aws

API Reference

EBS direct APIs

API Version 2019-11-02

EBS direct APIs: API Reference

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Welcome

You can use the Amazon Elastic Block Store (Amazon EBS) direct APIs to create Amazon EBS snapshots, write data directly to your snapshots, read data on your snapshots, and identify the differences or changes between two snapshots. If you're an independent software vendor (ISV) who offers backup services for Amazon EBS, the EBS direct APIs make it more efficient and cost-effective to track incremental changes on your Amazon EBS volumes through snapshots. This can be done without having to create new volumes from snapshots, and then use Amazon Elastic Compute Cloud (Amazon EC2) instances to compare the differences.

You can create incremental snapshots directly from data on-premises into volumes and the cloud to use for quick disaster recovery. With the ability to write and read snapshots, you can write your on-premises data to an snapshot during a disaster. Then after recovery, you can restore it back to AWS or on-premises from the snapshot. You no longer need to build and maintain complex mechanisms to copy data to and from Amazon EBS.

> **ⓘ Note**
>
> Amazon EBS direct APIs does not support public snapshots and local snapshots on Outposts.

This API reference provides detailed information about the actions, data types, parameters, and errors of the EBS direct APIs. For more information about the elements that make up the EBS direct APIs, and examples of how to use them effectively, see Accessing the Contents of an Amazon EBS Snapshot in the *Amazon Elastic Compute Cloud User Guide*. For more information about the supported AWS Regions, endpoints, and service quotas for the EBS direct APIs, see Amazon Elastic Block Store Endpoints and Quotas in the *AWS General Reference*.

This document was last published on March 27, 2026.

Actions

The following actions are supported:

- [CompleteSnapshot](#)
- [GetSnapshotBlock](#)
- [ListChangedBlocks](#)
- [ListSnapshotBlocks](#)
- [PutSnapshotBlock](#)
- [StartSnapshot](#)

CompleteSnapshot

Seals and completes the snapshot after all of the required blocks of data have been written to it. Completing the snapshot changes the status to `completed`. You cannot write new blocks to a snapshot after it has been completed.

> **ⓘ Note**
>
> You should always retry requests that receive server (5xx) error responses, and `ThrottlingException` and `RequestThrottledException` client error responses. For more information see [Error retries](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Syntax

```
POST /snapshots/completion/snapshotId HTTP/1.1
x-amz-ChangedBlocksCount: ChangedBlocksCount
x-amz-Checksum: Checksum
x-amz-Checksum-Algorithm: ChecksumAlgorithm
x-amz-Checksum-Aggregation-Method: ChecksumAggregationMethod
```

URI Request Parameters

The request uses the following URI parameters.

ChangedBlocksCount

The number of blocks that were written to the snapshot.

Valid Range: Minimum value of 0.

Required: Yes

Checksum

An aggregated Base-64 SHA256 checksum based on the checksums of each written block.

To generate the aggregated checksum using the linear aggregation method, arrange the checksums for each written block in ascending order of their block index, concatenate them to form a single string, and then generate the checksum on the entire string using the SHA256 algorithm.

Length Constraints: Maximum length of 64.

Pattern: `^[A-Za-z0-9+/=]+$`

ChecksumAggregationMethod

The aggregation method used to generate the checksum. Currently, the only supported aggregation method is `LINEAR`.

Length Constraints: Maximum length of 32.

Pattern: `^[A-Za-z0-9]+$`

Valid Values: `LINEAR`

ChecksumAlgorithm

The algorithm used to generate the checksum. Currently, the only supported algorithm is `SHA256`.

Length Constraints: Maximum length of 32.

Pattern: `^[A-Za-z0-9]+$`

Valid Values: `SHA256`

snapshotId

The ID of the snapshot.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 202
Content-type: application/json
```

```
{
    "Status": "string"
}
```

Response Elements

If the action is successful, the service sends back an HTTP 202 response.

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

Status

The status of the snapshot.

Type: String

Length Constraints: Maximum length of 32.

Valid Values: `completed | pending | error`

Errors

For information about the errors that are common to all actions, see Common Errors.

AccessDeniedException

You do not have sufficient access to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 403

InternalServerException

An internal error has occurred. For more information see Error retries.

HTTP Status Code: 500

RequestThrottledException

The number of API requests has exceeded the maximum allowed API request throttling limit for the snapshot. For more information see Error retries.

Reason

> The reason for the exception.

HTTP Status Code: 400

ResourceNotFoundException

The specified resource does not exist.

Reason

> The reason for the exception.

HTTP Status Code: 404

ServiceQuotaExceededException

Your current service quotas do not allow you to perform this action.

Reason

> The reason for the exception.

HTTP Status Code: 402

ValidationException

The input fails to satisfy the constraints of the EBS direct APIs.

Reason

> The reason for the validation exception.

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 V2](#)
- [AWS SDK for .NET V4](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)

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

GetSnapshotBlock

Returns the data in a block in an Amazon Elastic Block Store snapshot.

> **ⓘ Note**
>
> You should always retry requests that receive server (5xx) error responses, and `ThrottlingException` and `RequestThrottledException` client error responses. For more information see [Error retries](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Syntax

```
GET /snapshots/snapshotId/blocks/blockIndex?blockToken=BlockToken HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

blockIndex

The block index of the block in which to read the data. A block index is a logical index in units of 512 KiB blocks. To identify the block index, divide the logical offset of the data in the logical volume by the block size (logical offset of data/524288). The logical offset of the data must be 512 KiB aligned.

Valid Range: Minimum value of 0.

Required: Yes

BlockToken

The block token of the block from which to get data. You can obtain the `BlockToken` by running the `ListChangedBlocks` or `ListSnapshotBlocks` operations.

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

Required: Yes

snapshotId

The ID of the snapshot containing the block from which to get data.

> ⚠️ **Important**
>
> If the specified snapshot is encrypted, you must have permission to use the KMS key that was used to encrypt the snapshot. For more information, see [Using encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

Required: Yes

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
x-amz-Data-Length: DataLength
x-amz-Checksum: Checksum
x-amz-Checksum-Algorithm: ChecksumAlgorithm

BlockData
```

Response Elements

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

The response returns the following HTTP headers.

Checksum

The checksum generated for the block, which is Base64 encoded.

Length Constraints: Maximum length of 64.

Pattern: `^[A-Za-z0-9+/=]+$`

ChecksumAlgorithm

The algorithm used to generate the checksum for the block, such as SHA256.

Length Constraints: Maximum length of 32.

Pattern: `^[A-Za-z0-9]+$`

Valid Values: SHA256

DataLength

The size of the data in the block.

The response returns the following as the HTTP body.

BlockData

The data content of the block.

Errors

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

AccessDeniedException

You do not have sufficient access to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 403

InternalServerException

An internal error has occurred. For more information see [Error retries](#).

HTTP Status Code: 500

RequestThrottledException

The number of API requests has exceeded the maximum allowed API request throttling limit for the snapshot. For more information see Error retries.

Reason

The reason for the exception.

HTTP Status Code: 400

ResourceNotFoundException

The specified resource does not exist.

Reason

The reason for the exception.

HTTP Status Code: 404

ServiceQuotaExceededException

Your current service quotas do not allow you to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 402

ValidationException

The input fails to satisfy the constraints of the EBS direct APIs.

Reason

The reason for the validation exception.

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 V2

- [AWS SDK for .NET V4](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
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- [AWS SDK for Ruby V3](#)

ListChangedBlocks

Returns information about the blocks that are different between two Amazon EBS snapshots of the same volume or between two snapshot copies of the same source snapshot.

If you specify snapshot copies, the API returns the difference only if the two snapshots are incremental copies. For more information, see Incremental snapshot copying.

You must have permissions to access the specified snapshots.

> (i) **Note**
>
> You should always retry requests that receive server (5xx) error responses, and `ThrottlingException` and `RequestThrottledException` client error responses. For more information see Error retries in the *Amazon Elastic Compute Cloud User Guide*.

Request Syntax

```
GET /snapshots/secondSnapshotId/changedblocks?
firstSnapshotId=FirstSnapshotId&maxResults=MaxResults&pageToken=NextToken&startingBlockIndex=St
 HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

FirstSnapshotId

The ID of the first snapshot to use for the comparison.

> ⚠ **Important**
>
> The `FirstSnapshotID` parameter must be specified with a `SecondSnapshotId` parameter; otherwise, an error occurs.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

MaxResults

The maximum number of blocks to be returned by the request.

Even if additional blocks can be retrieved from the snapshot, the request can return less blocks than **MaxResults** or an empty array of blocks.

To retrieve the next set of blocks from the snapshot, make another request with the returned **NextToken** value. The value of **NextToken** is `null` when there are no more blocks to return.

Valid Range: Minimum value of 100. Maximum value of 10000.

NextToken

The token to request the next page of results.

If you specify **NextToken**, then **StartingBlockIndex** is ignored.

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

secondSnapshotId

The ID of the second snapshot to use for the comparison.

> ⚠️ **Important**
>
> The `SecondSnapshotId` parameter must be specified with a `FirstSnapshotID` parameter; otherwise, an error occurs.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

Required: Yes

StartingBlockIndex

The block index from which the comparison should start.

The list in the response will start from this block index or the next valid block index in the snapshots.

If you specify **NextToken**, then **StartingBlockIndex** is ignored.

Valid Range: Minimum value of 0.

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
    "BlockSize": number,
    "ChangedBlocks": [
        {
            "BlockIndex": number,
            "FirstBlockToken": "string",
            "SecondBlockToken": "string"
        }
    ],
    "ExpiryTime": number,
    "NextToken": "string",
    "VolumeSize": 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.

BlockSize

The size of the blocks in the snapshot, in bytes.

Type: Integer

ChangedBlocks

An array of objects containing information about the changed blocks.

Type: Array of [ChangedBlock](#) objects

ExpiryTime

The time when the `BlockToken` expires.

Type: Timestamp

NextToken

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

Type: String

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

VolumeSize

The size of the volume in GB.

Type: Long

Valid Range: Minimum value of 1.

Errors

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

AccessDeniedException

You do not have sufficient access to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 403

InternalServerException

An internal error has occurred. For more information see [Error retries](#).

HTTP Status Code: 500

RequestThrottledException

The number of API requests has exceeded the maximum allowed API request throttling limit for the snapshot. For more information see Error retries.

Reason

The reason for the exception.

HTTP Status Code: 400

ResourceNotFoundException

The specified resource does not exist.

Reason

The reason for the exception.

HTTP Status Code: 404

ServiceQuotaExceededException

Your current service quotas do not allow you to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 402

ValidationException

The input fails to satisfy the constraints of the EBS direct APIs.

Reason

The reason for the validation exception.

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 V2

- [AWS SDK for .NET V4](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for Kotlin](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

ListSnapshotBlocks

Returns information about the blocks in an Amazon Elastic Block Store snapshot.

> ℹ️ **Note**
>
> You should always retry requests that receive server (5xx) error responses, and
> `ThrottlingException` and `RequestThrottledException` client error responses. For
> more information see [Error retries](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Syntax

```
GET /snapshots/snapshotId/blocks?
maxResults=MaxResults&pageToken=NextToken&startingBlockIndex=StartingBlockIndex
 HTTP/1.1
```

URI Request Parameters

The request uses the following URI parameters.

MaxResults

The maximum number of blocks to be returned by the request.

Even if additional blocks can be retrieved from the snapshot, the request can return less blocks
than **MaxResults** or an empty array of blocks.

To retrieve the next set of blocks from the snapshot, make another request with the returned
NextToken value. The value of **NextToken** is `null` when there are no more blocks to return.

Valid Range: Minimum value of 100. Maximum value of 10000.

NextToken

The token to request the next page of results.

If you specify **NextToken**, then **StartingBlockIndex** is ignored.

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

snapshotId

The ID of the snapshot from which to get block indexes and block tokens.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

Required: Yes

StartingBlockIndex

The block index from which the list should start. The list in the response will start from this block index or the next valid block index in the snapshot.

If you specify **NextToken**, then **StartingBlockIndex** is ignored.

Valid Range: Minimum value of 0.

Request Body

The request does not have a request body.

Response Syntax

```
HTTP/1.1 200
Content-type: application/json

{
   "Blocks": [
      {
         "BlockIndex": number,
         "BlockToken": "string"
      }
   ],
   "BlockSize": number,
   "ExpiryTime": number,
   "NextToken": "string",
   "VolumeSize": 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.

Blocks

An array of objects containing information about the blocks.

Type: Array of Block objects

BlockSize

The size of the blocks in the snapshot, in bytes.

Type: Integer

ExpiryTime

The time when the `BlockToken` expires.

Type: Timestamp

NextToken

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

Type: String

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

VolumeSize

The size of the volume in GB.

Type: Long

Valid Range: Minimum value of 1.

Errors

For information about the errors that are common to all actions, see Common Errors.

AccessDeniedException

You do not have sufficient access to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 403

InternalServerException

An internal error has occurred. For more information see Error retries.

HTTP Status Code: 500

RequestThrottledException

The number of API requests has exceeded the maximum allowed API request throttling limit for the snapshot. For more information see Error retries.

Reason

The reason for the exception.

HTTP Status Code: 400

ResourceNotFoundException

The specified resource does not exist.

Reason

The reason for the exception.

HTTP Status Code: 404

ServiceQuotaExceededException

Your current service quotas do not allow you to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 402

ValidationException

The input fails to satisfy the constraints of the EBS direct APIs.

Reason

The reason for the validation exception.

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 V2](#)
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PutSnapshotBlock

Writes a block of data to a snapshot. If the specified block contains data, the existing data is overwritten. The target snapshot must be in the `pending` state.

Data written to a snapshot must be aligned with 512-KiB sectors.

> ⓘ **Note**
>
> You should always retry requests that receive server (5xx) error responses, and `ThrottlingException` and `RequestThrottledException` client error responses. For more information see [Error retries](#) in the *Amazon Elastic Compute Cloud User Guide*.

Request Syntax

```
PUT /snapshots/snapshotId/blocks/blockIndex HTTP/1.1
x-amz-Data-Length: DataLength
x-amz-Progress: Progress
x-amz-Checksum: Checksum
x-amz-Checksum-Algorithm: ChecksumAlgorithm

BlockData
```

URI Request Parameters

The request uses the following URI parameters.

blockIndex

The block index of the block in which to write the data. A block index is a logical index in units of 512 KiB blocks. To identify the block index, divide the logical offset of the data in the logical volume by the block size (logical offset of data/524288). The logical offset of the data must be 512 KiB aligned.

Valid Range: Minimum value of 0.

Required: Yes

Checksum

A Base64-encoded SHA256 checksum of the data. Only SHA256 checksums are supported.

Length Constraints: Maximum length of 64.

Pattern: `^[A-Za-z0-9+/=]+$`

Required: Yes

ChecksumAlgorithm

The algorithm used to generate the checksum. Currently, the only supported algorithm is SHA256.

Length Constraints: Maximum length of 32.

Pattern: `^[A-Za-z0-9]+$`

Valid Values: SHA256

Required: Yes

DataLength

The size of the data to write to the block, in bytes. Currently, the only supported size is 524288 bytes.

Valid values: 524288

Required: Yes

Progress

The progress of the write process, as a percentage.

Valid Range: Minimum value of 0. Maximum value of 100.

snapshotId

The ID of the snapshot.

> ⚠️ **Important**
>
> If the specified snapshot is encrypted, you must have permission to use the KMS key that was used to encrypt the snapshot. For more information, see Using encryption in the *Amazon Elastic Compute Cloud User Guide.*.

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

Required: Yes

Request Body

The request accepts the following binary data.

BlockData

The data to write to the block.

The block data is not signed as part of the Signature Version 4 signing process. As a result, you must generate and provide a Base64-encoded SHA256 checksum for the block data using the **x-amz-Checksum** header. Also, you must specify the checksum algorithm using the **x-amz-Checksum-Algorithm** header. The checksum that you provide is part of the Signature Version 4 signing process. It is validated against a checksum generated by Amazon EBS to ensure the validity and authenticity of the data. If the checksums do not correspond, the request fails. For more information, see [Using checksums with the EBS direct APIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

Required: Yes

Response Syntax

```
HTTP/1.1 201
x-amz-Checksum: Checksum
x-amz-Checksum-Algorithm: ChecksumAlgorithm
```

Response Elements

If the action is successful, the service sends back an HTTP 201 response.

The response returns the following HTTP headers.

Checksum

The SHA256 checksum generated for the block data by Amazon EBS.

Length Constraints: Maximum length of 64.

Pattern: ^[A-Za-z0-9+/=]+$

ChecksumAlgorithm

The algorithm used by Amazon EBS to generate the checksum.

Length Constraints: Maximum length of 32.

Pattern: ^[A-Za-z0-9]+$

Valid Values: SHA256

Errors

For information about the errors that are common to all actions, see Common Errors.

AccessDeniedException

You do not have sufficient access to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 403

InternalServerException

An internal error has occurred. For more information see Error retries.

HTTP Status Code: 500

RequestThrottledException

The number of API requests has exceeded the maximum allowed API request throttling limit for the snapshot. For more information see Error retries.

Reason

The reason for the exception.

HTTP Status Code: 400

ResourceNotFoundException

The specified resource does not exist.

Reason

The reason for the exception.

HTTP Status Code: 404

ServiceQuotaExceededException

Your current service quotas do not allow you to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 402

ValidationException

The input fails to satisfy the constraints of the EBS direct APIs.

Reason

The reason for the validation exception.

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 V2
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- AWS SDK for Kotlin

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

StartSnapshot

Creates a new Amazon EBS snapshot. The new snapshot enters the `pending` state after the request completes.

After creating the snapshot, use PutSnapshotBlock to write blocks of data to the snapshot.

> **ⓘ Note**
>
> You should always retry requests that receive server (5xx) error responses, and `ThrottlingException` and `RequestThrottledException` client error responses. For more information see Error retries in the *Amazon Elastic Compute Cloud User Guide*.

Request Syntax

```
POST /snapshots HTTP/1.1
Content-type: application/json

{
    "ClientToken": "string",
    "Description": "string",
    "Encrypted": boolean,
    "KmsKeyArn": "string",
    "ParentSnapshotId": "string",
    "Tags": [
        {
            "Key": "string",
            "Value": "string"
        }
    ],
    "Timeout": number,
    "VolumeSize": number
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ClientToken

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. Idempotency ensures that an API request completes only once. With an idempotent request, if the original request completes successfully. The subsequent retries with the same client token return the result from the original successful request and they have no additional effect.

If you do not specify a client token, one is automatically generated by the AWS SDK.

For more information, see [Idempotency for StartSnapshot API](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Length Constraints: Maximum length of 255.

Pattern: ^[\S]+$

Required: No

Description

A description for the snapshot.

Type: String

Length Constraints: Maximum length of 255.

Pattern: ^[\S\s]+$

Required: No

Encrypted

Indicates whether to encrypt the snapshot.

You can't specify **Encrypted** and **ParentSnapshotId** in the same request. If you specify both parameters, the request fails with `ValidationException`.

The encryption status of the snapshot depends on the values that you specify for **Encrypted**, **KmsKeyArn**, and **ParentSnapshotId**, and whether your AWS account is enabled for encryption by default. For more information, see Using encryption in the *Amazon Elastic Compute Cloud User Guide*.

> ⚠ **Important**
>
> To create an encrypted snapshot, you must have permission to use the KMS key. For more information, see Permissions to use AWS Key Management Service keys in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

KmsKeyArn

The Amazon Resource Name (ARN) of the AWS Key Management Service (AWS KMS) key to be used to encrypt the snapshot.

The encryption status of the snapshot depends on the values that you specify for **Encrypted**, **KmsKeyArn**, and **ParentSnapshotId**, and whether your AWS account is enabled for encryption by default. For more information, see Using encryption in the *Amazon Elastic Compute Cloud User Guide*.

> ⚠ **Important**
>
> To create an encrypted snapshot, you must have permission to use the KMS key. For more information, see Permissions to use AWS Key Management Service keys in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `arn:aws[a-z\-]*:kms:.*:[0-9]{12}:key/.*`

Required: No

ParentSnapshotId

The ID of the parent snapshot. If there is no parent snapshot, or if you are creating the first snapshot for an on-premises volume, omit this parameter.

You can't specify **ParentSnapshotId** and **Encrypted** in the same request. If you specify both parameters, the request fails with `ValidationException`.

The encryption status of the snapshot depends on the values that you specify for **Encrypted**, **KmsKeyArn**, and **ParentSnapshotId**, and whether your AWS account is enabled for encryption by default. For more information, see Using encryption in the *Amazon Elastic Compute Cloud User Guide*.

> ⚠️ **Important**
>
> If you specify an encrypted parent snapshot, you must have permission to use the KMS key that was used to encrypt the parent snapshot. For more information, see Permissions to use AWS Key Management Service keys in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `^snap-[0-9a-f]+$`

Required: No

Tags

The tags to apply to the snapshot.

Type: Array of Tag objects

Required: No

Timeout

The amount of time (in minutes) after which the snapshot is automatically cancelled if:

- No blocks are written to the snapshot.

- The snapshot is not completed after writing the last block of data.

  If no value is specified, the timeout defaults to 60 minutes.

  Type: Integer

  Valid Range: Minimum value of 10. Maximum value of 4320.

  Required: No

VolumeSize

The size of the volume, in GiB. The maximum size is 65536 GiB (64 TiB).

Type: Long

Valid Range: Minimum value of 1.

Required: Yes

Response Syntax

```
HTTP/1.1 201
Content-type: application/json

{
   "BlockSize": number,
   "Description": "string",
   "KmsKeyArn": "string",
   "OwnerId": "string",
   "ParentSnapshotId": "string",
   "SnapshotId": "string",
   "SseType": "string",
   "StartTime": number,
   "Status": "string",
   "Tags": [
      {
         "Key": "string",
         "Value": "string"
      }
   ],
   "VolumeSize": number
}
```

Response Elements

If the action is successful, the service sends back an HTTP 201 response.

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

BlockSize

The size of the blocks in the snapshot, in bytes.

Type: Integer

Description

The description of the snapshot.

Type: String

Length Constraints: Maximum length of 255.

Pattern: `^[\S\s]+$`

KmsKeyArn

The Amazon Resource Name (ARN) of the AWS Key Management Service (AWS KMS) key used to encrypt the snapshot.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `arn:aws[a-z\-]*:kms:.*:[0-9]{12}:key/.*`

OwnerId

The AWS account ID of the snapshot owner.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 24.

Pattern: `\S+`

ParentSnapshotId

The ID of the parent snapshot.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: ^snap-[0-9a-f]+$

SnapshotId

The ID of the snapshot.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: ^snap-[0-9a-f]+$

SseType

Reserved for future use.

Type: String

Valid Values: sse-ebs | sse-kms | none

StartTime

The timestamp when the snapshot was created.

Type: Timestamp

Status

The status of the snapshot.

Type: String

Length Constraints: Maximum length of 32.

Valid Values: completed | pending | error

Tags

The tags applied to the snapshot. You can specify up to 50 tags per snapshot. For more information, see Tagging your Amazon EC2 resources in the *Amazon Elastic Compute Cloud User Guide*.

Type: Array of Tag objects

VolumeSize

The size of the volume, in GiB.

Type: Long

Valid Range: Minimum value of 1.

Errors

For information about the errors that are common to all actions, see Common Errors.

AccessDeniedException

You do not have sufficient access to perform this action.

Reason

The reason for the exception.

HTTP Status Code: 403

ConcurrentLimitExceededException

You have reached the limit for concurrent API requests. For more information, see Optimizing performance of the EBS direct APIs in the *Amazon Elastic Compute Cloud User Guide*.

HTTP Status Code: 400

ConflictException

The request uses the same client token as a previous, but non-identical request.

HTTP Status Code: 409

InternalServerException

An internal error has occurred. For more information see Error retries.

HTTP Status Code: 500

RequestThrottledException

The number of API requests has exceeded the maximum allowed API request throttling limit for the snapshot. For more information see Error retries.

Reason

> The reason for the exception.

HTTP Status Code: 400

ResourceNotFoundException

The specified resource does not exist.

Reason

> The reason for the exception.

HTTP Status Code: 404

ServiceQuotaExceededException

Your current service quotas do not allow you to perform this action.

Reason

> The reason for the exception.

HTTP Status Code: 402

ValidationException

The input fails to satisfy the constraints of the EBS direct APIs.

Reason

> The reason for the validation exception.

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 V2](#)
- [AWS SDK for .NET V4](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go v2](#)

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

Data Types

The EBS direct APIs 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:

- Block
- ChangedBlock
- Tag

Block

A block of data in an Amazon Elastic Block Store snapshot.

Contents

BlockIndex

The block index.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

BlockToken

The block token for the block index.

Type: String

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

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 Java V2
- AWS SDK for Ruby V3

ChangedBlock

A block of data in an Amazon Elastic Block Store snapshot that is different from another snapshot of the same volume/snapshot lineage.

Contents

BlockIndex

The block index.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

FirstBlockToken

The block token for the block index of the `FirstSnapshotId` specified in the `ListChangedBlocks` operation. This value is absent if the first snapshot does not have the changed block that is on the second snapshot.

Type: String

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

Required: No

SecondBlockToken

The block token for the block index of the `SecondSnapshotId` specified in the `ListChangedBlocks` operation.

Type: String

Length Constraints: Maximum length of 256.

Pattern: `^[A-Za-z0-9+/=]+$`

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 Java V2](#)
- [AWS SDK for Ruby V3](#)

Tag

Describes a tag.

Contents

Key

The key of the tag.

Type: String

Length Constraints: Maximum length of 127.

Pattern: ^[\S\s]+$

Required: No

Value

The value of the tag.

Type: String

Length Constraints: Maximum length of 255.

Pattern: ^[\S\s]*$

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 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 [Signing AWS API requests](#) in the *IAM User Guide*.

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 [Create a signed AWS API request](#) in the *IAM User Guide*.

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'T'HHMMSS'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 Elements of an AWS API request signature in the *IAM User Guide*.

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 STS, see AWS services that work with IAM in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, 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 Create a signed AWS API request in the *IAM User Guide*.

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: 403

ExpiredTokenException

The security token included in the request is expired

HTTP Status Code: 403

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 403

InternalFailure

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

MalformedHttpRequestException

Problems with the request at the HTTP level, e.g. we can't decompress the body according to the decompression algorithm specified by the content-encoding.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 401

OptInRequired

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

RequestAbortedException

Convenient exception that can be used when a request is aborted before a reply is sent back
(e.g. client closed connection).

HTTP Status Code: 400

RequestEntityTooLargeException

Problems with the request at the HTTP level. The request entity is too large.

HTTP Status Code: 413

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

RequestTimeoutException

Problems with the request at the HTTP level. Reading the Request timed out.

HTTP Status Code: 408

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

UnrecognizedClientException

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

UnknownOperationException

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 404

ValidationError

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400