
{
  "Marker": "string",
  "Steps": [
    {
      "ActionOnFailure": "string",
      "Config": {
        "Args": [ "string" ],
        "Jar": "string",
        "MainClass": "string",
        "Properties": {
          "string" : "string"
        }
      },
      "Id": "string",
      "Name": "string",
      "Status": {
        "FailureDetails": {
          "LogFile": "string",
          "Message": "string",
          "Reason": "string"
        },
        "State": "string",
        "StateChangeReason": {
          "Code": "string",
          "Message": "string"
        },
        "Timeline": {
          "CreationDateTime": number,
          "EndDateTime": number,
          "StartDateTime": number
        }
      }
    }
  ]
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Marker (p. 90)

The maximum number of steps that a single `ListSteps` action returns is 50. To return a longer list of steps, use multiple `ListSteps` actions along with the `Marker` parameter, which is a pagination token that indicates the next set of results to retrieve.

Type: String

Steps (p. 90)

The filtered list of steps for the cluster.

Type: Array of [StepSummary](#) (p. 286) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListStudios

Returns a list of all Amazon EMR Studios associated with the AWS account. The list includes details such as ID, Studio Access URL, and creation time for each Studio.

Request Syntax

```
{  
  "Marker": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 297\)](#).

The request accepts the following data in JSON format.

Marker (p. 92)

The pagination token that indicates the set of results to retrieve.

Type: String

Required: No

Response Syntax

```
{  
  "Marker": "string",  
  "Studios": [  
    {  
      "AuthMode": "string",  
      "CreationTime": number,  
      "Description": "string",  
      "Name": "string",  
      "StudioId": "string",  
      "Url": "string",  
      "VpcId": "string"  
    }  
  ]  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Marker (p. 92)

The pagination token that indicates the next set of results to retrieve.

Type: String

[Studios \(p. 92\)](#)

The list of Studio summary objects.

Type: Array of [StudioSummary \(p. 292\)](#) objects

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListStudioSessionMappings

Returns a list of all user or group session mappings for the Amazon EMR Studio specified by `StudioId`.

Request Syntax

```
{  
  "IdentityType": "string",  
  "Marker": "string",  
  "StudioId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

IdentityType (p. 94)

Specifies whether to return session mappings for users or groups. If not specified, the results include session mapping details for both users and groups.

Type: String

Valid Values: `USER` | `GROUP`

Required: No

Marker (p. 94)

The pagination token that indicates the set of results to retrieve.

Type: String

Required: No

StudioId (p. 94)

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

Response Syntax

```
{  
  "Marker": "string",  
  "SessionMappings": [  
    {  
      "CreationTime": number,  

```

```
    "IdentityId": "string",  
    "IdentityName": "string",  
    "IdentityType": "string",  
    "SessionPolicyArn": "string",  
    "StudioId": "string"  
  }  
]  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

Marker (p. 94)

The pagination token that indicates the next set of results to retrieve.

Type: String

SessionMappings (p. 94)

A list of session mapping summary objects. Each object includes session mapping details such as creation time, identity type (user or group), and Amazon EMR Studio ID.

Type: Array of [SessionMappingSummary](#) (p. 269) objects

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ModifyCluster

Modifies the number of steps that can be executed concurrently for the cluster specified using ClusterID.

Request Syntax

```
{
  "ClusterId": "string",
  "StepConcurrencyLevel": number
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 97)

The unique identifier of the cluster.

Type: String

Required: Yes

StepConcurrencyLevel (p. 97)

The number of steps that can be executed concurrently. You can specify a minimum of 1 step and a maximum of 256 steps. We recommend that you do not change this parameter while steps are running or the `ActionOnFailure` setting may not behave as expected. For more information see [Step:ActionOnFailure](#) (p. 277).

Type: Integer

Required: No

Response Syntax

```
{
  "StepConcurrencyLevel": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

StepConcurrencyLevel (p. 97)

The number of steps that can be executed concurrently.

Type: Integer

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ModifyInstanceFleet

Modifies the target On-Demand and target Spot capacities for the instance fleet with the specified InstanceFleetID within the cluster specified using ClusterID. The call either succeeds or fails atomically.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Request Syntax

```
{
  "ClusterId": "string",
  "InstanceFleet": {
    "InstanceFleetId": "string",
    "TargetOnDemandCapacity": number,
    "TargetSpotCapacity": number
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 297\)](#).

The request accepts the following data in JSON format.

ClusterId (p. 99)

The unique identifier of the cluster.

Type: String

Required: Yes

InstanceFleet (p. 99)

The configuration parameters of the instance fleet.

Type: [InstanceFleetModifyConfig \(p. 204\)](#) object

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ModifyInstanceGroups

ModifyInstanceGroups modifies the number of nodes and configuration settings of an instance group. The input parameters include the new target instance count for the group and the instance group ID. The call will either succeed or fail atomically.

Request Syntax

```
{
  "ClusterId": "string",
  "InstanceGroups": [
    {
      "Configurations": [
        {
          "Classification": "string",
          "Configurations": [
            "Configuration"
          ],
          "Properties": {
            "string": "string"
          }
        }
      ],
      "EC2InstanceIdsToTerminate": [ "string" ],
      "InstanceCount": number,
      "InstanceGroupId": "string",
      "ShrinkPolicy": {
        "DecommissionTimeout": number,
        "InstanceResizePolicy": {
          "InstancesToProtect": [ "string" ],
          "InstancesToTerminate": [ "string" ],
          "InstanceTerminationTimeout": number
        }
      }
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 101)

The ID of the cluster to which the instance group belongs.

Type: String

Required: No

InstanceGroups (p. 101)

Instance groups to change.

Type: Array of [InstanceGroupModifyConfig](#) (p. 218) objects

Required: No

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of `ModifyInstanceGroups`.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.ModifyInstanceGroups
Content-Length: 77
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130716T205843Z
X-Amz-Content-Sha256: bb1af3d0c6c6a1a09f21ccd7f04a0e2e6c9ce5b5810b0f6777560fe4f81bda8c
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130716/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target,
  Signature=17bbbb4448a1f47a14d5657445e9de5cadf16bed58b850585f80865882133b33
Accept: */*

{"InstanceGroups": [{
  "InstanceGroupId": "ig-1S8NWT31S2OVG",
  "InstanceCount": 5
}]}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 80a74808-ee5a-11e2-90db-69a5154aeb8d
Content-Type: application/x-amz-json-1.1
Content-Length: 0
Date: Tue, 16 Jul 2013 20:58:44 GMT
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

PutAutoScalingPolicy

Creates or updates an automatic scaling policy for a core instance group or task instance group in an Amazon EMR cluster. The automatic scaling policy defines how an instance group dynamically adds and terminates EC2 instances in response to the value of a CloudWatch metric.

Request Syntax

```
{
  "AutoScalingPolicy": {
    "Constraints": {
      "MaxCapacity": number,
      "MinCapacity": number
    },
    "Rules": [
      {
        "Action": {
          "Market": "string",
          "SimpleScalingPolicyConfiguration": {
            "AdjustmentType": "string",
            "CoolDown": number,
            "ScalingAdjustment": number
          }
        },
        "Description": "string",
        "Name": "string",
        "Trigger": {
          "CloudWatchAlarmDefinition": {
            "ComparisonOperator": "string",
            "Dimensions": [
              {
                "Key": "string",
                "Value": "string"
              }
            ],
            "EvaluationPeriods": number,
            "MetricName": "string",
            "Namespace": "string",
            "Period": number,
            "Statistic": "string",
            "Threshold": number,
            "Unit": "string"
          }
        }
      }
    ]
  },
  "ClusterId": "string",
  "InstanceGroupId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

AutoScalingPolicy (p. 104)

Specifies the definition of the automatic scaling policy.

Type: [AutoScalingPolicy](#) (p. 158) object

Required: Yes

ClusterId (p. 104)

Specifies the ID of a cluster. The instance group to which the automatic scaling policy is applied is within this cluster.

Type: String

Required: Yes

InstanceGroupId (p. 104)

Specifies the ID of the instance group to which the automatic scaling policy is applied.

Type: String

Required: Yes

Response Syntax

```
{
  "AutoScalingPolicy": {
    "Constraints": {
      "MaxCapacity": number,
      "MinCapacity": number
    },
    "Rules": [
      {
        "Action": {
          "Market": "string",
          "SimpleScalingPolicyConfiguration": {
            "AdjustmentType": "string",
            "CoolDown": number,
            "ScalingAdjustment": number
          }
        },
        "Description": "string",
        "Name": "string",
        "Trigger": {
          "CloudWatchAlarmDefinition": {
            "ComparisonOperator": "string",
            "Dimensions": [
              {
                "Key": "string",
                "Value": "string"
              }
            ],
            "EvaluationPeriods": number,
            "MetricName": "string",
            "Namespace": "string",
            "Period": number,
            "Statistic": "string",
            "Threshold": number,
            "Unit": "string"
          }
        }
      }
    ],
    "Status": {
      "State": "string",
```

```
    "StateChangeReason": {  
      "Code": "string",  
      "Message": "string"  
    }  
  },  
  "ClusterArn": "string",  
  "ClusterId": "string",  
  "InstanceGroupId": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

AutoScalingPolicy (p. 105)

The automatic scaling policy definition.

Type: [AutoScalingPolicyDescription](#) (p. 159) object

ClusterArn (p. 105)

The Amazon Resource Name (ARN) of the cluster.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

ClusterId (p. 105)

Specifies the ID of a cluster. The instance group to which the automatic scaling policy is applied is within this cluster.

Type: String

InstanceGroupId (p. 105)

Specifies the ID of the instance group to which the scaling policy is applied.

Type: String

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

PutAutoTerminationPolicy

Note

Auto-termination is supported in Amazon EMR versions 5.30.0 and 6.1.0 and later. For more information, see [Using an auto-termination policy](#).

Creates or updates an auto-termination policy for an Amazon EMR cluster. An auto-termination policy defines the amount of idle time in seconds after which a cluster automatically terminates. For alternative cluster termination options, see [Control cluster termination](#).

Request Syntax

```
{
  "AutoTerminationPolicy": {
    "IdleTimeout": number
  },
  "ClusterId": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

AutoTerminationPolicy (p. 108)

Specifies the auto-termination policy to attach to the cluster.

Type: [AutoTerminationPolicy](#) (p. 162) object

Required: No

ClusterId (p. 108)

Specifies the ID of the Amazon EMR cluster to which the auto-termination policy will be attached.

Type: String

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

PutBlockPublicAccessConfiguration

Creates or updates an Amazon EMR block public access configuration for your AWS account in the current Region. For more information see [Configure Block Public Access for Amazon EMR](#) in the *Amazon EMR Management Guide*.

Request Syntax

```
{
  "BlockPublicAccessConfiguration": {
    "BlockPublicSecurityGroupRules": boolean,
    "PermittedPublicSecurityGroupRuleRanges": [
      {
        "MaxRange": number,
        "MinRange": number
      }
    ]
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

BlockPublicAccessConfiguration (p. 110)

A configuration for Amazon EMR block public access. The configuration applies to all clusters created in your account for the current Region. The configuration specifies whether block public access is enabled. If block public access is enabled, security groups associated with the cluster cannot have rules that allow inbound traffic from 0.0.0.0/0 or ::/0 on a port, unless the port is specified as an exception using `PermittedPublicSecurityGroupRuleRanges` in the `BlockPublicAccessConfiguration`. By default, Port 22 (SSH) is an exception, and public access is allowed on this port. You can change this by updating `BlockPublicSecurityGroupRules` to remove the exception.

Note

For accounts that created clusters in a Region before November 25, 2019, block public access is disabled by default in that Region. To use this feature, you must manually enable and configure it. For accounts that did not create an EMR cluster in a Region before this date, block public access is enabled by default in that Region.

Type: [BlockPublicAccessConfiguration](#) (p. 163) object

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

PutManagedScalingPolicy

Creates or updates a managed scaling policy for an Amazon EMR cluster. The managed scaling policy defines the limits for resources, such as EC2 instances that can be added or terminated from a cluster. The policy only applies to the core and task nodes. The master node cannot be scaled after initial configuration.

Request Syntax

```
{
  "ClusterId": "string",
  "ManagedScalingPolicy": {
    "ComputeLimits": {
      "MaximumCapacityUnits": number,
      "MaximumCoreCapacityUnits": number,
      "MaximumOnDemandCapacityUnits": number,
      "MinimumCapacityUnits": number,
      "UnitType": "string"
    }
  }
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 112)

Specifies the ID of an EMR cluster where the managed scaling policy is attached.

Type: String

Required: Yes

ManagedScalingPolicy (p. 112)

Specifies the constraints for the managed scaling policy.

Type: [ManagedScalingPolicy](#) (p. 247) object

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

RemoveAutoScalingPolicy

Removes an automatic scaling policy from a specified instance group within an EMR cluster.

Request Syntax

```
{  
  "ClusterId": "string",  
  "InstanceGroupId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 114)

Specifies the ID of a cluster. The instance group to which the automatic scaling policy is applied is within this cluster.

Type: String

Required: Yes

InstanceGroupId (p. 114)

Specifies the ID of the instance group to which the scaling policy is applied.

Type: String

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

RemoveAutoTerminationPolicy

Removes an auto-termination policy from an Amazon EMR cluster.

Request Syntax

```
{  
  "ClusterId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 116)

Specifies the ID of the Amazon EMR cluster from which the auto-termination policy will be removed.

Type: String

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

RemoveManagedScalingPolicy

Removes a managed scaling policy from a specified EMR cluster.

Request Syntax

```
{  
  "ClusterId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ClusterId (p. 117)

Specifies the ID of the cluster from which the managed scaling policy will be removed.

Type: String

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

RemoveTags

Removes tags from an Amazon EMR resource, such as a cluster or Amazon EMR Studio. Tags make it easier to associate resources in various ways, such as grouping clusters to track your Amazon EMR resource allocation costs. For more information, see [Tag Clusters](#).

The following example removes the stack tag with value Prod from a cluster:

Request Syntax

```
{  
  "ResourceId": "string",  
  "TagKeys": [ "string" ]  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

ResourceId (p. 118)

The Amazon EMR resource identifier from which tags will be removed. For example, a cluster identifier or an Amazon EMR Studio ID.

Type: String

Required: Yes

TagKeys (p. 118)

A list of tag keys to remove from the resource.

Type: Array of strings

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 299).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RemoveTags.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1

X-Amz-Target: ElasticMapReduce.RemoveTags

AUTHPARAMS

{
  "ResourceId": "j-3U7TSX5GZFD8Y",
  "Tags": [{
    "Key": "stack",
    "Value": "Prod"
  }]
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 9da5a349-ed9e-11e2-90db-69a5154aeb8d

Content-Type: application/x-amz-json-1.1

Content-Length: 71

Date: Mon, 15 Jul 2013 22:33:47 GMT
```

```
{  
  
}
```

Example

The following example removes the stack and hbase tags from a cluster:

Sample Request

```
POST / HTTP/1.1  
  
Content-Type: application/x-amz-json-1.1  
  
X-Amz-Target: ElasticMapReduce.RemoveTags  
  
AUTHPARAMS  
  
{  
  
  "ResourceId": "j-3U7TSX5GZFD8Y",  
  
  "Tags": [{  
  
    "Key": "stack"  
  
  },  
  
  {  
  
    "Key": "hbase"  
  
  }]  
  
}
```

Sample Response

```
HTTP/1.1 200 OK  
  
x-amzn-RequestId: 9da5a349-ed9e-11e2-90db-69a5154aeb8d
```

```
Content-Type: application/x-amz-json-1.1
```

```
Content-Length: 71
```

```
Date: Mon, 15 Jul 2013 22:33:47 GMT
```

```
{  
  
}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

RunJobFlow

RunJobFlow creates and starts running a new cluster (job flow). The cluster runs the steps specified. After the steps complete, the cluster stops and the HDFS partition is lost. To prevent loss of data, configure the last step of the job flow to store results in Amazon S3. If the [JobFlowInstancesConfig \(p. 237\)](#) `KeepJobFlowAliveWhenNoSteps` parameter is set to `TRUE`, the cluster transitions to the `WAITING` state rather than shutting down after the steps have completed.

For additional protection, you can set the [JobFlowInstancesConfig \(p. 237\)](#) `TerminationProtected` parameter to `TRUE` to lock the cluster and prevent it from being terminated by API call, user intervention, or in the event of a job flow error.

A maximum of 256 steps are allowed in each job flow.

If your cluster is long-running (such as a Hive data warehouse) or complex, you may require more than 256 steps to process your data. You can bypass the 256-step limitation in various ways, including using the SSH shell to connect to the master node and submitting queries directly to the software running on the master node, such as Hive and Hadoop. For more information on how to do this, see [Add More than 256 Steps to a Cluster](#) in the *Amazon EMR Management Guide*.

For long running clusters, we recommend that you periodically store your results.

Note

The instance fleets configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions. The RunJobFlow request can contain InstanceFleets parameters or InstanceGroups parameters, but not both.

Request Syntax

```
{
  "AdditionalInfo": "string",
  "AmiVersion": "string",
  "Applications": [
    {
      "AdditionalInfo": {
        "string": "string"
      },
      "Args": [ "string" ],
      "Name": "string",
      "Version": "string"
    }
  ],
  "AutoScalingRole": "string",
  "AutoTerminationPolicy": {
    "IdleTimeout": number
  },
  "BootstrapActions": [
    {
      "Name": "string",
      "ScriptBootstrapAction": {
        "Args": [ "string" ],
        "Path": "string"
      }
    }
  ],
  "Configurations": [
    {
      "Classification": "string",
      "Configurations": [
        "Configuration"
      ]
    }
  ]
}
```



```
    ],
    "Properties": {
      "string": "string"
    }
  },
  "CustomAmiId": "string",
  "EbsRootVolumeSize": number,
  "Instances": {
    "AdditionalMasterSecurityGroups": [ "string" ],
    "AdditionalSlaveSecurityGroups": [ "string" ],
    "Ec2KeyName": "string",
    "Ec2SubnetId": "string",
    "Ec2SubnetIds": [ "string" ],
    "EmrManagedMasterSecurityGroup": "string",
    "EmrManagedSlaveSecurityGroup": "string",
    "HadoopVersion": "string",
    "InstanceCount": number,
    "InstanceFleets": [
      {
        "InstanceFleetType": "string",
        "InstanceTypeConfigs": [
          {
            "BidPrice": "string",
            "BidPriceAsPercentageOfOnDemandPrice": number,
            "Configurations": [
              {
                "Classification": "string",
                "Configurations": [
                  "Configuration"
                ],
                "Properties": {
                  "string": "string"
                }
              }
            ],
            "CustomAmiId": "string",
            "EbsConfiguration": {
              "EbsBlockDeviceConfigs": [
                {
                  "VolumeSpecification": {
                    "Iops": number,
                    "SizeInGB": number,
                    "VolumeType": "string"
                  },
                  "VolumesPerInstance": number
                }
              ],
              "EbsOptimized": boolean
            },
            "InstanceType": "string",
            "WeightedCapacity": number
          }
        ]
      },
      "LaunchSpecifications": {
        "OnDemandSpecification": {
          "AllocationStrategy": "string",
          "CapacityReservationOptions": {
            "CapacityReservationPreference": "string",
            "CapacityReservationResourceGroupArn": "string",
            "UsageStrategy": "string"
          }
        },
        "SpotSpecification": {
          "AllocationStrategy": "string",
          "BlockDurationMinutes": number,
```

```

        "TimeoutAction": "string",
        "TimeoutDurationMinutes": number
    }
},
"Name": "string",
"TargetOnDemandCapacity": number,
"TargetSpotCapacity": number
}
],
"InstanceGroups": [
    {
        "AutoScalingPolicy": {
            "Constraints": {
                "MaxCapacity": number,
                "MinCapacity": number
            },
            "Rules": [
                {
                    "Action": {
                        "Market": "string",
                        "SimpleScalingPolicyConfiguration": {
                            "AdjustmentType": "string",
                            "CoolDown": number,
                            "ScalingAdjustment": number
                        }
                    },
                    "Description": "string",
                    "Name": "string",
                    "Trigger": {
                        "CloudWatchAlarmDefinition": {
                            "ComparisonOperator": "string",
                            "Dimensions": [
                                {
                                    "Key": "string",
                                    "Value": "string"
                                }
                            ],
                            "EvaluationPeriods": number,
                            "MetricName": "string",
                            "Namespace": "string",
                            "Period": number,
                            "Statistic": "string",
                            "Threshold": number,
                            "Unit": "string"
                        }
                    }
                }
            ]
        },
        "BidPrice": "string",
        "Configurations": [
            {
                "Classification": "string",
                "Configurations": [
                    "Configuration"
                ],
                "Properties": {
                    "string": "string"
                }
            }
        ],
        "CustomAmiId": "string",
        "EbsConfiguration": {
            "EbsBlockDeviceConfigs": [
                {
                    "VolumeSpecification": {

```

```
        "Iops": number,
        "SizeInGB": number,
        "VolumeType": "string"
    },
    "VolumesPerInstance": number
},
    "EbsOptimized": boolean
},
    "InstanceCount": number,
    "InstanceRole": "string",
    "InstanceType": "string",
    "Market": "string",
    "Name": "string"
}
],
"KeepJobFlowAliveWhenNoSteps": boolean,
"MasterInstanceType": "string",
"Placement": {
    "AvailabilityZone": "string",
    "AvailabilityZones": [ "string" ]
},
"ServiceAccessSecurityGroup": "string",
"SlaveInstanceType": "string",
"TerminationProtected": boolean
},
"JobFlowRole": "string",
"KerberosAttributes": {
    "ADDomainJoinPassword": "string",
    "ADDomainJoinUser": "string",
    "CrossRealmTrustPrincipalPassword": "string",
    "KdcAdminPassword": "string",
    "Realm": "string"
},
"LogEncryptionKmsKeyId": "string",
"LogUri": "string",
"ManagedScalingPolicy": {
    "ComputeLimits": {
        "MaximumCapacityUnits": number,
        "MaximumCoreCapacityUnits": number,
        "MaximumOnDemandCapacityUnits": number,
        "MinimumCapacityUnits": number,
        "UnitType": "string"
    }
},
"Name": "string",
"NewSupportedProducts": [
    {
        "Args": [ "string" ],
        "Name": "string"
    }
],
"PlacementGroupConfigs": [
    {
        "InstanceRole": "string",
        "PlacementStrategy": "string"
    }
],
"ReleaseLabel": "string",
"RepoUpgradeOnBoot": "string",
"ScaleDownBehavior": "string",
"SecurityConfiguration": "string",
"ServiceRole": "string",
"StepConcurrencyLevel": number,
"Steps": [
    {
```

```
    "ActionOnFailure": "string",
    "HadoopJarStep": {
      "Args": [ "string" ],
      "Jar": "string",
      "MainClass": "string",
      "Properties": [
        {
          "Key": "string",
          "Value": "string"
        }
      ]
    },
    "Name": "string"
  }
],
"SupportedProducts": [ "string" ],
"Tags": [
  {
    "Key": "string",
    "Value": "string"
  }
],
"VisibleToAllUsers": boolean
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

[AdditionalInfo](#) (p. 122)

A JSON string for selecting additional features.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

[AmiVersion](#) (p. 122)

Applies only to Amazon EMR AMI versions 3.x and 2.x. For Amazon EMR releases 4.0 and later, ReleaseLabel is used. To specify a custom AMI, use CustomAmiID.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

[Applications](#) (p. 122)

Applies to Amazon EMR releases 4.0 and later. A case-insensitive list of applications for Amazon EMR to install and configure when launching the cluster. For a list of applications available for each Amazon EMR release version, see the [Amazon EMR Release Guide](#).

EbsRootVolumeSize (p. 122)

The size, in GiB, of the Amazon EBS root device volume of the Linux AMI that is used for each EC2 instance. Available in Amazon EMR version 4.x and later.

Type: Integer

Required: No

Instances (p. 122)

A specification of the number and type of Amazon EC2 instances.

Type: [JobFlowInstancesConfig](#) (p. 237) object

Required: Yes

JobFlowRole (p. 122)

Also called instance profile and EC2 role. An IAM role for an EMR cluster. The EC2 instances of the cluster assume this role. The default role is `EMR_EC2_DefaultRole`. In order to use the default role, you must have already created it using the CLI or console.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

KerberosAttributes (p. 122)

Attributes for Kerberos configuration when Kerberos authentication is enabled using a security configuration. For more information see [Use Kerberos Authentication](#) in the *Amazon EMR Management Guide*.

Type: [KerberosAttributes](#) (p. 244) object

Required: No

LogEncryptionKmsKeyId (p. 122)

The AWS KMS key used for encrypting log files. If a value is not provided, the logs remain encrypted by AES-256. This attribute is only available with Amazon EMR version 5.30.0 and later, excluding Amazon EMR 6.0.0.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

LogUri (p. 122)

The location in Amazon S3 to write the log files of the job flow. If a value is not provided, logs are not created.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

ManagedScalingPolicy (p. 122)

The specified managed scaling policy for an Amazon EMR cluster.

Type: [ManagedScalingPolicy](#) (p. 247) object

Required: No

Name (p. 122)

The name of the job flow.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\u0D7FF\u0E000-\uFFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: Yes

NewSupportedProducts (p. 122)

Note

For Amazon EMR releases 3.x and 2.x. For Amazon EMR releases 4.x and later, use Applications.

A list of strings that indicates third-party software to use with the job flow that accepts a user argument list. EMR accepts and forwards the argument list to the corresponding installation script as bootstrap action arguments. For more information, see "Launch a Job Flow on the MapR Distribution for Hadoop" in the [Amazon EMR Developer Guide](#). Supported values are:

- "mapr-m3" - launch the cluster using MapR M3 Edition.
- "mapr-m5" - launch the cluster using MapR M5 Edition.
- "mapr" with the user arguments specifying "--edition,m3" or "--edition,m5" - launch the job flow using MapR M3 or M5 Edition respectively.
- "mapr-m7" - launch the cluster using MapR M7 Edition.
- "hunk" - launch the cluster with the Hunk Big Data Analytics Platform.
- "hue" - launch the cluster with Hue installed.
- "spark" - launch the cluster with Apache Spark installed.
- "ganqlia" - launch the cluster with the Ganglia Monitoring System installed.

Type: Array of [SupportedProductConfig](#) (p. 294) objects

Required: No

PlacementGroupConfigs (p. 122)

The specified placement group configuration for an Amazon EMR cluster.

Type: Array of [PlacementGroupConfig](#) (p. 257) objects

Required: No

ReleaseLabel (p. 122)

The Amazon EMR release label, which determines the version of open-source application packages installed on the cluster. Release labels are in the form `emr-x.x.x`, where `x.x.x` is an Amazon EMR release version such as `emr-5.14.0`. For more information about Amazon EMR release versions and included application versions and features, see <https://docs.aws.amazon.com/emr/latest/ReleaseGuide/>. The release label applies only to Amazon EMR releases version 4.0 and later. Earlier versions use `AmiVersion`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

RepoUpgradeOnBoot (p. 122)

Applies only when `CustomAmiID` is used. Specifies which updates from the Amazon Linux AMI package repositories to apply automatically when the instance boots using the AMI. If omitted, the default is `SECURITY`, which indicates that only security updates are applied. If `NONE` is specified, no updates are applied, and all updates must be applied manually.

Type: String

Valid Values: `SECURITY` | `NONE`

Required: No

ScaleDownBehavior (p. 122)

Specifies the way that individual Amazon EC2 instances terminate when an automatic scale-in activity occurs or an instance group is resized. `TERMINATE_AT_INSTANCE_HOUR` indicates that Amazon EMR terminates nodes at the instance-hour boundary, regardless of when the request to terminate the instance was submitted. This option is only available with Amazon EMR 5.1.0 and later and is the default for clusters created using that version. `TERMINATE_AT_TASK_COMPLETION` indicates that Amazon EMR adds nodes to a deny list and drains tasks from nodes before terminating the Amazon EC2 instances, regardless of the instance-hour boundary. With either behavior, Amazon EMR removes the least active nodes first and blocks instance termination if it could lead to HDFS corruption. `TERMINATE_AT_TASK_COMPLETION` available only in Amazon EMR version 4.1.0 and later, and is the default for versions of Amazon EMR earlier than 5.1.0.

Type: String

Valid Values: `TERMINATE_AT_INSTANCE_HOUR` | `TERMINATE_AT_TASK_COMPLETION`

Required: No

SecurityConfiguration (p. 122)

The name of a security configuration to apply to the cluster.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

ServiceRole (p. 122)

The IAM role that Amazon EMR assumes in order to access AWS resources on your behalf.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

StepConcurrencyLevel (p. 122)

Specifies the number of steps that can be executed concurrently. The default value is 1. The maximum value is 256.

Type: Integer

Required: No

Steps (p. 122)

A list of steps to run.

Type: Array of [StepConfig \(p. 279\)](#) objects

Required: No

SupportedProducts (p. 122)

Note

For Amazon EMR releases 3.x and 2.x. For Amazon EMR releases 4.x and later, use Applications.

A list of strings that indicates third-party software to use. For more information, see the [Amazon EMR Developer Guide](#). Currently supported values are:

- "mapr-m3" - launch the job flow using MapR M3 Edition.
- "mapr-m5" - launch the job flow using MapR M5 Edition.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\x\n\t] *

Required: No

Tags (p. 122)

A list of tags to associate with a cluster and propagate to Amazon EC2 instances.

Type: Array of [Tag \(p. 295\)](#) objects

Required: No

VisibleToAllUsers (p. 122)

Set this value to `true` so that IAM principals in the AWS account associated with the cluster can perform EMR actions on the cluster that their IAM policies allow. This value defaults to `true` for clusters created using the EMR API or the AWS CLI [create-cluster](#) command.

When set to `false`, only the IAM principal that created the cluster and the AWS account root user can perform EMR actions for the cluster, regardless of the IAM permissions policies attached to other IAM principals. For more information, see [Understanding the EMR Cluster VisibleToAllUsers Setting](#) in the *Amazon EMR Management Guide*.

Type: Boolean

Required: No

Response Syntax

```
{
```

```
"ClusterArn": "string",  
"JobFlowId": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

ClusterArn (p. 131)

The Amazon Resource Name (ARN) of the cluster.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

JobFlowId (p. 131)

A unique identifier for the job flow.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example 1

This example illustrates one usage of RunJobFlow.

Sample Request

```
POST / HTTP/1.1  
Content-Type: application/x-amz-json-1.1  
X-Amz-Target: ElasticMapReduce.RunJobFlow  
Content-Length: 734  
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32  
Host: us-east-1.elasticmapreduce.amazonaws.com  
X-Amz-Date: 20130715T210803Z  
X-Amz-Content-Sha256: 8676d21986e4628a89fb1232a1344063778d4ffc23d10be02b437e0d53a24db3  
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130715/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-
```

```
type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target,
Signature=71f79725c4dbe77c0e842718485f0b37fe6df69e1153c80f7748ebd9617ca2f3
Accept: */*

{
  "Name": "Development Job Flow",
  "Instances": {
    "KeepJobFlowAliveWhenNoSteps": "false",
    "TerminationProtected": "false",
    "InstanceGroups": [{
      "Name": "Master Instance Group",
      "InstanceRole": "MASTER",
      "InstanceCount": 1,
      "InstanceType": "m1.small",
      "Market": "ON_DEMAND"
    }]
  },
  "Steps": [{
    "Name": "Example Streaming Step",
    "ActionOnFailure": "CANCEL_AND_WAIT",
    "HadoopJarStep": {
      "Jar": "/home/hadoop/contrib/streaming/hadoop-streaming.jar",
      "Args": [
        "-input",
        "s3://elasticmapreduce/samples/wordcount/input",
        "-output",
        "s3://examples-bucket/example-output",
        "-mapper",
        "s3://elasticmapreduce/samples/wordcount/wordSplitter.py",
        "-reducer",
        "aggregate"
      ]
    }
  ]},
  "BootstrapActions": [],
  "NewSupportedProduct": [],
  "AmiVersion": "3.8.0"
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: a4406d6b-ed92-11e2-9787-192218ecb460
Content-Type: application/x-amz-json-1.1
Content-Length: 31
Date: Mon, 15 Jul 2013 21:08:05 GMT

{"JobFlowId": "j-ZKIY4CKQRX72"}
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

SetTerminationProtection

SetTerminationProtection locks a cluster (job flow) so the EC2 instances in the cluster cannot be terminated by user intervention, an API call, or in the event of a job-flow error. The cluster still terminates upon successful completion of the job flow. Calling SetTerminationProtection on a cluster is similar to calling the Amazon EC2 DisableAPITermination API on all EC2 instances in a cluster.

SetTerminationProtection is used to prevent accidental termination of a cluster and to ensure that in the event of an error, the instances persist so that you can recover any data stored in their ephemeral instance storage.

To terminate a cluster that has been locked by setting SetTerminationProtection to true, you must first unlock the job flow by a subsequent call to SetTerminationProtection in which you set the value to false.

For more information, see [Managing Cluster Termination](#) in the *Amazon EMR Management Guide*.

Request Syntax

```
{
  "JobFlowIds": [ "string" ],
  "TerminationProtected": boolean
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

JobFlowIds (p. 135)

A list of strings that uniquely identify the clusters to protect. This identifier is returned by [RunJobFlow](#) (p. 122) and can also be obtained from [DescribeJobFlows](#) (p. 41) .

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\x\n\t] *

Required: Yes

TerminationProtected (p. 135)

A Boolean that indicates whether to protect the cluster and prevent the Amazon EC2 instances in the cluster from shutting down due to API calls, user intervention, or job-flow error.

Type: Boolean

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of `SetTerminationProtection`.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.SetTerminationProtection
Content-Length: 61
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130716T211420Z
X-Amz-Content-Sha256: c362fadae0fce377aa63f04388aeb90c53cedb17a8bfbb8cffcb10c2378137f9
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130716/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target, Signature=764b6aala38733cadff35a2e884887e9f1208a422266bc83ac77e8d0b80bd4cf
Accept: */*

{
  "JobFlowIds": ["j-3TS00IYO4NFN"],
  "TerminationProtected": true
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: af23b1db-ee5c-11e2-9787-192218ecb460
Content-Type: application/x-amz-json-1.1
Content-Length: 0
Date: Tue, 16 Jul 2013 21:14:21 GMT
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of SetVisibleToAllUsers.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.SetVisibleToAllUsers
Content-Length: 58
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130715T221616Z
X-Amz-Content-Sha256: 2ff32d11eab2383d764ffcb97571454e798689ecd09a7b1bb2327e22b0b930d4
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130715/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target, Signature=e1a00b37787d9ccc43c9de32f1f0a73813b0bd6643d4db7762b62a7092d51997
Accept: */*

{
  "JobFlowIds": ["j-ZKIY4CKQRX72"],
  "VisibleToAllUsers": true
}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 2be9cde9-ed9c-11e2-82b6-2351cde3f33f
Content-Type: application/x-amz-json-1.1
Content-Length: 0
Date: Mon, 15 Jul 2013 22:16:18 GMT
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

StartNotebookExecution

Starts a notebook execution.

Request Syntax

```
{
  "EditorId": "string",
  "ExecutionEngine": {
    "Id": "string",
    "MasterInstanceSecurityGroupId": "string",
    "Type": "string"
  },
  "NotebookExecutionName": "string",
  "NotebookInstanceSecurityGroupId": "string",
  "NotebookParams": "string",
  "RelativePath": "string",
  "ServiceRole": "string",
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

EditorId (p. 141)

The unique identifier of the EMR Notebook to use for notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–D7FFE000–FFFFDD800DC00–DBFFDFFFxnt]*

Required: Yes

ExecutionEngine (p. 141)

Specifies the execution engine (cluster) that runs the notebook execution.

Type: [ExecutionEngineConfig](#) (p. 192) object

Required: Yes

NotebookExecutionName (p. 141)

An optional name for the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

NotebookInstanceSecurityGroupId (p. 141)

The unique identifier of the Amazon EC2 security group to associate with the EMR Notebook for this notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

NotebookParams (p. 141)

Input parameters in JSON format passed to the EMR Notebook at runtime for execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

RelativePath (p. 141)

The path and file name of the notebook file for this execution, relative to the path specified for the EMR Notebook. For example, if you specify a path of `s3://MyBucket/MyNotebooks` when you create an EMR Notebook for a notebook with an ID of `e-ABCDEFGH1234567890ABCD` (the `EditorID` of this request), and you specify a `RelativePath` of `my_notebook_executions/notebook_execution.ipynb`, the location of the file for the notebook execution is `s3://MyBucket/MyNotebooks/e-ABCDEFGH1234567890ABCD/my_notebook_executions/notebook_execution.ipynb`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

ServiceRole (p. 141)

The name or ARN of the IAM role that is used as the service role for Amazon EMR (the EMR role) for the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Tags (p. 141)

A list of tags associated with a notebook execution. Tags are user-defined key-value pairs that consist of a required key string with a maximum of 128 characters and an optional value string with a maximum of 256 characters.

Type: Array of [Tag \(p. 295\)](#) objects

Required: No

Response Syntax

```
{  
  "NotebookExecutionId": "string"  
}
```

Response Elements

If the action is successful, the service sends back an HTTP 200 response.

The following data is returned in JSON format by the service.

NotebookExecutionId ([p. 143](#))

The unique identifier of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

StopNotebookExecution

Stops a notebook execution.

Request Syntax

```
{  
  "NotebookExecutionId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 297\)](#).

The request accepts the following data in JSON format.

NotebookExecutionId [\(p. 145\)](#)

The unique identifier of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [0020–D7FFE000–FFFFDD800DC00–DBFFFFFFxnt]*

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

TerminateJobFlows

TerminateJobFlows shuts a list of clusters (job flows) down. When a job flow is shut down, any step not yet completed is canceled and the EC2 instances on which the cluster is running are stopped. Any log files not already saved are uploaded to Amazon S3 if a LogUri was specified when the cluster was created.

The maximum number of clusters allowed is 10. The call to `TerminateJobFlows` is asynchronous. Depending on the configuration of the cluster, it may take up to 1-5 minutes for the cluster to completely terminate and release allocated resources, such as Amazon EC2 instances.

Request Syntax

```
{  
  "JobFlowIds": [ "string" ]  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 297\)](#).

The request accepts the following data in JSON format.

JobFlowIds (p. 147)

A list of job flows to be shut down.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of `TerminateJobFlows`.

Sample Request

```
POST / HTTP/1.1
Content-Type: application/x-amz-json-1.1
X-Amz-Target: ElasticMapReduce.TerminateJobFlows
Content-Length: 33
User-Agent: aws-sdk-ruby/1.9.2 ruby/1.9.3 i386-mingw32
Host: us-east-1.elasticmapreduce.amazonaws.com
X-Amz-Date: 20130716T211858Z
X-Amz-Content-Sha256: ab64713f61e066e80a6083844b9249b6c6362d34a7ae7393047aa46d38b9e315
Authorization: AWS4-HMAC-SHA256 Credential=AKIAIOSFODNN7EXAMPLE/20130716/us-east-1/elasticmapreduce/aws4_request, SignedHeaders=content-length;content-type;host;user-agent;x-amz-content-sha256;x-amz-date;x-amz-target, Signature=9791416eaf09f36aa753a324b0de27ff5cc7084b8548cc748487a2bcb3439d58
Accept: */*

{"JobFlowIds": ["j-3TS00IYO4NFN"]}
```

Sample Response

```
HTTP/1.1 200 OK
x-amzn-RequestId: 5551a7c9-ee5d-11e2-9542-25296c300ff0
Content-Type: application/x-amz-json-1.1
Content-Length: 0
Date: Tue, 16 Jul 2013 21:18:59 GMT
```

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

UpdateStudio

Updates an Amazon EMR Studio configuration, including attributes such as name, description, and subnets.

Request Syntax

```
{  
  "DefaultS3Location": "string",  
  "Description": "string",  
  "Name": "string",  
  "StudioId": "string",  
  "SubnetIds": [ "string" ]  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

DefaultS3Location (p. 149)

The Amazon S3 location to back up Workspaces and notebook files for the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Description (p. 149)

A detailed description to assign to the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Name (p. 149)

A descriptive name for the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

StudioId (p. 149)

The ID of the Amazon EMR Studio to update.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

SubnetIds (p. 149)

A list of subnet IDs to associate with the Amazon EMR Studio. The list can include new subnet IDs, but must also include all of the subnet IDs previously associated with the Studio. The list order does not matter. A Studio can have a maximum of 5 subnets. The subnets must belong to the same VPC as the Studio.

Type: Array of strings

Required: No

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerErrorException

This exception occurs when there is an internal failure in the Amazon EMR service.

HTTP Status Code: 500

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

UpdateStudioSessionMapping

Updates the session policy attached to the user or group for the specified Amazon EMR Studio.

Request Syntax

```
{  
  "IdentityId": "string",  
  "IdentityName": "string",  
  "IdentityType": "string",  
  "SessionPolicyArn": "string",  
  "StudioId": "string"  
}
```

Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 297).

The request accepts the following data in JSON format.

IdentityId (p. 151)

The globally unique identifier (GUID) of the user or group. For more information, see [UserId](#) and [GroupId](#) in the *AWS SSO Identity Store API Reference*. Either `IdentityName` or `IdentityId` must be specified.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdentityName (p. 151)

The name of the user or group to update. For more information, see [UserName](#) and [DisplayName](#) in the *AWS SSO Identity Store API Reference*. Either `IdentityName` or `IdentityId` must be specified.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdentityType (p. 151)

Specifies whether the identity to update is a user or a group.

Type: String

Valid Values: USER | GROUP

Required: Yes

SessionPolicyArn (p. 151)

The Amazon Resource Name (ARN) of the session policy to associate with the specified user or group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

Studioid (p. 151)

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

Response Elements

If the action is successful, the service sends back an HTTP 200 response with an empty HTTP body.

Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 299\)](#).

InternalServerError

Indicates that an error occurred while processing the request and that the request was not completed.

HTTP Status Code: 400

InvalidRequestException

This exception occurs when there is something wrong with user input.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

Data Types

The Amazon EMR API contains several data types that various actions use. This section describes each data type in detail.

Note

The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [Application](#) (p. 157)
- [AutoScalingPolicy](#) (p. 158)
- [AutoScalingPolicyDescription](#) (p. 159)
- [AutoScalingPolicyStateChangeReason](#) (p. 160)
- [AutoScalingPolicyStatus](#) (p. 161)
- [AutoTerminationPolicy](#) (p. 162)
- [BlockPublicAccessConfiguration](#) (p. 163)
- [BlockPublicAccessConfigurationMetadata](#) (p. 164)
- [BootstrapActionConfig](#) (p. 165)
- [BootstrapActionDetail](#) (p. 166)
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Application

With Amazon EMR release version 4.0 and later, the only accepted parameter is the application name. To pass arguments to applications, you use configuration classifications specified using configuration JSON objects. For more information, see [Configuring Applications](#).

With earlier Amazon EMR releases, the application is any Amazon or third-party software that you can add to the cluster. This structure contains a list of strings that indicates the software to use with the cluster and accepts a user argument list. Amazon EMR accepts and forwards the argument list to the corresponding installation script as bootstrap action argument.

Contents

AdditionalInfo

This option is for advanced users only. This is meta information about third-party applications that third-party vendors use for testing purposes.

Type: String to string map

Required: No

Args

Arguments for Amazon EMR to pass to the application.

Type: Array of strings

Required: No

Name

The name of the application.

Type: String

Required: No

Version

The version of the application.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

AutoScalingPolicy

An automatic scaling policy for a core instance group or task instance group in an Amazon EMR cluster. An automatic scaling policy defines how an instance group dynamically adds and terminates EC2 instances in response to the value of a CloudWatch metric. See [PutAutoScalingPolicy \(p. 104\)](#).

Contents

Constraints

The upper and lower EC2 instance limits for an automatic scaling policy. Automatic scaling activity will not cause an instance group to grow above or below these limits.

Type: [ScalingConstraints \(p. 262\)](#) object

Required: Yes

Rules

The scale-in and scale-out rules that comprise the automatic scaling policy.

Type: Array of [ScalingRule \(p. 263\)](#) objects

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

AutoScalingPolicyDescription

An automatic scaling policy for a core instance group or task instance group in an Amazon EMR cluster. The automatic scaling policy defines how an instance group dynamically adds and terminates EC2 instances in response to the value of a CloudWatch metric. See [PutAutoScalingPolicy](#) (p. 104).

Contents

Constraints

The upper and lower EC2 instance limits for an automatic scaling policy. Automatic scaling activity will not cause an instance group to grow above or below these limits.

Type: [ScalingConstraints](#) (p. 262) object

Required: No

Rules

The scale-in and scale-out rules that comprise the automatic scaling policy.

Type: Array of [ScalingRule](#) (p. 263) objects

Required: No

Status

The status of an automatic scaling policy.

Type: [AutoScalingPolicyStatus](#) (p. 161) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

AutoScalingPolicyStateChangeReason

The reason for an [AutoScalingPolicyStatus](#) (p. 161) change.

Contents

Code

The code indicating the reason for the change in status. `USER_REQUEST` indicates that the scaling policy status was changed by a user. `PROVISION_FAILURE` indicates that the status change was because the policy failed to provision. `CLEANUP_FAILURE` indicates an error.

Type: String

Valid Values: `USER_REQUEST` | `PROVISION_FAILURE` | `CLEANUP_FAILURE`

Required: No

Message

A friendly, more verbose message that accompanies an automatic scaling policy state change.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

AutoScalingPolicyStatus

The status of an automatic scaling policy.

Contents

State

Indicates the status of the automatic scaling policy.

Type: String

Valid Values: PENDING | ATTACHING | ATTACHED | DETACHING | DETACHED | FAILED

Required: No

StateChangeReason

The reason for a change in status.

Type: [AutoScalingPolicyStateChangeReason](#) (p. 160) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

AutoTerminationPolicy

An auto-termination policy for an Amazon EMR cluster. An auto-termination policy defines the amount of idle time in seconds after which a cluster automatically terminates. For alternative cluster termination options, see [Control cluster termination](#).

Contents

IdleTimeout

Specifies the amount of idle time in seconds after which the cluster automatically terminates. You can specify a minimum of 60 seconds and a maximum of 604800 seconds (seven days).

Type: Long

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

BlockPublicAccessConfiguration

A configuration for Amazon EMR block public access. When `BlockPublicSecurityGroupRules` is set to `true`, Amazon EMR prevents cluster creation if one of the cluster's security groups has a rule that allows inbound traffic from `0.0.0.0/0` or `::/0` on a port, unless the port is specified as an exception using `PermittedPublicSecurityGroupRuleRanges`.

Contents

BlockPublicSecurityGroupRules

Indicates whether Amazon EMR block public access is enabled (`true`) or disabled (`false`). By default, the value is `false` for accounts that have created EMR clusters before July 2019. For accounts created after this, the default is `true`.

Type: Boolean

Required: Yes

PermittedPublicSecurityGroupRuleRanges

Specifies ports and port ranges that are permitted to have security group rules that allow inbound traffic from all public sources. For example, if Port 23 (Telnet) is specified for `PermittedPublicSecurityGroupRuleRanges`, Amazon EMR allows cluster creation if a security group associated with the cluster has a rule that allows inbound traffic on Port 23 from IPv4 `0.0.0.0/0` or IPv6 port `::/0` as the source.

By default, Port 22, which is used for SSH access to the cluster EC2 instances, is in the list of `PermittedPublicSecurityGroupRuleRanges`.

Type: Array of [PortRange](#) (p. 259) objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

BlockPublicAccessConfigurationMetadata

Properties that describe the AWS principal that created the `BlockPublicAccessConfiguration` using the `PutBlockPublicAccessConfiguration` action as well as the date and time that the configuration was created. Each time a configuration for block public access is updated, Amazon EMR updates this metadata.

Contents

CreatedByArn

The Amazon Resource Name that created or last modified the configuration.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: Yes

CreationDateTime

The date and time that the configuration was created.

Type: Timestamp

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

BootstrapActionConfig

Configuration of a bootstrap action.

Contents

Name

The name of the bootstrap action.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

ScriptBootstrapAction

The script run by the bootstrap action.

Type: [ScriptBootstrapActionConfig](#) (p. 265) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

BootstrapActionDetail

Reports the configuration of a bootstrap action in a cluster (job flow).

Contents

BootstrapActionConfig

A description of the bootstrap action.

Type: [BootstrapActionConfig](#) (p. 165) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

CancelStepsInfo

Specification of the status of a CancelSteps request. Available only in Amazon EMR version 4.8.0 and later, excluding version 5.0.0.

Contents

Reason

The reason for the failure if the CancelSteps request fails.

Type: String

Required: No

Status

The status of a CancelSteps Request. The value may be SUBMITTED or FAILED.

Type: String

Valid Values: SUBMITTED | FAILED

Required: No

StepId

The encrypted StepId of a step.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

CloudWatchAlarmDefinition

The definition of a CloudWatch metric alarm, which determines when an automatic scaling activity is triggered. When the defined alarm conditions are satisfied, scaling activity begins.

Contents

ComparisonOperator

Determines how the metric specified by `MetricName` is compared to the value specified by `Threshold`.

Type: String

Valid Values: `GREATER_THAN_OR_EQUAL` | `GREATER_THAN` | `LESS_THAN` | `LESS_THAN_OR_EQUAL`

Required: Yes

Dimensions

A CloudWatch metric dimension.

Type: Array of [MetricDimension](#) (p. 248) objects

Required: No

EvaluationPeriods

The number of periods, in five-minute increments, during which the alarm condition must exist before the alarm triggers automatic scaling activity. The default value is 1.

Type: Integer

Required: No

MetricName

The name of the CloudWatch metric that is watched to determine an alarm condition.

Type: String

Required: Yes

Namespace

The namespace for the CloudWatch metric. The default is `AWS/ElasticMapReduce`.

Type: String

Required: No

Period

The period, in seconds, over which the statistic is applied. EMR CloudWatch metrics are emitted every five minutes (300 seconds), so if an EMR CloudWatch metric is specified, specify 300.

Type: Integer

Required: Yes

Statistic

The statistic to apply to the metric associated with the alarm. The default is `AVERAGE`.

Type: String

Valid Values: `SAMPLE_COUNT` | `AVERAGE` | `SUM` | `MINIMUM` | `MAXIMUM`

Required: No

Threshold

The value against which the specified statistic is compared.

Type: Double

Valid Range: Minimum value of 0.0.

Required: Yes

Unit

The unit of measure associated with the CloudWatch metric being watched. The value specified for Unit must correspond to the units specified in the CloudWatch metric.

Type: String

Valid Values: `NONE` | `SECONDS` | `MICRO_SECONDS` | `MILLI_SECONDS` | `BYTES` | `KILO_BYTES` | `MEGA_BYTES` | `GIGA_BYTES` | `TERA_BYTES` | `BITS` | `KILO_BITS` | `MEGA_BITS` | `GIGA_BITS` | `TERA_BITS` | `PERCENT` | `COUNT` | `BYTES_PER_SECOND` | `KILO_BYTES_PER_SECOND` | `MEGA_BYTES_PER_SECOND` | `GIGA_BYTES_PER_SECOND` | `TERA_BYTES_PER_SECOND` | `BITS_PER_SECOND` | `KILO_BITS_PER_SECOND` | `MEGA_BITS_PER_SECOND` | `GIGA_BITS_PER_SECOND` | `TERA_BITS_PER_SECOND` | `COUNT_PER_SECOND`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

The detailed description of the cluster.

Contents

Applications

The applications installed on this cluster.

Type: Array of [Application](#) (p. 157) objects

Required: No

AutoScalingRole

An IAM role for automatic scaling policies. The default role is `EMR_AutoScaling_DefaultRole`. The IAM role provides permissions that the automatic scaling feature requires to launch and terminate EC2 instances in an instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: `[\u0020-\u0D7FF\u0E000-\uFFFFD\u0D800\u0DC00-\u0DBFF\u0DFFF\r\n\t]*`

Required: No

AutoTerminate

Specifies whether the cluster should terminate after completing all steps.

Type: Boolean

Required: No

ClusterArn

The Amazon Resource Name of the cluster.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

Configurations

Applies only to Amazon EMR releases 4.x and later. The list of Configurations supplied to the EMR cluster.

Type: Array of [Configuration \(p. 184\)](#) objects

Required: No

CustomAmild

Available only in Amazon EMR version 5.7.0 and later. The ID of a custom Amazon EBS-backed Linux AMI if the cluster uses a custom AMI.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

EbsRootVolumeSize

The size, in GiB, of the Amazon EBS root device volume of the Linux AMI that is used for each EC2 instance. Available in Amazon EMR version 4.x and later.

Type: Integer

Required: No

Ec2InstanceAttributes

Provides information about the EC2 instances in a cluster grouped by category. For example, key name, subnet ID, IAM instance profile, and so on.

Type: [Ec2InstanceAttributes](#) (p. 189) object

Required: No

Id

The unique identifier for the cluster.

Type: String

Required: No

InstanceCollectionType

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

The instance group configuration of the cluster. A value of `INSTANCE_GROUP` indicates a uniform instance group configuration. A value of `INSTANCE_FLEET` indicates an instance fleets configuration.

Type: String

Valid Values: `INSTANCE_FLEET` | `INSTANCE_GROUP`

Required: No

KerberosAttributes

Attributes for Kerberos configuration when Kerberos authentication is enabled using a security configuration. For more information see [Use Kerberos Authentication](#) in the *Amazon EMR Management Guide*.

Type: [KerberosAttributes](#) (p. 244) object

Required: No

LogEncryptionKmsKeyId

The AWS KMS key used for encrypting log files. This attribute is only available with EMR version 5.30.0 and later, excluding EMR 6.0.0.

Type: String

Required: No

LogUri

The path to the Amazon S3 location where logs for this cluster are stored.

Type: String

Required: No

MasterPublicDnsName

The DNS name of the master node. If the cluster is on a private subnet, this is the private DNS name. On a public subnet, this is the public DNS name.

Type: String

Required: No

Name

The name of the cluster.

Type: String

Required: No

NormalizedInstanceHours

An approximation of the cost of the cluster, represented in m1.small/hours. This value is incremented one time for every hour an m1.small instance runs. Larger instances are weighted more, so an EC2 instance that is roughly four times more expensive would result in the normalized instance hours being incremented by four. This result is only an approximation and does not reflect the actual billing rate.

Type: Integer

Required: No

OutpostArn

The Amazon Resource Name (ARN) of the Outpost where the cluster is launched.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

Required: No

PlacementGroups

Placement group configured for an Amazon EMR cluster.

Type: Array of [PlacementGroupConfig](#) (p. 257) objects

Required: No

ReleaseLabel

The Amazon EMR release label, which determines the version of open-source application packages installed on the cluster. Release labels are in the form `emr-x.x.x`, where `x.x.x` is an Amazon EMR release version such as `emr-5.14.0`. For more information about Amazon EMR release versions and included application versions and features, see <https://docs.aws.amazon.com/emr/latest/ReleaseGuide/>. The release label applies only to Amazon EMR releases version 4.0 and later. Earlier versions use `AmiVersion`.

Type: String

RepoUpgradeOnBoot

Type: String

Required: No

The AMI version requested for this cluster.

Type: String

Required: No

The AMI version running on this cluster.

Type: String

Required: No

The way that individual Amazon EC2 instances terminate when an automatic scale-in activity occurs or an instance group is resized. `TERMINATE_AT_INSTANCE_HOUR` indicates that Amazon EMR terminates nodes at the instance-hour boundary, regardless of when the request to terminate the instance was submitted. This option is only available with Amazon EMR 5.1.0 and later and is the default for clusters created using that version. `TERMINATE_AT_TASK_COMPLETION` indicates that Amazon EMR adds nodes to a deny list and drains tasks from nodes before terminating the Amazon EC2 instances, regardless of the instance-hour boundary. With either behavior, Amazon EMR removes the least active nodes first and blocks instance termination if it could lead to HDFS corruption. `TERMINATE_AT_TASK_COMPLETION` is available only in Amazon EMR version 4.1.0 and later, and is the default for versions of Amazon EMR earlier than 5.1.0.

Type: String

Valid Values: TERMINATE AT INSTANCE HOUR | TERMINATE AT TASK COMPLETION

Required: No

The name of the security configuration applied to the cluster.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: `[\u0020-\u0D7FF\u0E000-\uFFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

The IAM role that Amazon EMR assumes in order to access AWS resources on your behalf.

Type: String

Required: No

Status

The current status details about the cluster.

Type: [ClusterStatus](#) (p. 177) object

Required: No

StepConcurrencyLevel

Specifies the number of steps that can be executed concurrently.

Type: Integer

Required: No

Tags

A list of tags associated with a cluster.

Type: Array of [Tag](#) (p. 295) objects

Required: No

TerminationProtected

Indicates whether Amazon EMR will lock the cluster to prevent the EC2 instances from being terminated by an API call or user intervention, or in the event of a cluster error.

Type: Boolean

Required: No

VisibleToAllUsers

Indicates whether the cluster is visible to IAM principals in the AWS account associated with the cluster. When `true`, IAM principals in the AWS account can perform EMR cluster actions on the cluster that their IAM policies allow. When `false`, only the IAM principal that created the cluster and the AWS account root user can perform EMR actions, regardless of IAM permissions policies attached to other IAM principals.

The default value is `true` if a value is not provided when creating a cluster using the EMR API [RunJobFlow](#) (p. 122) command, the AWS CLI [create-cluster](#) command, or the AWS Management Console. IAM principals that are allowed to perform actions on the cluster can use the [SetVisibleToAllUsers](#) (p. 138) action to change the value on a running cluster. For more information, see [Understanding the EMR Cluster VisibleToAllUsers Setting](#) in the *Amazon EMR Management Guide*.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ClusterStateChangeReason

The reason that the cluster changed to its current state.

Contents

Code

The programmatic code for the state change reason.

Type: String

Valid Values: `INTERNAL_ERROR` | `VALIDATION_ERROR` | `INSTANCE_FAILURE` | `INSTANCE_FLEET_TIMEOUT` | `BOOTSTRAP_FAILURE` | `USER_REQUEST` | `STEP_FAILURE` | `ALL_STEPS_COMPLETED`

Required: No

Message

The descriptive message for the state change reason.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ClusterStatus

The detailed status of the cluster.

Contents

State

The current state of the cluster.

Type: String

Valid Values: `STARTING` | `BOOTSTRAPPING` | `RUNNING` | `WAITING` | `TERMINATING` | `TERMINATED` | `TERMINATED_WITH_ERRORS`

Required: No

StateChangeReason

The reason for the cluster status change.

Type: [ClusterStateChangeReason](#) (p. 176) object

Required: No

Timeline

A timeline that represents the status of a cluster over the lifetime of the cluster.

Type: [ClusterTimeline](#) (p. 180) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ClusterSummary

The summary description of the cluster.

Contents

ClusterArn

The Amazon Resource Name of the cluster.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

Id

The unique identifier for the cluster.

Type: String

Required: No

Name

The name of the cluster.

Type: String

Required: No

NormalizedInstanceHours

An approximation of the cost of the cluster, represented in m1.small/hours. This value is incremented one time for every hour an m1.small instance runs. Larger instances are weighted more, so an EC2 instance that is roughly four times more expensive would result in the normalized instance hours being incremented by four. This result is only an approximation and does not reflect the actual billing rate.

Type: Integer

Required: No

OutpostArn

The Amazon Resource Name (ARN) of the Outpost where the cluster is launched.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

Required: No

Status

The details about the current status of the cluster.

Type: [ClusterStatus](#) (p. 177) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ClusterTimeline

Represents the timeline of the cluster's lifecycle.

Contents

CreationDateTime

The creation date and time of the cluster.

Type: Timestamp

Required: No

EndDateTime

The date and time when the cluster was terminated.

Type: Timestamp

Required: No

ReadyDateTime

The date and time when the cluster was ready to run steps.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Command

An entity describing an executable that runs on a cluster.

Contents

Args

Arguments for Amazon EMR to pass to the command for execution.

Type: Array of strings

Required: No

Name

The name of the command.

Type: String

Required: No

ScriptPath

The Amazon S3 location of the command script.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ComputeLimits

The EC2 unit limits for a managed scaling policy. The managed scaling activity of a cluster can not be above or below these limits. The limit only applies to the core and task nodes. The master node cannot be scaled after initial configuration.

Contents

MaximumCapacityUnits

The upper boundary of EC2 units. It is measured through vCPU cores or instances for instance groups and measured through units for instance fleets. Managed scaling activities are not allowed beyond this boundary. The limit only applies to the core and task nodes. The master node cannot be scaled after initial configuration.

Type: Integer

Required: Yes

MaximumCoreCapacityUnits

The upper boundary of EC2 units for core node type in a cluster. It is measured through vCPU cores or instances for instance groups and measured through units for instance fleets. The core units are not allowed to scale beyond this boundary. The parameter is used to split capacity allocation between core and task nodes.

Type: Integer

Required: No

MaximumOnDemandCapacityUnits

The upper boundary of On-Demand EC2 units. It is measured through vCPU cores or instances for instance groups and measured through units for instance fleets. The On-Demand units are not allowed to scale beyond this boundary. The parameter is used to split capacity allocation between On-Demand and Spot Instances.

Type: Integer

Required: No

MinimumCapacityUnits

The lower boundary of EC2 units. It is measured through vCPU cores or instances for instance groups and measured through units for instance fleets. Managed scaling activities are not allowed beyond this boundary. The limit only applies to the core and task nodes. The master node cannot be scaled after initial configuration.

Type: Integer

Required: Yes

UnitType

The unit type used for specifying a managed scaling policy.

Type: String

Valid Values: `InstanceFleetUnits` | `Instances` | `VCPU`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Configuration

Note

Amazon EMR releases 4.x or later.

An optional configuration specification to be used when provisioning cluster instances, which can include configurations for applications and software bundled with Amazon EMR. A configuration consists of a classification, properties, and optional nested configurations. A classification refers to an application-specific configuration file. Properties are the settings you want to change in that file. For more information, see [Configuring Applications](#).

Contents

Classification

The classification within a configuration.

Type: String

Required: No

Configurations

A list of additional configurations to apply within a configuration object.

Type: Array of [Configuration](#) (p. 184) objects

Required: No

Properties

A set of properties specified within a configuration classification.

Type: String to string map

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

EbsBlockDevice

Configuration of requested EBS block device associated with the instance group.

Contents

Device

The device name that is exposed to the instance, such as `/dev/sdh`.

Type: String

Required: No

VolumeSpecification

EBS volume specifications such as volume type, IOPS, and size (GiB) that will be requested for the EBS volume attached to an EC2 instance in the cluster.

Type: [VolumeSpecification](#) (p. 296) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

EbsBlockDeviceConfig

Configuration of requested EBS block device associated with the instance group with count of volumes that will be associated to every instance.

Contents

VolumeSpecification

EBS volume specifications such as volume type, IOPS, and size (GiB) that will be requested for the EBS volume attached to an EC2 instance in the cluster.

Type: [VolumeSpecification](#) (p. 296) object

Required: Yes

VolumesPerInstance

Number of EBS volumes with a specific volume configuration that will be associated with every instance in the instance group

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

EbsConfiguration

The Amazon EBS configuration of a cluster instance.

Contents

EbsBlockDeviceConfigs

An array of Amazon EBS volume specifications attached to a cluster instance.

Type: Array of [EbsBlockDeviceConfig](#) (p. 186) objects

Required: No

EbsOptimized

Indicates whether an Amazon EBS volume is EBS-optimized.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

EbsVolume

EBS block device that's attached to an EC2 instance.

Contents

Device

The device name that is exposed to the instance, such as `/dev/sdh`.

Type: String

Required: No

Volumeld

The volume identifier of the EBS volume.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Ec2InstanceAttributes

Provides information about the EC2 instances in a cluster grouped by category. For example, key name, subnet ID, IAM instance profile, and so on.

Contents

AdditionalMasterSecurityGroups

A list of additional Amazon EC2 security group IDs for the master node.

Type: Array of strings

Required: No

AdditionalSlaveSecurityGroups

A list of additional Amazon EC2 security group IDs for the core and task nodes.

Type: Array of strings

Required: No

Ec2AvailabilityZone

The Availability Zone in which the cluster will run.

Type: String

Required: No

Ec2KeyName

The name of the Amazon EC2 key pair to use when connecting with SSH into the master node as a user named "hadoop".

Type: String

Required: No

Ec2SubnetId

Set this parameter to the identifier of the Amazon VPC subnet where you want the cluster to launch. If you do not specify this value, and your account supports EC2-Classic, the cluster launches in EC2-Classic.

Type: String

Required: No

EmrManagedMasterSecurityGroup

The identifier of the Amazon EC2 security group for the master node.

Type: String

Required: No

EmrManagedSlaveSecurityGroup

The identifier of the Amazon EC2 security group for the core and task nodes.

Type: String

Required: No

IamInstanceProfile

The IAM role that was specified when the cluster was launched. The EC2 instances of the cluster assume this role.

Type: String

Required: No

RequestedEc2AvailabilityZones

Applies to clusters configured with the instance fleets option. Specifies one or more Availability Zones in which to launch EC2 cluster instances when the EC2-Classical network configuration is supported. Amazon EMR chooses the Availability Zone with the best fit from among the list of `RequestedEc2AvailabilityZones`, and then launches all cluster instances within that Availability Zone. If you do not specify this value, Amazon EMR chooses the Availability Zone for you. `RequestedEc2SubnetIDs` and `RequestedEc2AvailabilityZones` cannot be specified together.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

RequestedEc2SubnetIds

Applies to clusters configured with the instance fleets option. Specifies the unique identifier of one or more Amazon EC2 subnets in which to launch EC2 cluster instances. Subnets must exist within the same VPC. Amazon EMR chooses the EC2 subnet with the best fit from among the list of `RequestedEc2SubnetIDs`, and then launches all cluster instances within that Subnet. If this value is not specified, and the account and Region support EC2-Classical networks, the cluster launches instances in the EC2-Classical network and uses `RequestedEc2AvailabilityZones` instead of this setting. If EC2-Classical is not supported, and no Subnet is specified, Amazon EMR chooses the subnet for you. `RequestedEc2SubnetIDs` and `RequestedEc2AvailabilityZones` cannot be specified together.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

ServiceAccessSecurityGroup

The identifier of the Amazon EC2 security group for the Amazon EMR service to access clusters in VPC private subnets.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ExecutionEngineConfig

Specifies the execution engine (cluster) to run the notebook and perform the notebook execution, for example, an EMR cluster.

Contents

Id

The unique identifier of the execution engine. For an EMR cluster, this is the cluster ID.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

MasterInstanceSecurityGroupId

An optional unique ID of an EC2 security group to associate with the master instance of the EMR cluster for this notebook execution. For more information see [Specifying EC2 Security Groups for EMR Notebooks](#) in the *EMR Management Guide*.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Type

The type of execution engine. A value of `EMR` specifies an EMR cluster.

Type: String

Valid Values: `EMR`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

FailureDetails

The details of the step failure. The service attempts to detect the root cause for many common failures.

Contents

LogFile

The path to the log file where the step failure root cause was originally recorded.

Type: String

Required: No

Message

The descriptive message including the error the Amazon EMR service has identified as the cause of step failure. This is text from an error log that describes the root cause of the failure.

Type: String

Required: No

Reason

The reason for the step failure. In the case where the service cannot successfully determine the root cause of the failure, it returns "Unknown Error" as a reason.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

HadoopJarStepConfig

A job flow step consisting of a JAR file whose main function will be executed. The main function submits a job for Hadoop to execute and waits for the job to finish or fail.

Contents

Args

A list of command line arguments passed to the JAR file's main function when executed.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Jar

A path to a JAR file run during the step.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

MainClass

The name of the main class in the specified Java file. If not specified, the JAR file should specify a Main-Class in its manifest file.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Properties

A list of Java properties that are set when the step runs. You can use these properties to pass key-value pairs to your main function.

Type: Array of [KeyValue](#) (p. 246) objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

HadoopStepConfig

A cluster step consisting of a JAR file whose main function will be executed. The main function submits a job for Hadoop to execute and waits for the job to finish or fail.

Contents

Args

The list of command line arguments to pass to the JAR file's main function for execution.

Type: Array of strings

Required: No

Jar

The path to the JAR file that runs during the step.

Type: String

Required: No

MainClass

The name of the main class in the specified Java file. If not specified, the JAR file should specify a main class in its manifest file.

Type: String

Required: No

Properties

The list of Java properties that are set when the step runs. You can use these properties to pass key-value pairs to your main function.

Type: String to string map

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Valid Values: `ON_DEMAND` | `SPOT`

Required: No

PrivateDnsName

The private DNS name of the instance.

Type: String

Required: No

PrivateIpAddress

The private IP address of the instance.

Type: String

Required: No

PublicDnsName

The public DNS name of the instance.

Type: String

Required: No

PublicIpAddress

The public IP address of the instance.

Type: String

Required: No

Status

The current status of the instance.

Type: [InstanceStatus](#) (p. 225) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Contents

Type: Integer

Valid Range: Minimum value of 0.

Required: No

ProvisionedSpotCapacity

The number of Spot units that have been provisioned for this instance fleet to fulfill `TargetSpotCapacity`. This provisioned capacity might be less than or greater than `TargetSpotCapacity`.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

Status

The current status of the instance fleet.

Type: [InstanceFleetStatus](#) (p. 207) object

Required: No

TargetOnDemandCapacity

The target capacity of On-Demand units for the instance fleet, which determines how many On-Demand Instances to provision. When the instance fleet launches, Amazon EMR tries to provision On-Demand Instances as specified by [InstanceTypeConfig](#) (p. 227). Each instance configuration has a specified `WeightedCapacity`. When an On-Demand Instance is provisioned, the `WeightedCapacity` units count toward the target capacity. Amazon EMR provisions instances until the target capacity is totally fulfilled, even if this results in an overage. For example, if there are 2 units remaining to fulfill capacity, and Amazon EMR can only provision an instance with a `WeightedCapacity` of 5 units, the instance is provisioned, and the target capacity is exceeded by 3 units. You can use [InstanceFleet:ProvisionedOnDemandCapacity](#) (p. 199) to determine the Spot capacity units that have been provisioned for the instance fleet.

Note

If not specified or set to 0, only Spot Instances are provisioned for the instance fleet using `TargetSpotCapacity`. At least one of `TargetSpotCapacity` and `TargetOnDemandCapacity` should be greater than 0. For a master instance fleet, only one of `TargetSpotCapacity` and `TargetOnDemandCapacity` can be specified, and its value must be 1.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

TargetSpotCapacity

The target capacity of Spot units for the instance fleet, which determines how many Spot Instances to provision. When the instance fleet launches, Amazon EMR tries to provision Spot Instances as specified by [InstanceTypeConfig](#) (p. 227). Each instance configuration has a specified `WeightedCapacity`. When a Spot instance is provisioned, the `WeightedCapacity` units count toward the target capacity. Amazon EMR provisions instances until the target capacity is totally fulfilled, even if this results in an overage. For example, if there are 2 units remaining to fulfill capacity, and Amazon EMR can only provision an instance with a `WeightedCapacity` of 5 units, the instance is provisioned, and the target capacity is exceeded by 3 units. You can use [InstanceFleet:ProvisionedSpotCapacity](#) (p. 200) to determine the Spot capacity units that have been provisioned for the instance fleet.

Note

If not specified or set to 0, only On-Demand Instances are provisioned for the instance fleet. At least one of `TargetSpotCapacity` and `TargetOnDemandCapacity` should be greater than 0. For a master instance fleet, only one of `TargetSpotCapacity` and `TargetOnDemandCapacity` can be specified, and its value must be 1.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceFleetConfig

The configuration that defines an instance fleet.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

InstanceFleetType

The node type that the instance fleet hosts. Valid values are MASTER, CORE, and TASK.

Type: String

Valid Values: MASTER | CORE | TASK

Required: Yes

InstanceTypeConfigs

The instance type configurations that define the EC2 instances in the instance fleet.

Type: Array of [InstanceTypeConfig](#) (p. 227) objects

Required: No

LaunchSpecifications

The launch specification for the instance fleet.

Type: [InstanceFleetProvisioningSpecifications](#) (p. 205) object

Required: No

Name

The friendly name of the instance fleet.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

TargetOnDemandCapacity

The target capacity of On-Demand units for the instance fleet, which determines how many On-Demand Instances to provision. When the instance fleet launches, Amazon EMR tries to provision On-Demand Instances as specified by [InstanceTypeConfig](#) (p. 227). Each instance configuration has a specified `WeightedCapacity`. When an On-Demand Instance is provisioned, the `WeightedCapacity` units count toward the target capacity. Amazon EMR provisions instances until the target capacity is totally fulfilled, even if this results in an overage. For example, if there are 2 units remaining to fulfill capacity, and Amazon EMR can only provision an instance with a `WeightedCapacity` of 5 units, the instance is provisioned, and the target capacity is exceeded by 3 units.

Note

If not specified or set to 0, only Spot Instances are provisioned for the instance fleet using `TargetSpotCapacity`. At least one of `TargetSpotCapacity` and

`TargetOnDemandCapacity` should be greater than 0. For a master instance fleet, only one of `TargetSpotCapacity` and `TargetOnDemandCapacity` can be specified, and its value must be 1.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

TargetSpotCapacity

The target capacity of Spot units for the instance fleet, which determines how many Spot Instances to provision. When the instance fleet launches, Amazon EMR tries to provision Spot Instances as specified by [InstanceTypeConfig](#) (p. 227). Each instance configuration has a specified `WeightedCapacity`. When a Spot Instance is provisioned, the `WeightedCapacity` units count toward the target capacity. Amazon EMR provisions instances until the target capacity is totally fulfilled, even if this results in an overage. For example, if there are 2 units remaining to fulfill capacity, and Amazon EMR can only provision an instance with a `WeightedCapacity` of 5 units, the instance is provisioned, and the target capacity is exceeded by 3 units.

Note

If not specified or set to 0, only On-Demand Instances are provisioned for the instance fleet. At least one of `TargetSpotCapacity` and `TargetOnDemandCapacity` should be greater than 0. For a master instance fleet, only one of `TargetSpotCapacity` and `TargetOnDemandCapacity` can be specified, and its value must be 1.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceFleetModifyConfig

Configuration parameters for an instance fleet modification request.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

InstanceFleetId

A unique identifier for the instance fleet.

Type: String

Required: Yes

TargetOnDemandCapacity

The target capacity of On-Demand units for the instance fleet. For more information see [InstanceFleetConfig:TargetOnDemandCapacity \(p. 202\)](#).

Type: Integer

Valid Range: Minimum value of 0.

Required: No

TargetSpotCapacity

The target capacity of Spot units for the instance fleet. For more information, see [InstanceFleetConfig:TargetSpotCapacity \(p. 203\)](#).

Type: Integer

Valid Range: Minimum value of 0.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceFleetProvisioningSpecifications

The launch specification for Spot Instances in the fleet, which determines the defined duration, provisioning timeout behavior, and allocation strategy.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions. On-Demand and Spot Instance allocation strategies are available in Amazon EMR version 5.12.1 and later.

Contents

OnDemandSpecification

The launch specification for On-Demand Instances in the instance fleet, which determines the allocation strategy.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions. On-Demand Instances allocation strategy is available in Amazon EMR version 5.12.1 and later.

Type: [OnDemandProvisioningSpecification](#) (p. 256) object

Required: No

SpotSpecification

The launch specification for Spot Instances in the fleet, which determines the defined duration, provisioning timeout behavior, and allocation strategy.

Type: [SpotProvisioningSpecification](#) (p. 275) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceFleetStateChangeReason

Provides status change reason details for the instance fleet.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

Code

A code corresponding to the reason the state change occurred.

Type: String

Valid Values: `INTERNAL_ERROR` | `VALIDATION_ERROR` | `INSTANCE_FAILURE` | `CLUSTER_TERMINATED`

Required: No

Message

An explanatory message.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceFleetStatus

The status of the instance fleet.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

State

A code representing the instance fleet status.

- **PROVISIONING**—The instance fleet is provisioning EC2 resources and is not yet ready to run jobs.
- **BOOTSTRAPPING**—EC2 instances and other resources have been provisioned and the bootstrap actions specified for the instances are underway.
- **RUNNING**—EC2 instances and other resources are running. They are either executing jobs or waiting to execute jobs.
- **RESIZING**—A resize operation is underway. EC2 instances are either being added or removed.
- **SUSPENDED**—A resize operation could not complete. Existing EC2 instances are running, but instances can't be added or removed.
- **TERMINATING**—The instance fleet is terminating EC2 instances.
- **TERMINATED**—The instance fleet is no longer active, and all EC2 instances have been terminated.

Type: String

Valid Values: `PROVISIONING` | `BOOTSTRAPPING` | `RUNNING` | `RESIZING` | `SUSPENDED` | `TERMINATING` | `TERMINATED`

Required: No

StateChangeReason

Provides status change reason details for the instance fleet.

Type: [InstanceFleetStateChangeReason](#) (p. 206) object

Required: No

Timeline

Provides historical timestamps for the instance fleet, including the time of creation, the time it became ready to run jobs, and the time of termination.

Type: [InstanceFleetTimeline](#) (p. 209) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

InstanceFleetTimeline

Provides historical timestamps for the instance fleet, including the time of creation, the time it became ready to run jobs, and the time of termination.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

CreationDateTime

The time and date the instance fleet was created.

Type: Timestamp

Required: No

EndDateTime

The time and date the instance fleet terminated.

Type: Timestamp

Required: No

ReadyDateTime

The time and date the instance fleet was ready to run jobs.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Type: Array of [EbsBlockDevice](#) (p. 185) objects

Required: No

EbsOptimized

If the instance group is EBS-optimized. An Amazon EBS-optimized instance uses an optimized configuration stack and provides additional, dedicated capacity for Amazon EBS I/O.

Type: Boolean

Required: No

Id

The identifier of the instance group.

Type: String

Required: No

InstanceGroupType

The type of the instance group. Valid values are MASTER, CORE or TASK.

Type: String

Valid Values: MASTER | CORE | TASK

Required: No

InstanceType

The EC2 instance type for all instances in the instance group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

LastSuccessfullyAppliedConfigurations

A list of configurations that were successfully applied for an instance group last time.

Type: Array of [Configuration](#) (p. 184) objects

Required: No

LastSuccessfullyAppliedConfigurationsVersion

The version number of a configuration specification that was successfully applied for an instance group last time.

Type: Long

Required: No

Market

The marketplace to provision instances for this group. Valid values are ON_DEMAND or SPOT.

Type: String

Valid Values: ON_DEMAND | SPOT

Required: No

Name

The name of the instance group.

Type: String

Required: No

RequestedInstanceCount

The target number of instances for the instance group.

Type: Integer

Required: No

RunningInstanceCount

The number of instances currently running in this instance group.

Type: Integer

Required: No

ShrinkPolicy

Policy for customizing shrink operations.

Type: [ShrinkPolicy](#) (p. 271) object

Required: No

Status

The current status of the instance group.

Type: [InstanceGroupStatus](#) (p. 221) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceGroupConfig

Configuration defining a new instance group.

Contents

AutoScalingPolicy

An automatic scaling policy for a core instance group or task instance group in an Amazon EMR cluster. The automatic scaling policy defines how an instance group dynamically adds and terminates EC2 instances in response to the value of a CloudWatch metric. See [PutAutoScalingPolicy](#) (p. 104).

Type: [AutoScalingPolicy](#) (p. 158) object

Required: No

BidPrice

If specified, indicates that the instance group uses Spot Instances. This is the maximum price you are willing to pay for Spot Instances. Specify `OnDemandPrice` to set the amount equal to the On-Demand price, or specify an amount in USD.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Configurations

Note

Amazon EMR releases 4.x or later.

The list of configurations supplied for an EMR cluster instance group. You can specify a separate configuration for each instance group (master, core, and task).

Type: Array of [Configuration](#) (p. 184) objects

Required: No

CustomAmiId

The custom AMI ID to use for the provisioned instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

EbsConfiguration

EBS configurations that will be attached to each EC2 instance in the instance group.

Type: [EbsConfiguration](#) (p. 187) object

Required: No

InstanceCount

Target number of instances for the instance group.

Type: Integer

Required: Yes

InstanceRole

The role of the instance group in the cluster.

Type: String

Valid Values: MASTER | CORE | TASK

Required: Yes

InstanceType

The EC2 instance type for all instances in the instance group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

Market

Market type of the EC2 instances used to create a cluster node.

Type: String

Valid Values: ON_DEMAND | SPOT

Required: No

Name

Friendly name given to the instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceGroupDetail

Detailed information about an instance group.

Contents

BidPrice

If specified, indicates that the instance group uses Spot Instances. This is the maximum price you are willing to pay for Spot Instances. Specify `OnDemandPrice` to set the amount equal to the On-Demand price, or specify an amount in USD.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

CreationDateTime

The date/time the instance group was created.

Type: Timestamp

Required: Yes

CustomAmild

The custom AMI ID to use for the provisioned instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

EndDateTime

The date/time the instance group was terminated.

Type: Timestamp

Required: No

InstanceGroupId

Unique identifier for the instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

InstanceRequestCount

Target number of instances to run in the instance group.

Type: Integer

Required: Yes

InstanceRole

Instance group role in the cluster

Type: String

Valid Values: MASTER | CORE | TASK

Required: Yes

InstanceRunningCount

Actual count of running instances.

Type: Integer

Required: Yes

InstanceType

EC2 instance type.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

LastStateChangeReason

Details regarding the state of the instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Market

Market type of the EC2 instances used to create a cluster node.

Type: String

Valid Values: ON_DEMAND | SPOT

Required: Yes

Name

Friendly name for the instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

ReadyDateTime

The date/time the instance group was available to the cluster.

Type: Timestamp

Required: No

StartDateTime

The date/time the instance group was started.

Type: Timestamp

Required: No

State

State of instance group. The following values are deprecated: STARTING, TERMINATED, and FAILED.

Type: String

Valid Values: PROVISIONING | BOOTSTRAPPING | RUNNING | RECONFIGURING | RESIZING
| SUSPENDED | TERMINATING | TERMINATED | ARRESTED | SHUTTING_DOWN | ENDED

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceGroupModifyConfig

Modify the size or configurations of an instance group.

Contents

Configurations

A list of new or modified configurations to apply for an instance group.

Type: Array of [Configuration](#) (p. 184) objects

Required: No

EC2InstanceIdsToTerminate

The EC2 InstanceIds to terminate. After you terminate the instances, the instance group will not return to its original requested size.

Type: Array of strings

Required: No

InstanceCount

Target size for the instance group.

Type: Integer

Required: No

InstanceGroupId

Unique ID of the instance group to modify.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

ShrinkPolicy

Policy for customizing shrink operations.

Type: [ShrinkPolicy](#) (p. 271) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceGroupStateChangeReason

The status change reason details for the instance group.

Contents

Code

The programmable code for the state change reason.

Type: String

Valid Values: `INTERNAL_ERROR` | `VALIDATION_ERROR` | `INSTANCE_FAILURE` | `CLUSTER_TERMINATED`

Required: No

Message

The status change reason description.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceGroupStatus

The details of the instance group status.

Contents

State

The current state of the instance group.

Type: String

Valid Values: `PROVISIONING` | `BOOTSTRAPPING` | `RUNNING` | `RECONFIGURING` | `RESIZING` | `SUSPENDED` | `TERMINATING` | `TERMINATED` | `ARRESTED` | `SHUTTING_DOWN` | `ENDED`

Required: No

StateChangeReason

The status change reason details for the instance group.

Type: [InstanceGroupStateChangeReason](#) (p. 220) object

Required: No

Timeline

The timeline of the instance group status over time.

Type: [InstanceGroupTimeline](#) (p. 222) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceGroupTimeline

The timeline of the instance group lifecycle.

Contents

CreationDateTime

The creation date and time of the instance group.

Type: Timestamp

Required: No

EndDateTime

The date and time when the instance group terminated.

Type: Timestamp

Required: No

ReadyDateTime

The date and time when the instance group became ready to perform tasks.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceResizePolicy

Custom policy for requesting termination protection or termination of specific instances when shrinking an instance group.

Contents

InstancesToProtect

Specific list of instances to be protected when shrinking an instance group.

Type: Array of strings

Required: No

InstancesToTerminate

Specific list of instances to be terminated when shrinking an instance group.

Type: Array of strings

Required: No

InstanceTerminationTimeout

Decommissioning timeout override for the specific list of instances to be terminated.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceStateChangeReason

The details of the status change reason for the instance.

Contents

Code

The programmable code for the state change reason.

Type: String

Valid Values: `INTERNAL_ERROR` | `VALIDATION_ERROR` | `INSTANCE_FAILURE` | `BOOTSTRAP_FAILURE` | `CLUSTER_TERMINATED`

Required: No

Message

The status change reason description.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceStatus

The instance status details.

Contents

State

The current state of the instance.

Type: String

Valid Values: `AWAITING_FULFILLMENT` | `PROVISIONING` | `BOOTSTRAPPING` | `RUNNING` | `TERMINATED`

Required: No

StateChangeReason

The details of the status change reason for the instance.

Type: [InstanceStateChangeReason](#) (p. 224) object

Required: No

Timeline

The timeline of the instance status over time.

Type: [InstanceTimeline](#) (p. 226) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceTimeline

The timeline of the instance lifecycle.

Contents

CreationDateTime

The creation date and time of the instance.

Type: Timestamp

Required: No

EndDateTime

The date and time when the instance was terminated.

Type: Timestamp

Required: No

ReadyDateTime

The date and time when the instance was ready to perform tasks.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceTypeConfig

An instance type configuration for each instance type in an instance fleet, which determines the EC2 instances Amazon EMR attempts to provision to fulfill On-Demand and Spot target capacities. When you use an allocation strategy, you can include a maximum of 30 instance type configurations for a fleet. For more information about how to use an allocation strategy, see [Configure Instance Fleets](#). Without an allocation strategy, you may specify a maximum of five instance type configurations for a fleet.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

BidPrice

The bid price for each EC2 Spot Instance type as defined by `InstanceType`. Expressed in USD. If neither `BidPrice` nor `BidPriceAsPercentageOfOnDemandPrice` is provided, `BidPriceAsPercentageOfOnDemandPrice` defaults to 100%.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

BidPriceAsPercentageOfOnDemandPrice

The bid price, as a percentage of On-Demand price, for each EC2 Spot Instance as defined by `InstanceType`. Expressed as a number (for example, 20 specifies 20%). If neither `BidPrice` nor `BidPriceAsPercentageOfOnDemandPrice` is provided, `BidPriceAsPercentageOfOnDemandPrice` defaults to 100%.

Type: Double

Valid Range: Minimum value of 0.0.

Required: No

Configurations

A configuration classification that applies when provisioning cluster instances, which can include configurations for applications and software that run on the cluster.

Type: Array of [Configuration](#) (p. 184) objects

Required: No

CustomAmiId

The custom AMI ID to use for the instance type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

EbsConfiguration

The configuration of Amazon Elastic Block Store (Amazon EBS) attached to each instance as defined by `InstanceType`.

Type: [EbsConfiguration](#) (p. 187) object

Required: No

InstanceType

An EC2 instance type, such as `m3.xlarge`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: Yes

WeightedCapacity

The number of units that a provisioned instance of this type provides toward fulfilling the target capacities defined in [InstanceFleetConfig](#) (p. 202). This value is 1 for a master instance fleet, and must be 1 or greater for core and task instance fleets. Defaults to 1 if not specified.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

InstanceTypeSpecification

The configuration specification for each instance type in an instance fleet.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Contents

BidPrice

The bid price for each EC2 Spot Instance type as defined by `InstanceType`. Expressed in USD.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

BidPriceAsPercentageOfOnDemandPrice

The bid price, as a percentage of On-Demand price, for each EC2 Spot Instance as defined by `InstanceType`. Expressed as a number (for example, 20 specifies 20%).

Type: Double

Valid Range: Minimum value of 0.0.

Required: No

Configurations

A configuration classification that applies when provisioning cluster instances, which can include configurations for applications and software bundled with Amazon EMR.

Type: Array of [Configuration](#) (p. 184) objects

Required: No

CustomAmiId

The custom AMI ID to use for the instance type.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

EbsBlockDevices

The configuration of Amazon Elastic Block Store (Amazon EBS) attached to each instance as defined by `InstanceType`.

Type: Array of [EbsBlockDevice](#) (p. 185) objects

Required: No

EbsOptimized

Evaluates to `TRUE` when the specified `InstanceType` is EBS-optimized.

Type: Boolean

Required: No

InstanceType

The EC2 instance type, for example `m3.xlarge`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

WeightedCapacity

The number of units that a provisioned instance of this type provides toward fulfilling the target capacities defined in [InstanceFleetConfig](#) (p. 202). Capacity values represent performance characteristics such as vCPUs, memory, or I/O. If not specified, the default value is 1.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

JobFlowDetail

A description of a cluster (job flow).

Contents

AmiVersion

Applies only to Amazon EMR AMI versions 3.x and 2.x. For Amazon EMR releases 4.0 and later, `ReleaseLabel` is used. To specify a custom AMI, use `CustomAmiID`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

AutoScalingRole

An IAM role for automatic scaling policies. The default role is `EMR_AutoScaling_DefaultRole`. The IAM role provides a way for the automatic scaling feature to get the required permissions it needs to launch and terminate EC2 instances in an instance group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

BootstrapActions

A list of the bootstrap actions run by the job flow.

Type: Array of [BootstrapActionDetail](#) (p. 166) objects

Required: No

ExecutionStatusDetail

Describes the execution status of the job flow.

Type: [JobFlowExecutionStatusDetail](#) (p. 235) object

Required: Yes

Instances

Describes the Amazon EC2 instances of the job flow.

Type: [JobFlowInstancesDetail](#) (p. 241) object

Required: Yes

JobFlowId

The job flow identifier.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

JobFlowRole

The IAM role that was specified when the job flow was launched. The EC2 instances of the job flow assume this role.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

LogEncryptionKmsKeyId

The AWS KMS key used for encrypting log files. This attribute is only available with EMR version 5.30.0 and later, excluding EMR 6.0.0.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

LogUri

The location in Amazon S3 where log files for the job are stored.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Name

The name of the job flow.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

ScaleDownBehavior

The way that individual Amazon EC2 instances terminate when an automatic scale-in activity occurs or an instance group is resized. `TERMINATE_AT_INSTANCE_HOUR` indicates that Amazon EMR terminates nodes at the instance-hour boundary, regardless of when the request to terminate the instance was submitted. This option is only available with Amazon EMR 5.1.0 and later and is the default for clusters created using that version. `TERMINATE_AT_TASK_COMPLETION` indicates that Amazon EMR adds nodes to a deny list and drains tasks from nodes before terminating the Amazon EC2 instances, regardless of the instance-hour boundary. With either behavior, Amazon EMR removes the least active nodes first and blocks instance termination if it could lead to HDFS

Type: String

Required: No

The IAM role that is assumed by the Amazon EMR service to access AWS resources on your behalf.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

A list of steps run by the job flow.

Type: Array of [StepDetail](#) (p. 281) objects

Required: No

A list of strings set by third-party software when the job flow is launched. If you are not using third-party software to manage the job flow, this value is empty.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

Indicates whether the cluster is visible to IAM principals in the AWS account associated with the cluster. When `true`, IAM principals in the AWS account can perform EMR cluster actions that their IAM policies allow. When `false`, only the IAM principal that created the cluster and the AWS account root user can perform EMR actions, regardless of IAM permissions policies attached to other IAM principals.

The default value is `true` if a value is not provided when creating a cluster using the EMR API [RunJobFlow](#) (p. 122) command, the AWS CLI [create-cluster](#) command, or the AWS Management Console. IAM principals that are authorized to perform actions on the cluster can use the [SetVisibleToAllUsers](#) (p. 138) action to change the value on a running cluster. For more information, see [Understanding the EMR Cluster VisibleToAllUsers Setting](#) in the *Amazon EMR Management Guide*.

Type: Boolean

Required: No

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

JobFlowExecutionStatusDetail

Describes the status of the cluster (job flow).

Contents

CreationDateTime

The creation date and time of the job flow.

Type: Timestamp

Required: Yes

EndDateTime

The completion date and time of the job flow.

Type: Timestamp

Required: No

LastStateChangeReason

Description of the job flow last changed state.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

ReadyDateTime

The date and time when the job flow was ready to start running bootstrap actions.

Type: Timestamp

Required: No

StartDateTime

The start date and time of the job flow.

Type: Timestamp

Required: No

State

The state of the job flow.

Type: String

Valid Values: STARTING | BOOTSTRAPPING | RUNNING | WAITING | SHUTTING_DOWN |
TERMINATED | COMPLETED | FAILED

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

JobFlowInstancesConfig

A description of the Amazon EC2 instance on which the cluster (job flow) runs. A valid JobFlowInstancesConfig must contain either InstanceGroups or InstanceFleets. They cannot be used together. You may also have MasterInstanceType, SlaveInstanceType, and InstanceCount (all three must be present), but we don't recommend this configuration.

Contents

AdditionalMasterSecurityGroups

A list of additional Amazon EC2 security group IDs for the master node.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

AdditionalSlaveSecurityGroups

A list of additional Amazon EC2 security group IDs for the core and task nodes.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Ec2KeyName

The name of the EC2 key pair that can be used to connect to the master node using SSH as the user called "hadoop."

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Ec2SubnetId

Applies to clusters that use the uniform instance group configuration. To launch the cluster in Amazon Virtual Private Cloud (Amazon VPC), set this parameter to the identifier of the Amazon VPC subnet where you want the cluster to launch. If you do not specify this value and your account supports EC2-Classic, the cluster launches in EC2-Classic.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Ec2SubnetIds

Applies to clusters that use the instance fleet configuration. When multiple EC2 subnet IDs are specified, Amazon EMR evaluates them and launches instances in the optimal subnet.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

EmrManagedMasterSecurityGroup

The identifier of the Amazon EC2 security group for the master node. If you specify `EmrManagedMasterSecurityGroup`, you must also specify `EmrManagedSlaveSecurityGroup`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

EmrManagedSlaveSecurityGroup

The identifier of the Amazon EC2 security group for the core and task nodes. If you specify `EmrManagedSlaveSecurityGroup`, you must also specify `EmrManagedMasterSecurityGroup`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

HadoopVersion

Applies only to Amazon EMR release versions earlier than 4.0. The Hadoop version for the cluster. Valid inputs are "0.18" (no longer maintained), "0.20" (no longer maintained), "0.20.205" (no longer maintained), "1.0.3", "2.2.0", or "2.4.0". If you do not set this value, the default of 0.18 is used, unless the `AmiVersion` parameter is set in the `RunJobFlow` call, in which case the default version of Hadoop for that AMI version is used.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

InstanceCount

The number of EC2 instances in the cluster.

Type: Integer

Required: No

InstanceFleets

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Describes the EC2 instances and instance configurations for clusters that use the instance fleet configuration.

Type: Array of [InstanceFleetConfig](#) (p. 202) objects

Required: No

InstanceGroups

Configuration for the instance groups in a cluster.

Type: Array of [InstanceGroupConfig](#) (p. 213) objects

Required: No

KeepJobFlowAliveWhenNoSteps

Specifies whether the cluster should remain available after completing all steps. Defaults to `true`. For more information about configuring cluster termination, see [Control Cluster Termination](#) in the *EMR Management Guide*.

Type: Boolean

Required: No

MasterInstanceType

The EC2 instance type of the master node.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

Placement

The Availability Zone in which the cluster runs.

Type: [PlacementType](#) (p. 258) object

Required: No

ServiceAccessSecurityGroup

The identifier of the Amazon EC2 security group for the Amazon EMR service to access clusters in VPC private subnets.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

SlaveInstanceType

The EC2 instance type of the core and task nodes.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

TerminationProtected

Specifies whether to lock the cluster to prevent the Amazon EC2 instances from being terminated by API call, user intervention, or in the event of a job-flow error.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

JobFlowInstancesDetail

Specify the type of Amazon EC2 instances that the cluster (job flow) runs on.

Contents

Ec2KeyName

The name of an Amazon EC2 key pair that can be used to connect to the master node using SSH.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Ec2SubnetId

For clusters launched within Amazon Virtual Private Cloud, this is the identifier of the subnet where the cluster was launched.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

HadoopVersion

The Hadoop version for the cluster.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

InstanceCount

The number of Amazon EC2 instances in the cluster. If the value is 1, the same instance serves as both the master and core and task node. If the value is greater than 1, one instance is the master node and all others are core and task nodes.

Type: Integer

Required: Yes

InstanceGroups

Details about the instance groups in a cluster.

Type: Array of [InstanceGroupDetail](#) (p. 215) objects

Required: No

KeepJobFlowAliveWhenNoSteps

Specifies whether the cluster should remain available after completing all steps.

Type: Boolean

Required: No

MasterInstanceId

The Amazon EC2 instance identifier of the master node.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

MasterInstanceType

The Amazon EC2 master node instance type.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

MasterPublicDnsName

The DNS name of the master node. If the cluster is on a private subnet, this is the private DNS name. On a public subnet, this is the public DNS name.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

NormalizedInstanceHours

An approximation of the cost of the cluster, represented in m1.small/hours. This value is increased one time for every hour that an m1.small instance runs. Larger instances are weighted more heavily, so an Amazon EC2 instance that is roughly four times more expensive would result in the normalized instance hours being increased incrementally four times. This result is only an approximation and does not reflect the actual billing rate.

Type: Integer

Required: No

Placement

The Amazon EC2 Availability Zone for the cluster.

Type: [PlacementType](#) (p. 258) object

Required: No

SlaveInstanceType

The Amazon EC2 core and task node instance type.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 256.

Pattern: `[\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: Yes

TerminationProtected

Specifies whether the Amazon EC2 instances in the cluster are protected from termination by API calls, user intervention, or in the event of a job-flow error.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

KerberosAttributes

Attributes for Kerberos configuration when Kerberos authentication is enabled using a security configuration. For more information see [Use Kerberos Authentication](#) in the *Amazon EMR Management Guide*.

Contents

ADDomainJoinPassword

The Active Directory password for `ADDomainJoinUser`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

ADDomainJoinUser

Required only when establishing a cross-realm trust with an Active Directory domain. A user with sufficient privileges to join resources to the domain.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

CrossRealmTrustPrincipalPassword

Required only when establishing a cross-realm trust with a KDC in a different realm. The cross-realm principal password, which must be identical across realms.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

KdcAdminPassword

The password used within the cluster for the kadmin service on the cluster-dedicated KDC, which maintains Kerberos principals, password policies, and keytabs for the cluster.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: Yes

Realm

The name of the Kerberos realm to which all nodes in a cluster belong. For example, `EC2.INTERNAL`.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

KeyValue

A key-value pair.

Contents

Key

The unique identifier of a key-value pair.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Value

The value part of the identified key.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ManagedScalingPolicy

Managed scaling policy for an Amazon EMR cluster. The policy specifies the limits for resources that can be added or terminated from a cluster. The policy only applies to the core and task nodes. The master node cannot be scaled after initial configuration.

Contents

ComputeLimits

The EC2 unit limits for a managed scaling policy. The managed scaling activity of a cluster is not allowed to go above or below these limits. The limit only applies to the core and task nodes. The master node cannot be scaled after initial configuration.

Type: [ComputeLimits](#) (p. 182) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

MetricDimension

A CloudWatch dimension, which is specified using a `Key` (known as a `Name` in CloudWatch), `Value` pair. By default, Amazon EMR uses one dimension whose `Key` is `JobFlowID` and `Value` is a variable representing the cluster ID, which is `${emr.clusterId}`. This enables the rule to bootstrap when the cluster ID becomes available.

Contents

Key

The dimension name.

Type: String

Required: No

Value

The dimension value.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

NotebookExecution

A notebook execution. An execution is a specific instance that an EMR Notebook is run using the `StartNotebookExecution` action.

Contents

Arn

The Amazon Resource Name (ARN) of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

EditorId

The unique identifier of the EMR Notebook that is used for the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

EndTime

The timestamp when notebook execution ended.

Type: Timestamp

Required: No

ExecutionEngine

The execution engine, such as an EMR cluster, used to run the EMR notebook and perform the notebook execution.

Type: [ExecutionEngineConfig](#) (p. 192) object

Required: No

LastStateChangeReason

The reason for the latest status change of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

NotebookExecutionId

The unique identifier of a notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

NotebookExecutionName

A name for the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

NotebookInstanceSecurityGroupId

The unique identifier of the EC2 security group associated with the EMR Notebook instance. For more information see [Specifying EC2 Security Groups for EMR Notebooks](#) in the *EMR Management Guide*.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

NotebookParams

Input parameters in JSON format passed to the EMR Notebook at runtime for execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

OutputNotebookURI

The location of the notebook execution's output file in Amazon S3.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

StartTime

The timestamp when notebook execution started.

Type: Timestamp

Required: No

Status

The status of the notebook execution.

- `START_PENDING` indicates that the cluster has received the execution request but execution has not begun.
- `STARTING` indicates that the execution is starting on the cluster.
- `RUNNING` indicates that the execution is being processed by the cluster.
- `FINISHING` indicates that execution processing is in the final stages.
- `FINISHED` indicates that the execution has completed without error.
- `FAILING` indicates that the execution is failing and will not finish successfully.
- `FAILED` indicates that the execution failed.
- `STOP_PENDING` indicates that the cluster has received a `StopNotebookExecution` request and the stop is pending.
- `STOPPING` indicates that the cluster is in the process of stopping the execution as a result of a `StopNotebookExecution` request.
- `STOPPED` indicates that the execution stopped because of a `StopNotebookExecution` request.

Type: String

Valid Values: `START_PENDING` | `STARTING` | `RUNNING` | `FINISHING` | `FINISHED` | `FAILING` | `FAILED` | `STOP_PENDING` | `STOPPING` | `STOPPED`

Required: No

Tags

A list of tags associated with a notebook execution. Tags are user-defined key-value pairs that consist of a required key string with a maximum of 128 characters and an optional value string with a maximum of 256 characters.

Type: Array of [Tag \(p. 295\)](#) objects

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

NotebookExecutionSummary

Details for a notebook execution. The details include information such as the unique ID and status of the notebook execution.

Contents

EditorId

The unique identifier of the editor associated with the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

EndTime

The timestamp when notebook execution started.

Type: Timestamp

Required: No

NotebookExecutionId

The unique identifier of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

NotebookExecutionName

The name of the notebook execution.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

StartTime

The timestamp when notebook execution started.

Type: Timestamp

Required: No

Status

The status of the notebook execution.

- `START_PENDING` indicates that the cluster has received the execution request but execution has not begun.
- `STARTING` indicates that the execution is starting on the cluster.
- `RUNNING` indicates that the execution is being processed by the cluster.
- `FINISHING` indicates that execution processing is in the final stages.
- `FINISHED` indicates that the execution has completed without error.
- `FAILING` indicates that the execution is failing and will not finish successfully.
- `FAILED` indicates that the execution failed.
- `STOP_PENDING` indicates that the cluster has received a `StopNotebookExecution` request and the stop is pending.
- `STOPPING` indicates that the cluster is in the process of stopping the execution as a result of a `StopNotebookExecution` request.
- `STOPPED` indicates that the execution stopped because of a `StopNotebookExecution` request.

Type: String

Valid Values: `START_PENDING` | `STARTING` | `RUNNING` | `FINISHING` | `FINISHED` | `FAILING` | `FAILED` | `STOP_PENDING` | `STOPPING` | `STOPPED`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

OnDemandProvisioningSpecification

The launch specification for On-Demand Instances in the instance fleet, which determines the allocation strategy.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions. On-Demand Instances allocation strategy is available in Amazon EMR version 5.12.1 and later.

Contents

AllocationStrategy

Specifies the strategy to use in launching On-Demand instance fleets. Currently, the only option is `lowest-price` (the default), which launches the lowest price first.

Type: String

Valid Values: `lowest-price`

Required: Yes

CapacityReservationOptions

The launch specification for On-Demand instances in the instance fleet, which determines the allocation strategy.

Type: [OnDemandCapacityReservationOptions](#) (p. 254) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

PlacementGroupConfig

Placement group configuration for an Amazon EMR cluster. The configuration specifies the placement strategy that can be applied to instance roles during cluster creation.

To use this configuration, consider attaching managed policy `AmazonElasticMapReducePlacementGroupPolicy` to the EMR role.

Contents

InstanceRole

Role of the instance in the cluster.

Starting with Amazon EMR version 5.23.0, the only supported instance role is `MASTER`.

Type: String

Valid Values: `MASTER` | `CORE` | `TASK`

Required: Yes

PlacementStrategy

EC2 Placement Group strategy associated with instance role.

Starting with Amazon EMR version 5.23.0, the only supported placement strategy is `SPREAD` for the `MASTER` instance role.

Type: String

Valid Values: `SPREAD` | `PARTITION` | `CLUSTER` | `NONE`

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

PlacementType

The Amazon EC2 Availability Zone configuration of the cluster (job flow).

Contents

AvailabilityZone

The Amazon EC2 Availability Zone for the cluster. `AvailabilityZone` is used for uniform instance groups, while `AvailabilityZones` (plural) is used for instance fleets.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

AvailabilityZones

When multiple Availability Zones are specified, Amazon EMR evaluates them and launches instances in the optimal Availability Zone. `AvailabilityZones` is used for instance fleets, while `AvailabilityZone` (singular) is used for uniform instance groups.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

PortRange

A list of port ranges that are permitted to allow inbound traffic from all public IP addresses. To specify a single port, use the same value for `MinRange` and `MaxRange`.

Contents

MaxRange

The smallest port number in a specified range of port numbers.

Type: Integer

Valid Range: Minimum value of -1. Maximum value of 65535.

Required: No

MinRange

The smallest port number in a specified range of port numbers.

Type: Integer

Valid Range: Minimum value of -1. Maximum value of 65535.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ReleaseLabelFilter

The release label filters by application or version prefix.

Contents

Application

Optional release label application filter. For example, `spark@2.1.0`.

Type: String

Required: No

Prefix

Optional release label version prefix filter. For example, `emr-5`.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ScalingAction

The type of adjustment the automatic scaling activity makes when triggered, and the periodicity of the adjustment.

Contents

Market

Not available for instance groups. Instance groups use the market type specified for the group.

Type: String

Valid Values: `ON_DEMAND` | `SPOT`

Required: No

SimpleScalingPolicyConfiguration

The type of adjustment the automatic scaling activity makes when triggered, and the periodicity of the adjustment.

Type: [SimpleScalingPolicyConfiguration](#) (p. 272) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ScalingConstraints

The upper and lower EC2 instance limits for an automatic scaling policy. Automatic scaling activities triggered by automatic scaling rules will not cause an instance group to grow above or below these limits.

Contents

MaxCapacity

The upper boundary of EC2 instances in an instance group beyond which scaling activities are not allowed to grow. Scale-out activities will not add instances beyond this boundary.

Type: Integer

Required: Yes

MinCapacity

The lower boundary of EC2 instances in an instance group below which scaling activities are not allowed to shrink. Scale-in activities will not terminate instances below this boundary.

Type: Integer

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ScalingRule

A scale-in or scale-out rule that defines scaling activity, including the CloudWatch metric alarm that triggers activity, how EC2 instances are added or removed, and the periodicity of adjustments. The automatic scaling policy for an instance group can comprise one or more automatic scaling rules.

Contents

Action

The conditions that trigger an automatic scaling activity.

Type: [ScalingAction](#) (p. 261) object

Required: Yes

Description

A friendly, more verbose description of the automatic scaling rule.

Type: String

Required: No

Name

The name used to identify an automatic scaling rule. Rule names must be unique within a scaling policy.

Type: String

Required: Yes

Trigger

The CloudWatch alarm definition that determines when automatic scaling activity is triggered.

Type: [ScalingTrigger](#) (p. 264) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ScalingTrigger

The conditions that trigger an automatic scaling activity.

Contents

CloudWatchAlarmDefinition

The definition of a CloudWatch metric alarm. When the defined alarm conditions are met along with other trigger parameters, scaling activity begins.

Type: [CloudWatchAlarmDefinition](#) (p. 168) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ScriptBootstrapActionConfig

Configuration of the script to run during a bootstrap action.

Contents

Args

A list of command line arguments to pass to the bootstrap action script.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Path

Location in Amazon S3 of the script to run during a bootstrap action.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SecurityConfigurationSummary

The creation date and time, and name, of a security configuration.

Contents

CreationDateTime

The date and time the security configuration was created.

Type: Timestamp

Required: No

Name

The name of the security configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SessionMappingDetail

Details for an Amazon EMR Studio session mapping including creation time, user or group ID, Studio ID, and so on.

Contents

CreationTime

The time the session mapping was created.

Type: Timestamp

Required: No

IdentityId

The globally unique identifier (GUID) of the user or group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdentityName

The name of the user or group. For more information, see [UserName](#) and [DisplayName](#) in the *AWS SSO Identity Store API Reference*.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdentityType

Specifies whether the identity mapped to the Amazon EMR Studio is a user or a group.

Type: String

Valid Values: USER | GROUP

Required: No

LastModifiedTime

The time the session mapping was last modified.

Type: Timestamp

Required: No

SessionPolicyArn

The Amazon Resource Name (ARN) of the session policy associated with the user or group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Studioid

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SessionMappingSummary

Details for an Amazon EMR Studio session mapping. The details do not include the time the session mapping was last modified.

Contents

CreationTime

The time the session mapping was created.

Type: Timestamp

Required: No

IdentityId

The globally unique identifier (GUID) of the user or group from the AWS SSO Identity Store.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdentityName

The name of the user or group. For more information, see [UserName](#) and [DisplayName](#) in the *AWS SSO Identity Store API Reference*.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdentityType

Specifies whether the identity mapped to the Amazon EMR Studio is a user or a group.

Type: String

Valid Values: `USER` | `GROUP`

Required: No

SessionPolicyArn

The Amazon Resource Name (ARN) of the session policy associated with the user or group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Studioid

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

ShrinkPolicy

Policy for customizing shrink operations. Allows configuration of decommissioning timeout and targeted instance shrinking.

Contents

DecommissionTimeout

The desired timeout for decommissioning an instance. Overrides the default YARN decommissioning timeout.

Type: Integer

Required: No

InstanceResizePolicy

Custom policy for requesting termination protection or termination of specific instances when shrinking an instance group.

Type: [InstanceResizePolicy](#) (p. 223) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SimpleScalingPolicyConfiguration

An automatic scaling configuration, which describes how the policy adds or removes instances, the cooldown period, and the number of EC2 instances that will be added each time the CloudWatch metric alarm condition is satisfied.

Contents

AdjustmentType

The way in which EC2 instances are added (if `ScalingAdjustment` is a positive number) or terminated (if `ScalingAdjustment` is a negative number) each time the scaling activity is triggered. `CHANGE_IN_CAPACITY` is the default. `CHANGE_IN_CAPACITY` indicates that the EC2 instance count increments or decrements by `ScalingAdjustment`, which should be expressed as an integer. `PERCENT_CHANGE_IN_CAPACITY` indicates the instance count increments or decrements by the percentage specified by `ScalingAdjustment`, which should be expressed as an integer. For example, 20 indicates an increase in 20% increments of cluster capacity. `EXACT_CAPACITY` indicates the scaling activity results in an instance group with the number of EC2 instances specified by `ScalingAdjustment`, which should be expressed as a positive integer.

Type: String

Valid Values: `CHANGE_IN_CAPACITY` | `PERCENT_CHANGE_IN_CAPACITY` | `EXACT_CAPACITY`

Required: No

CoolDown

The amount of time, in seconds, after a scaling activity completes before any further trigger-related scaling activities can start. The default value is 0.

Type: Integer

Required: No

ScalingAdjustment

The amount by which to scale in or scale out, based on the specified `AdjustmentType`. A positive value adds to the instance group's EC2 instance count while a negative number removes instances. If `AdjustmentType` is set to `EXACT_CAPACITY`, the number should only be a positive integer. If `AdjustmentType` is set to `PERCENT_CHANGE_IN_CAPACITY`, the value should express the percentage as an integer. For example, -20 indicates a decrease in 20% increments of cluster capacity.

Type: Integer

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SimplifiedApplication

The returned release label application names or versions.

Contents

Name

The returned release label application name. For example, `hadoop`.

Type: String

Required: No

Version

The returned release label application version. For example, `3 . 2 . 1`.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SpotProvisioningSpecification

The launch specification for Spot Instances in the instance fleet, which determines the defined duration, provisioning timeout behavior, and allocation strategy.

Note

The instance fleet configuration is available only in Amazon EMR versions 4.8.0 and later, excluding 5.0.x versions. Spot Instance allocation strategy is available in Amazon EMR version 5.12.1 and later.

Note

Spot Instances with a defined duration (also known as Spot blocks) are no longer available to new customers from July 1, 2021. For customers who have previously used the feature, we will continue to support Spot Instances with a defined duration until December 31, 2022.

Contents

AllocationStrategy

Specifies the strategy to use in launching Spot Instance fleets. Currently, the only option is capacity-optimized (the default), which launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching.

Type: String

Valid Values: `capacity-optimized`

Required: No

BlockDurationMinutes

The defined duration for Spot Instances (also known as Spot blocks) in minutes. When specified, the Spot Instance does not terminate before the defined duration expires, and defined duration pricing for Spot Instances applies. Valid values are 60, 120, 180, 240, 300, or 360. The duration period starts as soon as a Spot Instance receives its instance ID. At the end of the duration, Amazon EC2 marks the Spot Instance for termination and provides a Spot Instance termination notice, which gives the instance a two-minute warning before it terminates.

Note

Spot Instances with a defined duration (also known as Spot blocks) are no longer available to new customers from July 1, 2021. For customers who have previously used the feature, we will continue to support Spot Instances with a defined duration until December 31, 2022.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

TimeoutAction

The action to take when `TargetSpotCapacity` has not been fulfilled when the `TimeoutDurationMinutes` has expired; that is, when all Spot Instances could not be provisioned within the Spot provisioning timeout. Valid values are `TERMINATE_CLUSTER` and `SWITCH_TO_ON_DEMAND`. `SWITCH_TO_ON_DEMAND` specifies that if no Spot Instances are available, On-Demand Instances should be provisioned to fulfill any remaining Spot capacity.

Type: String

Valid Values: `SWITCH_TO_ON_DEMAND` | `TERMINATE_CLUSTER`

Required: Yes

TimeoutDurationMinutes

The spot provisioning timeout period in minutes. If Spot Instances are not provisioned within this time period, the `TimeoutAction` is taken. Minimum value is 5 and maximum value is 1440. The timeout applies only during initial provisioning, when the cluster is first created.

Type: Integer

Valid Range: Minimum value of 0.

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Step

This represents a step in a cluster.

Contents

ActionOnFailure

The action to take when the cluster step fails. Possible values are `TERMINATE_CLUSTER`, `CANCEL_AND_WAIT`, and `CONTINUE`. `TERMINATE_JOB_FLOW` is provided for backward compatibility. We recommend using `TERMINATE_CLUSTER` instead.

If a cluster's `StepConcurrencyLevel` is greater than 1, do not use `AddJobFlowSteps` to submit a step with this parameter set to `CANCEL_AND_WAIT` or `TERMINATE_CLUSTER`. The step is not submitted and the action fails with a message that the `ActionOnFailure` setting is not valid.

If you change a cluster's `StepConcurrencyLevel` to be greater than 1 while a step is running, the `ActionOnFailure` parameter may not behave as you expect. In this case, for a step that fails with this parameter set to `CANCEL_AND_WAIT`, pending steps and the running step are not canceled; for a step that fails with this parameter set to `TERMINATE_CLUSTER`, the cluster does not terminate.

Type: String

Valid Values: `TERMINATE_JOB_FLOW` | `TERMINATE_CLUSTER` | `CANCEL_AND_WAIT` | `CONTINUE`

Required: No

Config

The Hadoop job configuration of the cluster step.

Type: [HadoopStepConfig \(p. 196\)](#) object

Required: No

Id

The identifier of the cluster step.

Type: String

Required: No

Name

The name of the cluster step.

Type: String

Required: No

Status

The current execution status details of the cluster step.

Type: [StepStatus \(p. 285\)](#) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StepConfig

Specification for a cluster (job flow) step.

Contents

ActionOnFailure

The action to take when the step fails. Use one of the following values:

- `TERMINATE_CLUSTER` - Shuts down the cluster.
- `CANCEL_AND_WAIT` - Cancels any pending steps and returns the cluster to the `WAITING` state.
- `CONTINUE` - Continues to the next step in the queue.
- `TERMINATE_JOB_FLOW` - Shuts down the cluster. `TERMINATE_JOB_FLOW` is provided for backward compatibility. We recommend using `TERMINATE_CLUSTER` instead.

If a cluster's `StepConcurrencyLevel` is greater than 1, do not use `AddJobFlowSteps` to submit a step with this parameter set to `CANCEL_AND_WAIT` or `TERMINATE_CLUSTER`. The step is not submitted and the action fails with a message that the `ActionOnFailure` setting is not valid.

If you change a cluster's `StepConcurrencyLevel` to be greater than 1 while a step is running, the `ActionOnFailure` parameter may not behave as you expect. In this case, for a step that fails with this parameter set to `CANCEL_AND_WAIT`, pending steps and the running step are not canceled; for a step that fails with this parameter set to `TERMINATE_CLUSTER`, the cluster does not terminate.

Type: String

Valid Values: `TERMINATE_JOB_FLOW` | `TERMINATE_CLUSTER` | `CANCEL_AND_WAIT` | `CONTINUE`

Required: No

HadoopJarStep

The JAR file used for the step.

Type: [HadoopJarStepConfig](#) (p. 194) object

Required: Yes

Name

The name of the step.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: `[\u0020-\u007F\u0080-\u00FF\u0100-\u017F\u0180-\u01FF\u0200-\u02FF\u0300-\u036F\u0370-\u039F\u03A0-\u03C9\u03D0-\u03FF\u0400-\u047F\u0480-\u04FF\u0500-\u056F\u0570-\u059F\u05A0-\u05BF\u05C0-\u05FF\u0600-\u06FF\u0700-\u07FF\u0800-\u08FF\u0900-\u097F\u0980-\u09FF\u0A00-\u0A7F\u0A80-\u0AFF\u0B00-\u0B7F\u0B80-\u0BFF\u0C00-\u0C7F\u0C80-\u0CFF\u0D00-\u0D7F\u0D80-\u0DBF\u0DC0-\u0DBF\u0E00-\u0E7F\u0E80-\u0EFF\u0F00-\u0FFF\u1000-\u107F\u1080-\u10FF\u1100-\u117F\u1180-\u11FF\u1200-\u127F\u1280-\u12FF\u1300-\u137F\u1380-\u13FF\u1400-\u147F\u1480-\u14FF\u1500-\u157F\u1580-\u15FF\u1600-\u167F\u1680-\u16FF\u1700-\u177F\u1780-\u17FF\u1800-\u187F\u1880-\u18FF\u1900-\u197F\u1980-\u19FF\u1A00-\u1A7F\u1A80-\u1AFF\u1B00-\u1B7F\u1B80-\u1BFF\u1C00-\u1C7F\u1C80-\u1CFF\u1D00-\u1D7F\u1D80-\u1DBF\u1E00-\u1E7F\u1E80-\u1EFF\u1F00-\u1FFF\u2000-\u207F\u2080-\u20FF\u2100-\u217F\u2180-\u21FF\u2200-\u227F\u2280-\u22FF\u2300-\u237F\u2380-\u23FF\u2400-\u247F\u2480-\u24FF\u2500-\u257F\u2580-\u25FF\u2600-\u267F\u2680-\u26FF\u2700-\u277F\u2780-\u27FF\u2800-\u287F\u2880-\u28FF\u2900-\u297F\u2980-\u29FF\u2A00-\u2A7F\u2A80-\u2AFF\u2B00-\u2B7F\u2B80-\u2BFF\u2C00-\u2C7F\u2C80-\u2CFF\u2D00-\u2D7F\u2D80-\u2DBF\u2E00-\u2E7F\u2E80-\u2EFF\u2F00-\u2FFF\u3000-\u307F\u3080-\u30FF\u3100-\u317F\u3180-\u31FF\u3200-\u327F\u3280-\u32FF\u3300-\u337F\u3380-\u33FF\u3400-\u347F\u3480-\u34FF\u3500-\u357F\u3580-\u35FF\u3600-\u367F\u3680-\u36FF\u3700-\u377F\u3780-\u37FF\u3800-\u387F\u3880-\u38FF\u3900-\u397F\u3980-\u39FF\u3A00-\u3A7F\u3A80-\u3AFF\u3B00-\u3B7F\u3B80-\u3BFF\u3C00-\u3C7F\u3C80-\u3CFF\u3D00-\u3D7F\u3D80-\u3DBF\u3E00-\u3E7F\u3E80-\u3EFF\u3F00-\u3FFF\u4000-\u407F\u4080-\u40FF\u4100-\u417F\u4180-\u41FF\u4200-\u427F\u4280-\u42FF\u4300-\u437F\u4380-\u43FF\u4400-\u447F\u4480-\u44FF\u4500-\u457F\u4580-\u45FF\u4600-\u467F\u4680-\u46FF\u4700-\u477F\u4780-\u47FF\u4800-\u487F\u4880-\u48FF\u4900-\u497F\u4980-\u49FF\u4A00-\u4A7F\u4A80-\u4AFF\u4B00-\u4B7F\u4B80-\u4BFF\u4C00-\u4C7F\u4C80-\u4CFF\u4D00-\u4D7F\u4D80-\u4DBF\u4E00-\u4E7F\u4E80-\u4EFF\u4F00-\u4FFF\u5000-\u507F\u5080-\u50FF\u5100-\u517F\u5180-\u51FF\u5200-\u527F\u5280-\u52FF\u5300-\u537F\u5380-\u53FF\u5400-\u547F\u5480-\u54FF\u5500-\u557F\u5580-\u55FF\u5600-\u567F\u5680-\u56FF\u5700-\u577F\u5780-\u57FF\u5800-\u587F\u5880-\u58FF\u5900-\u597F\u5980-\u59FF\u5A00-\u5A7F\u5A80-\u5AFF\u5B00-\u5B7F\u5B80-\u5BFF\u5C00-\u5C7F\u5C80-\u5CFF\u5D00-\u5D7F\u5D80-\u5DBF\u5E00-\u5E7F\u5E80-\u5EFF\u5F00-\u5FFF\u6000-\u607F\u6080-\u60FF\u6100-\u617F\u6180-\u61FF\u6200-\u627F\u6280-\u62FF\u6300-\u637F\u6380-\u63FF\u6400-\u647F\u6480-\u64FF\u6500-\u657F\u6580-\u65FF\u6600-\u667F\u6680-\u66FF\u6700-\u677F\u6780-\u67FF\u6800-\u687F\u6880-\u68FF\u6900-\u697F\u6980-\u69FF\u6A00-\u6A7F\u6A80-\u6AFF\u6B00-\u6B7F\u6B80-\u6BFF\u6C00-\u6C7F\u6C80-\u6CFF\u6D00-\u6D7F\u6D80-\u6DBF\u6E00-\u6E7F\u6E80-\u6EFF\u6F00-\u6FFF\u7000-\u707F\u7080-\u70FF\u7100-\u717F\u7180-\u71FF\u7200-\u727F\u7280-\u72FF\u7300-\u737F\u7380-\u73FF\u7400-\u747F\u7480-\u74FF\u7500-\u757F\u7580-\u75FF\u7600-\u767F\u7680-\u76FF\u7700-\u777F\u7780-\u77FF\u7800-\u787F\u7880-\u78FF\u7900-\u797F\u7980-\u79FF\u7A00-\u7A7F\u7A80-\u7AFF\u7B00-\u7B7F\u7B80-\u7BFF\u7C00-\u7C7F\u7C80-\u7CFF\u7D00-\u7D7F\u7D80-\u7DBF\u7E00-\u7E7F\u7E80-\u7EFF\u7F00-\u7FFF\u8000-\u807F\u8080-\u80FF\u8100-\u817F\u8180-\u81FF\u8200-\u827F\u8280-\u82FF\u8300-\u837F\u8380-\u83FF\u8400-\u847F\u8480-\u84FF\u8500-\u857F\u8580-\u85FF\u8600-\u867F\u8680-\u86FF\u8700-\u877F\u8780-\u87FF\u8800-\u887F\u8880-\u88FF\u8900-\u897F\u8980-\u89FF\u8A00-\u8A7F\u8A80-\u8AFF\u8B00-\u8B7F\u8B80-\u8BFF\u8C00-\u8C7F\u8C80-\u8CFF\u8D00-\u8D7F\u8D80-\u8DBF\u8E00-\u8E7F\u8E80-\u8EFF\u8F00-\u8FFF\u9000-\u907F\u9080-\u90FF\u9100-\u917F\u9180-\u91FF\u9200-\u927F\u9280-\u92FF\u9300-\u937F\u9380-\u93FF\u9400-\u947F\u9480-\u94FF\u9500-\u957F\u9580-\u95FF\u9600-\u967F\u9680-\u96FF\u9700-\u977F\u9780-\u97FF\u9800-\u987F\u9880-\u98FF\u9900-\u997F\u9980-\u99FF\u9A00-\u9A7F\u9A80-\u9AFF\u9B00-\u9B7F\u9B80-\u9BFF\u9C00-\u9C7F\u9C80-\u9CFF\u9D00-\u9D7F\u9D80-\u9DBF\u9E00-\u9E7F\u9E80-\u9EFF\u9F00-\u9FFF\uA000-\uA07F\uA080-\uA0FF\uA100-\uA17F\uA180-\uA1FF\uA200-\uA27F\uA280-\uA2FF\uA300-\uA37F\uA380-\uA3FF\uA400-\uA47F\uA480-\uA4FF\uA500-\uA57F\uA580-\uA5FF\uA600-\uA67F\uA680-\uA6FF\uA700-\uA77F\uA780-\uA7FF\uA800-\uA87F\uA880-\uA8FF\uA900-\uA97F\uA980-\uA9FF\uAA00-\uAA7F\uAA80-\uAAFF\uAB00-\uAB7F\uAB80-\uABFF\uAC00-\uAC7F\uAC80-\uACFF\uAD00-\uAD7F\uAD80-\uADFF\uAE00-\uAE7F\uAE80-\uAEFF\uAF00-\uAFFF\uB000-\uB07F\uB080-\uB0FF\uB100-\uB17F\uB180-\uB1FF\uB200-\uB27F\uB280-\uB2FF\uB300-\uB37F\uB380-\uB3FF\uB400-\uB47F\uB480-\uB4FF\uB500-\uB57F\uB580-\uB5FF\uB600-\uB67F\uB680-\uB6FF\uB700-\uB77F\uB780-\uB7FF\uB800-\uB87F\uB880-\uB8FF\uB900-\uB97F\uB980-\uB9FF\uBA00-\uBA7F\uBA80-\uBAFF\uBB00-\uBB7F\uBB80-\uBBFF\uBC00-\uBC7F\uBC80-\uBCFF\uBD00-\uBD7F\uBD80-\uBDBF\uBE00-\uBE7F\uBE80-\uBEFF\uBF00-\uBFFF\uC000-\uC07F\uC080-\uC0FF\uC100-\uC17F\uC180-\uC1FF\uC200-\uC27F\uC280-\uC2FF\uC300-\uC37F\uC380-\uC3FF\uC400-\uC47F\uC480-\uC4FF\uC500-\uC57F\uC580-\uC5FF\uC600-\uC67F\uC680-\uC6FF\uC700-\uC77F\uC780-\uC7FF\uC800-\uC87F\uC880-\uC8FF\uC900-\uC97F\uC980-\uC9FF\uCA00-\uCA7F\uCA80-\uCAFF\uCB00-\uCB7F\uCB80-\uCBFF\uCC00-\uCC7F\uCC80-\uCCFF\uCD00-\uCD7F\uCD80-\uCDFF\uCE00-\uCE7F\uCE80-\uCEFF\uCF00-\uCFFF\uD000-\uD07F\uD080-\uD0FF\uD100-\uD17F\uD180-\uD1FF\uD200-\uD27F\uD280-\uD2FF\uD300-\uD37F\uD380-\uD3FF\uD400-\uD47F\uD480-\uD4FF\uD500-\uD57F\uD580-\uD5FF\uD600-\uD67F\uD680-\uD6FF\uD700-\uD77F\uD780-\uD7FF\uD800-\uD87F\uD880-\uD8FF\uD900-\uD97F\uD980-\uD9FF\uDA00-\uDA7F\uDA80-\uDAFF\uDB00-\uDB7F\uDB80-\uDBFF\uDC00-\uDC7F\uDC80-\uDCFF\uDD00-\uDD7F\uDD80-\uDDFF\uDE00-\uDE7F\uDE80-\uDEFF\uDF00-\uDF7F\uDF80-\uDFFF\uE000-\uE07F\uE080-\uE0FF\uE100-\uE17F\uE180-\uE1FF\uE200-\uE27F\uE280-\uE2FF\uE300-\uE37F\uE380-\uE3FF\uE400-\uE47F\uE480-\uE4FF\uE500-\uE57F\uE580-\uE5FF\uE600-\uE67F\uE680-\uE6FF\uE700-\uE77F\uE780-\uE7FF\uE800-\uE87F\uE880-\uE8FF\uE900-\uE97F\uE980-\uE9FF\uEA00-\uEA7F\uEA80-\uEAFF\uEB00-\uEB7F\uEB80-\uEBFF\uEC00-\uEC7F\uEC80-\uECFF\uED00-\uED7F\uED80-\uEDFF\uEE00-\uEE7F\uEE80-\uEEFF\uEF00-\uEFFF\uF000-\uF07F\uF080-\uF0FF\uF100-\uF17F\uF180-\uF1FF\uF200-\uF27F\uF280-\uF2FF\uF300-\uF37F\uF380-\uF3FF\uF400-\uF47F\uF480-\uF4FF\uF500-\uF57F\uF580-\uF5FF\uF600-\uF67F\uF680-\uF6FF\uF700-\uF77F\uF780-\uF7FF\uF800-\uF87F\uF880-\uF8FF\uF900-\uF97F\uF980-\uF9FF\uFA00-\uFA7F\uFA80-\uFAFF\uFB00-\uFB7F\uFB80-\uFBFF\uFC00-\uFC7F\uFC80-\uFCFF\uFD00-\uFD7F\uFD80-\uFDFF\uFE00-\uFE7F\uFE80-\uFEFF\uFF00-\uFF7F\uFF80-\uFFFF]`

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StepDetail

Combines the execution state and configuration of a step.

Contents

ExecutionStatusDetail

The description of the step status.

Type: [StepExecutionStatusDetail](#) (p. 282) object

Required: Yes

StepConfig

The step configuration.

Type: [StepConfig](#) (p. 279) object

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StepExecutionStatusDetail

The execution state of a step.

Contents

CreationDateTime

The creation date and time of the step.

Type: Timestamp

Required: Yes

EndDateTime

The completion date and time of the step.

Type: Timestamp

Required: No

LastStateChangeReason

A description of the step's current state.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

StartDateTime

The start date and time of the step.

Type: Timestamp

Required: No

State

The state of the step.

Type: String

Valid Values: PENDING | RUNNING | CONTINUE | COMPLETED | CANCELLED | FAILED | INTERRUPTED

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

StepStateChangeReason

The details of the step state change reason.

Contents

Code

The programmable code for the state change reason. Note: Currently, the service provides no code for the state change.

Type: String

Valid Values: `NONE`

Required: No

Message

The descriptive message for the state change reason.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StepStatus

The execution status details of the cluster step.

Contents

FailureDetails

The details for the step failure including reason, message, and log file path where the root cause was identified.

Type: [FailureDetails](#) (p. 193) object

Required: No

State

The execution state of the cluster step.

Type: String

Valid Values: PENDING | CANCEL_PENDING | RUNNING | COMPLETED | CANCELLED | FAILED | INTERRUPTED

Required: No

StateChangeReason

The reason for the step execution status change.

Type: [StepStateChangeReason](#) (p. 284) object

Required: No

Timeline

The timeline of the cluster step status over time.

Type: [StepTimeline](#) (p. 287) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StepSummary

The summary of the cluster step.

Contents

ActionOnFailure

The action to take when the cluster step fails. Possible values are TERMINATE_CLUSTER, CANCEL_AND_WAIT, and CONTINUE. TERMINATE_JOB_FLOW is available for backward compatibility.

Type: String

Valid Values: `TERMINATE_JOB_FLOW` | `TERMINATE_CLUSTER` | `CANCEL_AND_WAIT` | `CONTINUE`

Required: No

Config

The Hadoop job configuration of the cluster step.

Type: [HadoopStepConfig](#) (p. 196) object

Required: No

Id

The identifier of the cluster step.

Type: String

Required: No

Name

The name of the cluster step.

Type: String

Required: No

Status

The current execution status details of the cluster step.

Type: [StepStatus](#) (p. 285) object

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StepTimeline

The timeline of the cluster step lifecycle.

Contents

CreationDateTime

The date and time when the cluster step was created.

Type: Timestamp

Required: No

EndDateTime

The date and time when the cluster step execution completed or failed.

Type: Timestamp

Required: No

StartDateTime

The date and time when the cluster step execution started.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Studio

Details for an Amazon EMR Studio including ID, creation time, name, and so on.

Contents

AuthMode

Specifies whether the Amazon EMR Studio authenticates users using IAM or AWS SSO.

Type: String

Valid Values: SSO | IAM

Required: No

CreationTime

The time the Amazon EMR Studio was created.

Type: Timestamp

Required: No

DefaultS3Location

The Amazon S3 location to back up Amazon EMR Studio Workspaces and notebook files.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Description

The detailed description of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

EngineSecurityGroupId

The ID of the Engine security group associated with the Amazon EMR Studio. The Engine security group allows inbound network traffic from resources in the Workspace security group.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

IdpAuthUrl

Your identity provider's authentication endpoint. Amazon EMR Studio redirects federated users to this endpoint for authentication when logging in to a Studio with the Studio URL.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

IdpRelayStateParameterName

The name of your identity provider's RelayState parameter.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Name

The name of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

ServiceRole

The name of the IAM role assumed by the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

StudioArn

The Amazon Resource Name (ARN) of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

Studioid

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

SubnetIds

The list of IDs of the subnets associated with the Amazon EMR Studio.

Type: Array of strings

Required: No

Tags

A list of tags associated with the Amazon EMR Studio.

Type: Array of [Tag \(p. 295\)](#) objects

Required: No

Url

The unique access URL of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

UserRole

The name of the IAM role assumed by users logged in to the Amazon EMR Studio. A Studio only requires a `UserRole` when you use IAM authentication.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

VpcId

The ID of the VPC associated with the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

WorkspaceSecurityGroupId

The ID of the Workspace security group associated with the Amazon EMR Studio. The Workspace security group allows outbound network traffic to resources in the Engine security group and to the internet.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

StudioSummary

Details for an Amazon EMR Studio, including ID, Name, VPC, and Description. The details do not include subnets, IAM roles, security groups, or tags associated with the Studio.

Contents

AuthMode

Specifies whether the Studio authenticates users using IAM or AWS SSO.

Type: String

Valid Values: SSO | IAM

Required: No

CreationTime

The time when the Amazon EMR Studio was created.

Type: Timestamp

Required: No

Description

The detailed description of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Name

The name of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Studioid

The ID of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Url

The unique access URL of the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

VpcId

The ID of the Virtual Private Cloud (Amazon VPC) associated with the Amazon EMR Studio.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

SupportedProductConfig

The list of supported product configurations that allow user-supplied arguments. EMR accepts these arguments and forwards them to the corresponding installation script as bootstrap action arguments.

Contents

Args

The list of user-supplied arguments.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 10280.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

Name

The name of the product configuration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 256.

Pattern: [\u0020-\uD7FF\uE000-\uFFFD\uD800\uDC00-\uDBFF\uDFFF\r\n\t] *

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Tag

A key-value pair containing user-defined metadata that you can associate with an Amazon EMR resource. Tags make it easier to associate clusters in various ways, such as grouping clusters to track your Amazon EMR resource allocation costs. For more information, see [Tag Clusters](#).

Contents

Key

A user-defined key, which is the minimum required information for a valid tag. For more information, see [Tag](#) .

Type: String

Required: No

Value

A user-defined value, which is optional in a tag. For more information, see [Tag Clusters](#).

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

VolumeSpecification

EBS volume specifications such as volume type, IOPS, and size (GiB) that will be requested for the EBS volume attached to an EC2 instance in the cluster.

Contents

Iops

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

Type: Integer

Required: No

SizeInGB

The volume size, in gibibytes (GiB). This can be a number from 1 - 1024. If the volume type is EBS-optimized, the minimum value is 10.

Type: Integer

Required: Yes

VolumeType

The volume type. Volume types supported are gp2, io1, standard.

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

Action

The action to be performed.

Type: string

Required: Yes

Version

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: `access_key/YYYYMMDD/region/service/aws4_request`.

For more information, see [Task 2: Create a String to Sign for Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'THHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is

not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Handling Dates in Signature Version 4](#) in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to [AWS Services That Work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from the AWS Security Token Service, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see [Task 1: Create a Canonical Request For Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

InvalidAction

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 400

InvalidClientTokenId

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

An invalid or out-of-range value was supplied for the input parameter.

HTTP Status Code: 400

InvalidQueryParameter

The AWS query string is malformed or does not adhere to AWS standards.

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

RequestExpired

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

ServiceUnavailable

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400