



API Reference

# AWS Payment Cryptography Control Plane



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# AWS Payment Cryptography Control Plane: API Reference

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# Welcome

AWS Payment Cryptography Control Plane APIs manage encryption keys for use during payment-related cryptographic operations. You can create, import, export, share, manage, and delete keys. You can also manage AWS Identity and Access Management (IAM) policies for keys. For more information, see [Identity and access management](#) in the *AWS Payment Cryptography User Guide*.

To use encryption keys for payment-related transaction processing and associated cryptographic operations, you use the [AWS Payment Cryptography Data Plane](#). You can perform actions like encrypt, decrypt, generate, and verify payment-related data.

All AWS Payment Cryptography API calls must be signed and transmitted using Transport Layer Security (TLS). We recommend you always use the latest supported TLS version for logging API requests.

AWS Payment Cryptography supports AWS CloudTrail for control plane operations, a service that logs AWS API calls and related events for your AWS account and delivers them to an Amazon S3 bucket you specify. By using the information collected by CloudTrail, you can determine what requests were made to AWS Payment Cryptography, who made the request, when it was made, and so on. If you don't configure a trail, you can still view the most recent events in the CloudTrail console. For more information, see the [AWS CloudTrail User Guide](#).

This document was last published on July 2, 2024.

# Actions

The following actions are supported:

- [CreateAlias](#)
- [CreateKey](#)
- [DeleteAlias](#)
- [DeleteKey](#)
- [ExportKey](#)
- [GetAlias](#)
- [GetKey](#)
- [GetParametersForExport](#)
- [GetParametersForImport](#)
- [GetPublicKeyCertificate](#)
- [ImportKey](#)
- [ListAliases](#)
- [ListKeys](#)
- [ListTagsForResource](#)
- [RestoreKey](#)
- [StartKeyUsage](#)
- [StopKeyUsage](#)
- [TagResource](#)
- [UntagResource](#)
- [UpdateAlias](#)

# CreateAlias

Creates an *alias*, or a friendly name, for an AWS Payment Cryptography key. You can use an alias to identify a key in the console and when you call cryptographic operations such as [EncryptData](#) or [DecryptData](#).

You can associate the alias with any key in the same AWS Region. Each alias is associated with only one key at a time, but a key can have multiple aliases. You can't create an alias without a key. The alias must be unique in the account and AWS Region, but you can create another alias with the same name in a different AWS Region.

To change the key that's associated with the alias, call [UpdateAlias](#). To delete the alias, call [DeleteAlias](#). These operations don't affect the underlying key. To get the alias that you created, call [ListAliases](#).

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [DeleteAlias](#)
- [GetAlias](#)
- [ListAliases](#)
- [UpdateAlias](#)

## Request Syntax

```
{
  "AliasName": "string",
  "KeyArn": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

## AliasName

A friendly name that you can use to refer to a key. An alias must begin with `alias/` followed by a name, for example `alias/ExampleAlias`. It can contain only alphanumeric characters, forward slashes (/), underscores (\_), and dashes (-).

### Important

Don't include personal, confidential or sensitive information in this field. This field may be displayed in plaintext in AWS CloudTrail logs and other output.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 256.

Pattern: `alias/[a-zA-Z0-9/_-]+`

Required: Yes

## KeyArn

The KeyARN of the key to associate with the alias.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: No

## Response Syntax

```
{
  "Alias": {
    "AliasName": "string",
    "KeyArn": "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.

### [Alias](#)

The alias for the key.

Type: [Alias](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

## ServiceUnavailableException

The service cannot complete the request.

HTTP Status Code: 500

## ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateKey

Creates an AWS Payment Cryptography key, a logical representation of a cryptographic key, that is unique in your account and AWS Region. You use keys for cryptographic functions such as encryption and decryption.

In addition to the key material used in cryptographic operations, an AWS Payment Cryptography key includes metadata such as the key ARN, key usage, key origin, creation date, description, and key state.

When you create a key, you specify both immutable and mutable data about the key. The immutable data contains key attributes that define the scope and cryptographic operations that you can perform using the key, for example key class (example: SYMMETRIC\_KEY), key algorithm (example: TDES\_2KEY), key usage (example: TR31\_P0\_PIN\_ENCRYPTION\_KEY) and key modes of use (example: Encrypt). For information about valid combinations of key attributes, see [Understanding key attributes](#) in the *AWS Payment Cryptography User Guide*. The mutable data contained within a key includes usage timestamp and key deletion timestamp and can be modified after creation.

AWS Payment Cryptography binds key attributes to keys using key blocks when you store or export them. AWS Payment Cryptography stores the key contents wrapped and never stores or transmits them in the clear.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [DeleteKey](#)
- [GetKey](#)
- [ListKeys](#)

## Request Syntax

```
{
  "Enabled": boolean,
  "Exportable": boolean,
  "KeyAttributes": {
    "KeyAlgorithm": "string",
    "KeyClass": "string",
```

```
    "KeyModesOfUse": {
      "Decrypt": boolean,
      "DeriveKey": boolean,
      "Encrypt": boolean,
      "Generate": boolean,
      "NoRestrictions": boolean,
      "Sign": boolean,
      "Unwrap": boolean,
      "Verify": boolean,
      "Wrap": boolean
    },
    "KeyUsage": "string"
  },
  "KeyCheckValueAlgorithm": "string",
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

## Request Parameters

The request accepts the following data in JSON format.

### Enabled

Specifies whether to enable the key. If the key is enabled, it is activated for use within the service. If the key is not enabled, then it is created but not activated. The default value is enabled.

Type: Boolean

Required: No

### Exportable

Specifies whether the key is exportable from the service.

Type: Boolean

Required: Yes



## KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after the key is created.

Type: [KeyAttributes](#) object

Required: Yes

## KeyCheckValueAlgorithm

The algorithm that AWS Payment Cryptography uses to calculate the key check value (KCV). It is used to validate the key integrity.

For TDES keys, the KCV is computed by encrypting 8 bytes, each with value of zero, with the key to be checked and retaining the 3 highest order bytes of the encrypted result. For AES keys, the KCV is computed using a CMAC algorithm where the input data is 16 bytes of zero and retaining the 3 highest order bytes of the encrypted result.

Type: String

Valid Values: CMAC | ANSI\_X9\_24

Required: No

## Tags

Assigns one or more tags to the AWS Payment Cryptography key. Use this parameter to tag a key when it is created. To tag an existing AWS Payment Cryptography key, use the [TagResource](#) operation.

Each tag consists of a tag key and a tag value. Both the tag key and the tag value are required, but the tag value can be an empty (null) string. You can't have more than one tag on an AWS Payment Cryptography key with the same tag key.

### **Important**

Don't include personal, confidential or sensitive information in this field. This field may be displayed in plaintext in AWS CloudTrail logs and other output.

**Note**

Tagging or untagging an AWS Payment Cryptography key can allow or deny permission to the key.

Type: Array of [Tag](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

## Response Syntax

```
{
  "Key": {
    "CreateTimestamp": number,
    "DeletePendingTimestamp": number,
    "DeleteTimestamp": number,
    "Enabled": boolean,
    "Exportable": boolean,
    "KeyArn": "string",
    "KeyAttributes": {
      "KeyAlgorithm": "string",
      "KeyClass": "string",
      "KeyModesOfUse": {
        "Decrypt": boolean,
        "DeriveKey": boolean,
        "Encrypt": boolean,
        "Generate": boolean,
        "NoRestrictions": boolean,
        "Sign": boolean,
        "Unwrap": boolean,
        "Verify": boolean,
        "Wrap": boolean
      },
      "KeyUsage": "string"
    },
    "KeyCheckValue": "string",
    "KeyCheckValueAlgorithm": "string",
    "KeyOrigin": "string",
    "KeyState": "string",
```

```
    "UsageStartTimestamp": number,  
    "UsageStopTimestamp": 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.

### [Key](#)

The key material that contains all the key attributes.

Type: [Key](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerError**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteAlias

Deletes the alias, but doesn't affect the underlying key.

Each key can have multiple aliases. To get the aliases of all keys, use the [UpdateAlias](#) operation. To change the alias of a key, first use [DeleteAlias](#) to delete the current alias and then use [CreateAlias](#) to create a new alias. To associate an existing alias with a different key, call [UpdateAlias](#).

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [CreateAlias](#)
- [GetAlias](#)
- [ListAliases](#)
- [UpdateAlias](#)

## Request Syntax

```
{
  "AliasName": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [AliasName](#)

A friendly name that you can use to refer AWS Payment Cryptography key. This value must begin with `alias/` followed by a name, such as `alias/ExampleAlias`.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 256.

Pattern: `alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Elements

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

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteKey

Deletes the key material and metadata associated with AWS Payment Cryptography key.

Key deletion is irreversible. After a key is deleted, you can't perform cryptographic operations using the key. For example, you can't decrypt data that was encrypted by a deleted AWS Payment Cryptography key, and the data may become unrecoverable. Because key deletion is destructive, AWS Payment Cryptography has a safety mechanism to prevent accidental deletion of a key. When you call this operation, AWS Payment Cryptography disables the specified key but doesn't delete it until after a waiting period set using `DeleteKeyInDays`. The default waiting period is 7 days. During the waiting period, the `KeyState` is `DELETE_PENDING`. After the key is deleted, the `KeyState` is `DELETE_COMPLETE`.

You should delete a key only when you are sure that you don't need to use it anymore and no other parties are utilizing this key. If you aren't sure, consider deactivating it instead by calling [StopKeyUsage](#).

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [RestoreKey](#)
- [StartKeyUsage](#)
- [StopKeyUsage](#)

## Request Syntax

```
{
  "DeleteKeyInDays": number,
  "KeyIdentifier": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [DeleteKeyInDays](#)

The waiting period for key deletion. The default value is seven days.



Type: Integer

Valid Range: Minimum value of 3. Maximum value of 180.

Required: No

### KeyIdentifier

The KeyARN of the key that is scheduled for deletion.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
  "Key": {
    "CreateTimestamp": number,
    "DeletePendingTimestamp": number,
    "DeleteTimestamp": number,
    "Enabled": boolean,
    "Exportable": boolean,
    "KeyArn": "string",
    "KeyAttributes": {
      "KeyAlgorithm": "string",
      "KeyClass": "string",
      "KeyModesOfUse": {
        "Decrypt": boolean,
        "DeriveKey": boolean,
        "Encrypt": boolean,
        "Generate": boolean,
        "NoRestrictions": boolean,
        "Sign": boolean,
        "Unwrap": boolean,
        "Verify": boolean,
        "Wrap": boolean
      }
    }
  }
}
```

```
    },
    "KeyUsage": "string"
  },
  "KeyCheckValue": "string",
  "KeyCheckValueAlgorithm": "string",
  "KeyOrigin": "string",
  "KeyState": "string",
  "UsageStartTimestamp": number,
  "UsageStopTimestamp": 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.

### [Key](#)

The KeyARN of the key that is scheduled for deletion.

Type: [Key](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

## ResourceNotFoundException

The request was denied due to an invalid resource error.

HTTP Status Code: 400

## ServiceUnavailableException

The service cannot complete the request.

HTTP Status Code: 500

## ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ExportKey

Exports a key from AWS Payment Cryptography.

AWS Payment Cryptography simplifies key exchange by replacing the existing paper-based approach with a modern electronic approach. With `ExportKey` you can export symmetric keys using either symmetric and asymmetric key exchange mechanisms. Using this operation, you can share your AWS Payment Cryptography generated keys with other service partners to perform cryptographic operations outside of AWS Payment Cryptography.

For symmetric key exchange, AWS Payment Cryptography uses the ANSI X9 TR-31 norm in accordance with PCI PIN guidelines. And for asymmetric key exchange, AWS Payment Cryptography supports ANSI X9 TR-34 norm and RSA wrap and unwrap key exchange mechanism. Asymmetric key exchange methods are typically used to establish bi-directional trust between the two parties exchanging keys and are used for initial key exchange such as Key Encryption Key (KEK). After which you can export working keys using symmetric method to perform various cryptographic operations within AWS Payment Cryptography.

The TR-34 norm is intended for exchanging 3DES keys only and keys are imported in a `WrappedKeyBlock` format. Key attributes (such as `KeyUsage`, `KeyAlgorithm`, `KeyModesOfUse`, `Exportability`) are contained within the key block. With RSA wrap and unwrap, you can exchange both 3DES and AES-128 keys. The keys are imported in a `WrappedKeyCryptogram` format and you will need to specify the key attributes during import.

You can also use `ExportKey` functionality to generate and export an IPEK (Initial Pin Encryption Key) from AWS Payment Cryptography using either TR-31 or TR-34 export key exchange. IPEK is generated from BDK (Base Derivation Key) and `ExportDukptInitialKey` attribute `KSN` (`KeySerialNumber`). The generated IPEK does not persist within AWS Payment Cryptography and has to be re-generated each time during export.

For key exchange using TR-31 or TR-34 key blocks, you can also export optional blocks within the key block header which contain additional attribute information about the key. The `KeyVersion` within `KeyBlockHeaders` indicates the version of the key within the key block. Furthermore, `KeyExportability` within `KeyBlockHeaders` can be used to further restrict exportability of the key after export from AWS Payment Cryptography.

The `OptionalBlocks` contain the additional data related to the key. For information on data type that can be included within optional blocks, refer to [ASC X9.143-2022](#).

**Note**

Data included in key block headers is signed but transmitted in clear text. Sensitive or confidential information should not be included in optional blocks. Refer to ASC X9.143-2022 standard for information on allowed data type.

**To export initial keys (KEK) or IPEK using TR-34**

Using this operation, you can export initial key using TR-34 asymmetric key exchange. You can only export KEK generated within AWS Payment Cryptography. In TR-34 terminology, the sending party of the key is called Key Distribution Host (KDH) and the receiving party of the key is called Key Receiving Device (KRD). During key export process, KDH is AWS Payment Cryptography which initiates key export and KRD is the user receiving the key.

To initiate TR-34 key export, the KRD must obtain an export token by calling [GetParametersForExport](#). This operation also generates a key pair for the purpose of key export, signs the key and returns back the signing public key certificate (also known as KDH signing certificate) and root certificate chain. The KDH uses the private key to sign the the export payload and the signing public key certificate is provided to KRD to verify the signature. The KRD can import the root certificate into its Hardware Security Module (HSM), as required. The export token and the associated KDH signing certificate expires after 7 days.

Next the KRD generates a key pair for the the purpose of encrypting the KDH key and provides the public key cerificate (also known as KRD wrapping certificate) back to KDH. The KRD will also import the root cerificate chain into AWS Payment Cryptography by calling [ImportKey](#) for `RootCertificatePublicKey`. The KDH, AWS Payment Cryptography, will use the KRD wrapping certificate to encrypt (wrap) the key under export and signs it with signing private key to generate a TR-34 `WrappedKeyBlock`. For more information on TR-34 key export, see section [Exporting symmetric keys](#) in the *AWS Payment Cryptography User Guide*.

Set the following parameters:

- `ExportAttributes`: Specify export attributes in case of IPEK export. This parameter is optional for KEK export.
- `ExportKeyIdentifier`: The KeyARN of the KEK or BDK (in case of IPEK) under export.
- `KeyMaterial`: Use `Tr34KeyBlock` parameters.

- **CertificateAuthorityPublicKeyIdentifier:** The KeyARN of the certificate chain that signed the KRD wrapping key certificate.
- **ExportToken:** Obtained from KDH by calling [GetParametersForImport](#).
- **WrappingKeyCertificate:** The public key certificate in PEM format (base64 encoded) of the KRD wrapping key AWS Payment Cryptography uses for encryption of the TR-34 export payload. This certificate must be signed by the root certificate (**CertificateAuthorityPublicKeyIdentifier**) imported into AWS Payment Cryptography.

When this operation is successful, AWS Payment Cryptography returns the KEK or IPEK as a TR-34 **WrappedKeyBlock**.

### To export initial keys (KEK) or IPEK using RSA Wrap and Unwrap

Using this operation, you can export initial key using asymmetric RSA wrap and unwrap key exchange method. To initiate export, generate an asymmetric key pair on the receiving HSM and obtain the public key certificate in PEM format (base64 encoded) for the purpose of wrapping and the root certificate chain. Import the root certificate into AWS Payment Cryptography by calling [ImportKey](#) for **RootCertificatePublicKey**.

Next call **ExportKey** and set the following parameters:

- **CertificateAuthorityPublicKeyIdentifier:** The KeyARN of the certificate chain that signed wrapping key certificate.
- **KeyMaterial:** Set to **KeyCryptogram**.
- **WrappingKeyCertificate:** The public key certificate in PEM format (base64 encoded) obtained by the receiving HSM and signed by the root certificate (**CertificateAuthorityPublicKeyIdentifier**) imported into AWS Payment Cryptography. The receiving HSM uses its private key component to unwrap the **WrappedKeyCryptogram**.

When this operation is successful, AWS Payment Cryptography returns the **WrappedKeyCryptogram**.

### To export working keys or IPEK using TR-31

Using this operation, you can export working keys or IPEK using TR-31 symmetric key exchange. In TR-31, you must use an initial key such as KEK to encrypt or wrap the key under export. To establish a KEK, you can use [CreateKey](#) or [ImportKey](#).

Set the following parameters:

- **ExportAttributes:** Specify export attributes in case of IPEK export. This parameter is optional for KEK export.
- **ExportKeyIdentifier:** The KeyARN of the KEK or BDK (in case of IPEK) under export.
- **KeyMaterial:** Use Tr31KeyBlock parameters.

When this operation is successful, AWS Payment Cryptography returns the working key or IPEK as a TR-31 WrappedKeyBlock.

**Cross-account use:** This operation can't be used across different AWS accounts.

**Related operations:**

- [GetParametersForExport](#)
- [ImportKey](#)

## Request Syntax

```
{
  "ExportAttributes": {
    "ExportDukptInitialKey": {
      "KeySerialNumber": "string"
    },
    "KeyCheckValueAlgorithm": "string"
  },
  "ExportKeyIdentifier": "string",
  "KeyMaterial": { ... }
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [ExportAttributes](#)

The attributes for IPEK generation during export.

Type: [ExportAttributes](#) object

Required: No

### [ExportKeyIdentifier](#)

The KeyARN of the key under export from AWS Payment Cryptography.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

### [KeyMaterial](#)

The key block format type, for example, TR-34 or TR-31, to use during key material export.

Type: [ExportKeyMaterial](#) object

**Note:** This object is a Union. Only one member of this object can be specified or returned.

Required: Yes

## Response Syntax

```
{
  "WrappedKey": {
    "KeyCheckValue": "string",
    "KeyCheckValueAlgorithm": "string",
    "KeyMaterial": "string",
    "WrappedKeyMaterialFormat": "string",
    "WrappingKeyArn": "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.



## **WrappedKey**

The key material under export as a TR-34 WrappedKeyBlock or a TR-31 WrappedKeyBlock. or a RSA WrappedKeyCryptogram.

Type: [WrappedKey](#) object

## **Errors**

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerError**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetAlias

Gets the AWS Payment Cryptography key associated with the alias.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [CreateAlias](#)
- [DeleteAlias](#)
- [ListAliases](#)
- [UpdateAlias](#)

## Request Syntax

```
{  
  "AliasName": "string"  
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [AliasName](#)

The alias of the AWS Payment Cryptography key.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 256.

Pattern: `alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
```

```
"Alias": {  
  "AliasName": "string",  
  "KeyArn": "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.

### [Alias](#)

The alias of the AWS Payment Cryptography key.

Type: [Alias](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **InternalServerError**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

## ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetKey

Gets the key material for an AWS Payment Cryptography key, including the immutable and mutable data specified when the key was created.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [CreateKey](#)
- [DeleteKey](#)
- [ListKeys](#)

## Request Syntax

```
{
  "KeyIdentifier": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [KeyIdentifier](#)

The KeyARN of the AWS Payment Cryptography key.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
```

```
"Key": {
  "CreateTimestamp": number,
  "DeletePendingTimestamp": number,
  "DeleteTimestamp": number,
  "Enabled": boolean,
  "Exportable": boolean,
  "KeyArn": "string",
  "KeyAttributes": {
    "KeyAlgorithm": "string",
    "KeyClass": "string",
    "KeyModesOfUse": {
      "Decrypt": boolean,
      "DeriveKey": boolean,
      "Encrypt": boolean,
      "Generate": boolean,
      "NoRestrictions": boolean,
      "Sign": boolean,
      "Unwrap": boolean,
      "Verify": boolean,
      "Wrap": boolean
    },
    "KeyUsage": "string"
  },
  "KeyCheckValue": "string",
  "KeyCheckValueAlgorithm": "string",
  "KeyOrigin": "string",
  "KeyState": "string",
  "UsageStartTimestamp": number,
  "UsageStopTimestamp": 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.

### Key

The key material, including the immutable and mutable data for the key.

Type: [Key](#) object

## Errors

### AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### InternalServerErrorException

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

HTTP Status Code: 500

### ResourceNotFoundException

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### ServiceUnavailableException

The service cannot complete the request.

HTTP Status Code: 500

### ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

### ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetParametersForExport

Gets the export token and the signing key certificate to initiate a TR-34 key export from AWS Payment Cryptography.

The signing key certificate signs the wrapped key under export within the TR-34 key payload. The export token and signing key certificate must be in place and operational before calling [ExportKey](#). The export token expires in 7 days. You can use the same export token to export multiple keys from your service account.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [ExportKey](#)
- [GetParametersForImport](#)

## Request Syntax

```
{
  "KeyMaterialType": "string",
  "SigningKeyAlgorithm": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [KeyMaterialType](#)

The key block format type (for example, TR-34 or TR-31) to use during key material export. Export token is only required for a TR-34 key export, TR34\_KEY\_BLOCK. Export token is not required for TR-31 key export.

Type: String

Valid Values: TR34\_KEY\_BLOCK | TR31\_KEY\_BLOCK | ROOT\_PUBLIC\_KEY\_CERTIFICATE  
| TRUSTED\_PUBLIC\_KEY\_CERTIFICATE | KEY\_CRYPTOGAM

Required: Yes

## SigningKeyAlgorithm

The signing key algorithm to generate a signing key certificate. This certificate signs the wrapped key under export within the TR-34 key block. RSA\_2048 is the only signing key algorithm allowed.

Type: String

Valid Values: TDES\_2KEY | TDES\_3KEY | AES\_128 | AES\_192 | AES\_256 | RSA\_2048 | RSA\_3072 | RSA\_4096

Required: Yes

## Response Syntax

```
{
  "ExportToken": "string",
  "ParametersValidUntilTimestamp": number,
  "SigningKeyAlgorithm": "string",
  "SigningKeyCertificate": "string",
  "SigningKeyCertificateChain": "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.

### ExportToken

The export token to initiate key export from AWS Payment Cryptography. The export token expires after 7 days. You can use the same export token to export multiple keys from the same service account.

Type: String

Pattern: export-token-[0-9a-zA-Z]{16,64}

### ParametersValidUntilTimestamp

The validity period of the export token.

Type: Timestamp

### SigningKeyAlgorithm

The algorithm of the signing key certificate for use in TR-34 key block generation. RSA\_2048 is the only signing key algorithm allowed.

Type: String

Valid Values: TDES\_2KEY | TDES\_3KEY | AES\_128 | AES\_192 | AES\_256 | RSA\_2048  
| RSA\_3072 | RSA\_4096

### SigningKeyCertificate

The signing key certificate in PEM format (base64 encoded) of the public key for signature within the TR-34 key block. The certificate expires after 7 days.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: [^\[;\]<>]+

### SigningKeyCertificateChain

The root certificate authority (CA) that signed the signing key certificate in PEM format (base64 encoded).

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: [^\[;\]<>]+

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetParametersForImport

Gets the import token and the wrapping key certificate in PEM format (base64 encoded) to initiate a TR-34 WrappedKeyBlock or a RSA WrappedKeyCryptogram import into AWS Payment Cryptography.

The wrapping key certificate wraps the key under import. The import token and wrapping key certificate must be in place and operational before calling [ImportKey](#). The import token expires in 7 days. You can use the same import token to import multiple keys into your service account.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [GetParametersForExport](#)
- [ImportKey](#)

## Request Syntax

```
{
  "KeyMaterialType": "string",
  "WrappingKeyAlgorithm": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [KeyMaterialType](#)

The method to use for key material import. Import token is only required for TR-34 WrappedKeyBlock (TR34\_KEY\_BLOCK) and RSA WrappedKeyCryptogram (KEY\_CRYPTOGAM).

Import token is not required for TR-31, root public key certificate or trusted public key certificate.

Type: String

Valid Values: TR34\_KEY\_BLOCK | TR31\_KEY\_BLOCK | ROOT\_PUBLIC\_KEY\_CERTIFICATE | TRUSTED\_PUBLIC\_KEY\_CERTIFICATE | KEY\_CRYPTOGAM

Required: Yes

### WrappingKeyAlgorithm

The wrapping key algorithm to generate a wrapping key certificate. This certificate wraps the key under import.

At this time, RSA\_2048 is the allowed algorithm for TR-34 WrappedKeyBlock import. Additionally, RSA\_2048, RSA\_3072, RSA\_4096 are the allowed algorithms for RSA WrappedKeyCryptogram import.

Type: String

Valid Values: TDES\_2KEY | TDES\_3KEY | AES\_128 | AES\_192 | AES\_256 | RSA\_2048 | RSA\_3072 | RSA\_4096

Required: Yes

## Response Syntax

```
{
  "ImportToken": "string",
  "ParametersValidUntilTimestamp": number,
  "WrappingKeyAlgorithm": "string",
  "WrappingKeyCertificate": "string",
  "WrappingKeyCertificateChain": "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.

### ImportToken

The import token to initiate key import into AWS Payment Cryptography. The import token expires after 7 days. You can use the same import token to import multiple keys to the same service account.

Type: String



Pattern: `import-token-[0-9a-zA-Z]{16,64}`

### ParametersValidUntilTimestamp

The validity period of the import token.

Type: Timestamp

### WrappingKeyAlgorithm

The algorithm of the wrapping key for use within TR-34 `WrappedKeyBlock` or `RSA WrappedKeyCryptogram`.

Type: String

Valid Values: `TDES_2KEY` | `TDES_3KEY` | `AES_128` | `AES_192` | `AES_256` | `RSA_2048`  
| `RSA_3072` | `RSA_4096`

### WrappingKeyCertificate

The wrapping key certificate in PEM format (base64 encoded) of the wrapping key for use within the TR-34 key block. The certificate expires in 7 days.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: `[\^\\[;\\]<>]+`

### WrappingKeyCertificateChain

The AWS Payment Cryptography root certificate authority (CA) that signed the wrapping key certificate in PEM format (base64 encoded).

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: `[\^\\[;\\]<>]+`

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetPublicKeyCertificate

Gets the public key certificate of the asymmetric key pair that exists within AWS Payment Cryptography.

Unlike the private key of an asymmetric key, which never leaves AWS Payment Cryptography unencrypted, callers with `GetPublicKeyCertificate` permission can download the public key certificate of the asymmetric key. You can share the public key certificate to allow others to encrypt messages and verify signatures outside of AWS Payment Cryptography.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Request Syntax

```
{
  "KeyIdentifier": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### KeyIdentifier

The KeyARN of the asymmetric key pair.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
```

```
"KeyCertificate": "string",  
"KeyCertificateChain": "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.

### KeyCertificate

The public key component of the asymmetric key pair in a certificate PEM format (base64 encoded). It is signed by the root certificate authority (CA). The certificate expires in 90 days.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: [^\[\;\<>]+

### KeyCertificateChain

The root certificate authority (CA) that signed the public key certificate in PEM format (base64 encoded) of the asymmetric key pair.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: [^\[\;\<>]+

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportKey

Imports symmetric keys and public key certificates in PEM format (base64 encoded) into AWS Payment Cryptography.

AWS Payment Cryptography simplifies key exchange by replacing the existing paper-based approach with a modern electronic approach. With `ImportKey` you can import symmetric keys using either symmetric and asymmetric key exchange mechanisms.

For symmetric key exchange, AWS Payment Cryptography uses the ANSI X9 TR-31 norm in accordance with PCI PIN guidelines. And for asymmetric key exchange, AWS Payment Cryptography supports ANSI X9 TR-34 norm and RSA wrap and unwrap key exchange mechanisms. Asymmetric key exchange methods are typically used to establish bi-directional trust between the two parties exchanging keys and are used for initial key exchange such as Key Encryption Key (KEK) or Zone Master Key (ZMK). After which you can import working keys using symmetric method to perform various cryptographic operations within AWS Payment Cryptography.

The TR-34 norm is intended for exchanging 3DES keys only and keys are imported in a `WrappedKeyBlock` format. Key attributes (such as `KeyUsage`, `KeyAlgorithm`, `KeyModesOfUse`, `Exportability`) are contained within the key block. With RSA wrap and unwrap, you can exchange both 3DES and AES-128 keys. The keys are imported in a `WrappedKeyCryptogram` format and you will need to specify the key attributes during import.

You can also import a *root public key certificate*, used to sign other public key certificates, or a *trusted public key certificate* under an already established root public key certificate.

## To import a public root key certificate

You can also import a *root public key certificate*, used to sign other public key certificates, or a *trusted public key certificate* under an already established root public key certificate.

## To import a public root key certificate

Using this operation, you can import the public component (in PEM certificate format) of your private root key. You can use the imported public root key certificate for digital signatures, for example signing wrapping key or signing key in TR-34, within your AWS Payment Cryptography account.

Set the following parameters:

- **KeyMaterial:** `RootCertificatePublicKey`
- **KeyClass:** `PUBLIC_KEY`
- **KeyModesOfUse:** `Verify`
- **KeyUsage:** `TR31_S0_ASYMMETRIC_KEY_FOR_DIGITAL_SIGNATURE`
- **PublicKeyCertificate:** The public key certificate in PEM format (base64 encoded) of the private root key under import.

### To import a trusted public key certificate

The root public key certificate must be in place and operational before you import a trusted public key certificate. Set the following parameters:

- **KeyMaterial:** `TrustedCertificatePublicKey`
- **CertificateAuthorityPublicKeyIdentifier:** KeyArn of the `RootCertificatePublicKey`.
- **KeyModesOfUse** and **KeyUsage:** Corresponding to the cryptographic operations such as wrap, sign, or encrypt that you will allow the trusted public key certificate to perform.
- **PublicKeyCertificate:** The trusted public key certificate in PEM format (base64 encoded) under import.

### To import initial keys (KEK or ZMK or similar) using TR-34

Using this operation, you can import initial key using TR-34 asymmetric key exchange. In TR-34 terminology, the sending party of the key is called Key Distribution Host (KDH) and the receiving party of the key is called Key Receiving Device (KRD). During the key import process, KDH is the user who initiates the key import and KRD is AWS Payment Cryptography who receives the key.

To initiate TR-34 key import, the KDH must obtain an import token by calling [GetParametersForImport](#). This operation generates an encryption keypair for the purpose of key import, signs the key and returns back the wrapping key certificate (also known as KRD wrapping certificate) and the root certificate chain. The KDH must trust and install the KRD wrapping certificate on its HSM and use it to encrypt (wrap) the KDH key during TR-34 `WrappedKeyBlock` generation. The import token and associated KRD wrapping certificate expires after 7 days.

Next the KDH generates a key pair for the purpose of signing the encrypted KDH key and provides the public certificate of the signing key to AWS Payment Cryptography. The KDH will also need



to import the root certificate chain of the KDH signing certificate by calling `ImportKey` for `RootCertificatePublicKey`. For more information on TR-34 key import, see section [Importing symmetric keys](#) in the *AWS Payment Cryptography User Guide*.

Set the following parameters:

- `KeyMaterial`: Use `Tr34KeyBlock` parameters.
- `CertificateAuthorityPublicKeyIdentifier`: The KeyARN of the certificate chain that signed the KDH signing key certificate.
- `ImportToken`: Obtained from KRD by calling [GetParametersForImport](#).
- `WrappedKeyBlock`: The TR-34 wrapped key material from KDH. It contains the KDH key under import, wrapped with KRD wrapping certificate and signed by KDH signing private key. This TR-34 key block is typically generated by the KDH Hardware Security Module (HSM) outside of AWS Payment Cryptography.
- `SigningKeyCertificate`: The public key certificate in PEM format (base64 encoded) of the KDH signing key generated under the root certificate (`CertificateAuthorityPublicKeyIdentifier`) imported in AWS Payment Cryptography.

### To import initial keys (KEK or ZMK or similar) using RSA Wrap and Unwrap

Using this operation, you can import initial key using asymmetric RSA wrap and unwrap key exchange method. To initiate import, call [GetParametersForImport](#) with `KeyMaterial` set to `KEY_CRYPTOGRAM` to generate an import token. This operation also generates an encryption keypair for the purpose of key import, signs the key and returns back the wrapping key certificate in PEM format (base64 encoded) and its root certificate chain. The import token and associated KRD wrapping certificate expires after 7 days.

You must trust and install the wrapping certificate and its certificate chain on the sending HSM and use it to wrap the key under export for `WrappedKeyCryptogram` generation. Next call `ImportKey` with `KeyMaterial` set to `KEY_CRYPTOGRAM` and provide the `ImportToken` and `KeyAttributes` for the key under import.

### To import working keys using TR-31

AWS Payment Cryptography uses TR-31 symmetric key exchange norm to import working keys. A KEK must be established within AWS Payment Cryptography by using TR-34 key import or by using [CreateKey](#). To initiate a TR-31 key import, set the following parameters:

- **KeyMaterial**: Use `Tr31KeyBlock` parameters.
- **WrappedKeyBlock**: The TR-31 wrapped key material. It contains the key under import, encrypted using KEK. The TR-31 key block is typically generated by a HSM outside of AWS Payment Cryptography.
- **WrappingKeyIdentifier**: The `KeyArn` of the KEK that AWS Payment Cryptography uses to decrypt or unwrap the key under import.

**Cross-account use:** This operation can't be used across different AWS accounts.

### Related operations:

- [ExportKey](#)
- [GetParametersForImport](#)

## Request Syntax

```
{
  "Enabled": boolean,
  "KeyCheckValueAlgorithm": "string",
  "KeyMaterial": { ... },
  "Tags": [
    {
      "Key": "string",
      "Value": "string"
    }
  ]
}
```

## Request Parameters

The request accepts the following data in JSON format.

### Enabled

Specifies whether import key is enabled.

Type: Boolean

Required: No

## [KeyCheckValueAlgorithm](#)

The algorithm that AWS Payment Cryptography uses to calculate the key check value (KCV). It is used to validate the key integrity.

For TDES keys, the KCV is computed by encrypting 8 bytes, each with value of zero, with the key to be checked and retaining the 3 highest order bytes of the encrypted result. For AES keys, the KCV is computed using a CMAC algorithm where the input data is 16 bytes of zero and retaining the 3 highest order bytes of the encrypted result.

Type: String

Valid Values: CMAC | ANSI\_X9\_24

Required: No

## [KeyMaterial](#)

The key or public key certificate type to use during key material import, for example TR-34 or RootCertificatePublicKey.

Type: [ImportKeyMaterial](#) object

**Note:** This object is a Union. Only one member of this object can be specified or returned.

Required: Yes

## [Tags](#)

Assigns one or more tags to the AWS Payment Cryptography key. Use this parameter to tag a key when it is imported. To tag an existing AWS Payment Cryptography key, use the [TagResource](#) operation.

Each tag consists of a tag key and a tag value. Both the tag key and the tag value are required, but the tag value can be an empty (null) string. You can't have more than one tag on an AWS Payment Cryptography key with the same tag key. If you specify an existing tag key with a different tag value, AWS Payment Cryptography replaces the current tag value with the specified one.

### Important

Don't include personal, confidential or sensitive information in this field. This field may be displayed in plaintext in AWS CloudTrail logs and other output.

**Note**

Tagging or untagging an AWS Payment Cryptography key can allow or deny permission to the key.

Type: Array of [Tag](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

## Response Syntax

```
{
  "Key": {
    "CreateTimestamp": number,
    "DeletePendingTimestamp": number,
    "DeleteTimestamp": number,
    "Enabled": boolean,
    "Exportable": boolean,
    "KeyArn": "string",
    "KeyAttributes": {
      "KeyAlgorithm": "string",
      "KeyClass": "string",
      "KeyModesOfUse": {
        "Decrypt": boolean,
        "DeriveKey": boolean,
        "Encrypt": boolean,
        "Generate": boolean,
        "NoRestrictions": boolean,
        "Sign": boolean,
        "Unwrap": boolean,
        "Verify": boolean,
        "Wrap": boolean
      },
      "KeyUsage": "string"
    },
    "KeyCheckValue": "string",
    "KeyCheckValueAlgorithm": "string",
    "KeyOrigin": "string",
    "KeyState": "string",
```

```
    "UsageStartTimestamp": number,  
    "UsageStopTimestamp": 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.

### [Key](#)

The KeyARN of the key material imported within AWS Payment Cryptography.

Type: [Key](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListAliases

Lists the aliases for all keys in the caller's AWS account and AWS Region. You can filter the list of aliases. For more information, see [Using aliases](#) in the *AWS Payment Cryptography User Guide*.

This is a paginated operation, which means that each response might contain only a subset of all the aliases. When the response contains only a subset of aliases, it includes a `NextToken` value. Use this value in a subsequent `ListAliases` request to get more aliases. When you receive a response with no `NextToken` (or an empty or null value), that means there are no more aliases to get.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [CreateAlias](#)
- [DeleteAlias](#)
- [GetAlias](#)
- [UpdateAlias](#)

## Request Syntax

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

## Request Parameters

The request accepts the following data in JSON format.

### [MaxResults](#)

Use this parameter to specify the maximum number of items to return. When this value is present, AWS Payment Cryptography does not return more than the specified number of items, but it might return fewer.

This value is optional. If you include a value, it must be between 1 and 100, inclusive. If you do not include a value, it defaults to 50.

Type: Integer

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

Required: No

### NextToken

Use this parameter in a subsequent request after you receive a response with truncated results. Set it to the value of NextToken from the truncated response you just received.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 8192.

Required: No

## Response Syntax

```
{
  "Aliases": [
    {
      "AliasName": "string",
      "KeyArn": "string"
    }
  ],
  "NextToken": "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.

### Aliases

The list of aliases. Each alias describes the KeyArn contained within.

Type: Array of [Alias](#) objects

### NextToken

The token for the next set of results, or an empty or null value if there are no more results.



Type: String

Length Constraints: Minimum length of 1. Maximum length of 8192.

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ListKeys

Lists the keys in the caller's AWS account and AWS Region. You can filter the list of keys.

This is a paginated operation, which means that each response might contain only a subset of all the keys. When the response contains only a subset of keys, it includes a `NextToken` value. Use this value in a subsequent `ListKeys` request to get more keys. When you receive a response with no `NextToken` (or an empty or null value), that means there are no more keys to get.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [CreateKey](#)
- [DeleteKey](#)
- [GetKey](#)

## Request Syntax

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

## Request Parameters

The request accepts the following data in JSON format.

### [KeyState](#)

The key state of the keys you want to list.

Type: String

Valid Values: CREATE\_IN\_PROGRESS | CREATE\_COMPLETE | DELETE\_PENDING | DELETE\_COMPLETE

Required: No

## MaxResults

Use this parameter to specify the maximum number of items to return. When this value is present, AWS Payment Cryptography does not return more than the specified number of items, but it might return fewer.

This value is optional. If you include a value, it must be between 1 and 100, inclusive. If you do not include a value, it defaults to 50.

Type: Integer

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

Required: No

## NextToken

Use this parameter in a subsequent request after you receive a response with truncated results. Set it to the value of NextToken from the truncated response you just received.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 8192.

Required: No

## Response Syntax

```
{
  "Keys": [
    {
      "Enabled": boolean,
      "Exportable": boolean,
      "KeyArn": "string",
      "KeyAttributes": {
        "KeyAlgorithm": "string",
        "KeyClass": "string",
        "KeyModesOfUse": {
          "Decrypt": boolean,
          "DeriveKey": boolean,
          "Encrypt": boolean,
          "Generate": boolean,

```

```
        "NoRestrictions": boolean,
        "Sign": boolean,
        "Unwrap": boolean,
        "Verify": boolean,
        "Wrap": boolean
    },
    "KeyUsage": "string"
},
"KeyCheckValue": "string",
"KeyState": "string"
}
],
"NextToken": "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.

### Keys

The list of keys created within the caller's AWS account and AWS Region.

Type: Array of [KeySummary](#) objects

### NextToken

The token for the next set of results, or an empty or null value if there are no more results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 8192.

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

## **InternalServerErrorException**

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

HTTP Status Code: 500

## **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

## **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

## **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

## **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)

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

# ListTagsForResource

Lists the tags for an AWS resource.

This is a paginated operation, which means that each response might contain only a subset of all the tags. When the response contains only a subset of tags, it includes a `NextToken` value. Use this value in a subsequent `ListTagsForResource` request to get more tags. When you receive a response with no `NextToken` (or an empty or null value), that means there are no more tags to get.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [TagResource](#)
- [UntagResource](#)

## Request Syntax

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

## Request Parameters

The request accepts the following data in JSON format.

### [MaxResults](#)

Use this parameter to specify the maximum number of items to return. When this value is present, AWS Payment Cryptography does not return more than the specified number of items, but it might return fewer.

This value is optional. If you include a value, it must be between 1 and 100, inclusive. If you do not include a value, it defaults to 50.

Type: Integer

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



Required: No

### NextToken

Use this parameter in a subsequent request after you receive a response with truncated results. Set it to the value of NextToken from the truncated response you just received.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 8192.

Required: No

### ResourceArn

The KeyARN of the key whose tags you are getting.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: Yes

## Response Syntax

```
{
  "NextToken": "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.

## NextToken

The token for the next set of results, or an empty or null value if there are no more results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 8192.

## Tags

The list of tags associated with a ResourceArn. Each tag will list the key-value pair contained within that tag.

Type: Array of [Tag](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **InternalServerError**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RestoreKey

Cancels a scheduled key deletion during the waiting period. Use this operation to restore a Key that is scheduled for deletion.

During the waiting period, the `KeyState` is `DELETE_PENDING` and `deletePendingTimestamp` contains the date and time after which the Key will be deleted. After Key is restored, the `KeyState` is `CREATE_COMPLETE`, and the value for `deletePendingTimestamp` is removed.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [DeleteKey](#)
- [StartKeyUsage](#)
- [StopKeyUsage](#)

## Request Syntax

```
{  
  "KeyIdentifier": "string"  
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [KeyIdentifier](#)

The KeyARN of the key to be restored within AWS Payment Cryptography.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
  "Key": {
    "CreateTimestamp": number,
    "DeletePendingTimestamp": number,
    "DeleteTimestamp": number,
    "Enabled": boolean,
    "Exportable": boolean,
    "KeyArn": "string",
    "KeyAttributes": {
      "KeyAlgorithm": "string",
      "KeyClass": "string",
      "KeyModesOfUse": {
        "Decrypt": boolean,
        "DeriveKey": boolean,
        "Encrypt": boolean,
        "Generate": boolean,
        "NoRestrictions": boolean,
        "Sign": boolean,
        "Unwrap": boolean,
        "Verify": boolean,
        "Wrap": boolean
      },
      "KeyUsage": "string"
    },
    "KeyCheckValue": "string",
    "KeyCheckValueAlgorithm": "string",
    "KeyOrigin": "string",
    "KeyState": "string",
    "UsageStartTimestamp": number,
    "UsageStopTimestamp": 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.

## [Key](#)

The key material of the restored key. The KeyState will change to CREATE\_COMPLETE and value for DeletePendingTimestamp gets removed.

Type: [Key](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerError**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

## ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StartKeyUsage

Enables an AWS Payment Cryptography key, which makes it active for cryptographic operations within AWS Payment Cryptography

**Cross-account use:** This operation can't be used across different AWS accounts.

**Related operations:**

- [StopKeyUsage](#)

## Request Syntax

```
{
  "KeyIdentifier": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [KeyIdentifier](#)

The KeyArn of the key.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
```



```
"Key": {
  "CreateTimestamp": number,
  "DeletePendingTimestamp": number,
  "DeleteTimestamp": number,
  "Enabled": boolean,
  "Exportable": boolean,
  "KeyArn": "string",
  "KeyAttributes": {
    "KeyAlgorithm": "string",
    "KeyClass": "string",
    "KeyModesOfUse": {
      "Decrypt": boolean,
      "DeriveKey": boolean,
      "Encrypt": boolean,
      "Generate": boolean,
      "NoRestrictions": boolean,
      "Sign": boolean,
      "Unwrap": boolean,
      "Verify": boolean,
      "Wrap": boolean
    },
    "KeyUsage": "string"
  },
  "KeyCheckValue": "string",
  "KeyCheckValueAlgorithm": "string",
  "KeyOrigin": "string",
  "KeyState": "string",
  "UsageStartTimestamp": number,
  "UsageStopTimestamp": 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.

### Key

The KeyARN of the AWS Payment Cryptography key activated for use.

Type: [Key](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

## 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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StopKeyUsage

Disables an AWS Payment Cryptography key, which makes it inactive within AWS Payment Cryptography.

You can use this operation instead of [DeleteKey](#) to deactivate a key. You can enable the key in the future by calling [StartKeyUsage](#).

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [DeleteKey](#)
- [StartKeyUsage](#)

## Request Syntax

```
{
  "KeyIdentifier": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [KeyIdentifier](#)

The KeyArn of the key.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

## Response Syntax

```
{
  "Key": {
    "CreateTimestamp": number,
    "DeletePendingTimestamp": number,
    "DeleteTimestamp": number,
    "Enabled": boolean,
    "Exportable": boolean,
    "KeyArn": "string",
    "KeyAttributes": {
      "KeyAlgorithm": "string",
      "KeyClass": "string",
      "KeyModesOfUse": {
        "Decrypt": boolean,
        "DeriveKey": boolean,
        "Encrypt": boolean,
        "Generate": boolean,
        "NoRestrictions": boolean,
        "Sign": boolean,
        "Unwrap": boolean,
        "Verify": boolean,
        "Wrap": boolean
      },
      "KeyUsage": "string"
    },
    "KeyCheckValue": "string",
    "KeyCheckValueAlgorithm": "string",
    "KeyOrigin": "string",
    "KeyState": "string",
    "UsageStartTimestamp": number,
    "UsageStopTimestamp": 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.

## [Key](#)

The KeyARN of the key.

Type: [Key](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# TagResource

Adds or edits tags on an AWS Payment Cryptography key.

## Note

Tagging or untagging an AWS Payment Cryptography key can allow or deny permission to the key.

Each tag consists of a tag key and a tag value, both of which are case-sensitive strings. The tag value can be an empty (null) string. To add a tag, specify a new tag key and a tag value. To edit a tag, specify an existing tag key and a new tag value. You can also add tags to an AWS Payment Cryptography key when you create it with [CreateKey](#).

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [ListTagsForResource](#)
- [UntagResource](#)

## Request Syntax

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

## Request Parameters

The request accepts the following data in JSON format.



## ResourceArn

The KeyARN of the key whose tags are being updated.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: Yes

## Tags

One or more tags. Each tag consists of a tag key and a tag value. The tag value can be an empty (null) string. You can't have more than one tag on an AWS Payment Cryptography key with the same tag key. If you specify an existing tag key with a different tag value, AWS Payment Cryptography replaces the current tag value with the new one.

### **Important**

Don't include personal, confidential or sensitive information in this field. This field may be displayed in plaintext in AWS CloudTrail logs and other output.

To use this parameter, you must have [TagResource](#) permission in an IAM policy.

### **Important**

Don't include personal, confidential or sensitive information in this field. This field may be displayed in plaintext in AWS CloudTrail logs and other output.

Type: Array of [Tag](#) objects

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: Yes

## Response Elements

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

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceQuotaExceededException**

This request would cause a service quota to be exceeded.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

## ValidationException

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UntagResource

Deletes a tag from an AWS Payment Cryptography key.

## Note

Tagging or untagging an AWS Payment Cryptography key can allow or deny permission to the key.

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [ListTagsForResource](#)
- [TagResource](#)

## Request Syntax

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

## Request Parameters

The request accepts the following data in JSON format.

### [ResourceArn](#)

The KeyARN of the key whose tags are being removed.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: Yes

## TagKeys

One or more tag keys. Don't include the tag values.

If the AWS Payment Cryptography key doesn't have the specified tag key, AWS Payment Cryptography doesn't throw an exception or return a response. To confirm that the operation succeeded, use the [ListTagsForResource](#) operation.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: Yes

## Response Elements

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

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

### **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

### **InternalServerErrorException**

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

HTTP Status Code: 500

### **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

### **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

### **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

### **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateAlias

Associates an existing AWS Payment Cryptography alias with a different key. Each alias is associated with only one AWS Payment Cryptography key at a time, although a key can have multiple aliases. The alias and the AWS Payment Cryptography key must be in the same AWS account and AWS Region

**Cross-account use:** This operation can't be used across different AWS accounts.

## Related operations:

- [CreateAlias](#)
- [DeleteAlias](#)
- [GetAlias](#)
- [ListAliases](#)

## Request Syntax

```
{
  "AliasName": "string",
  "KeyArn": "string"
}
```

## Request Parameters

The request accepts the following data in JSON format.

### [AliasName](#)

The alias whose associated key is changing.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 256.

Pattern: alias/[a-zA-Z0-9/\_-]+

Required: Yes

## KeyArn

The KeyARN for the key that you are updating or removing from the alias.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: No

## Response Syntax

```
{
  "Alias": {
    "AliasName": "string",
    "KeyArn": "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.

### Alias

The alias name.

Type: [Alias](#) object

## Errors

### **AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400



## **ConflictException**

This request can cause an inconsistent state for the resource.

HTTP Status Code: 400

## **InternalServerErrorException**

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

HTTP Status Code: 500

## **ResourceNotFoundException**

The request was denied due to an invalid resource error.

HTTP Status Code: 400

## **ServiceUnavailableException**

The service cannot complete the request.

HTTP Status Code: 500

## **ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

## **ValidationException**

The request was denied due to an invalid request error.

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 v2](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript V3](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# Data Types

The Payment Cryptography Control Plane 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:

- [Alias](#)
- [ExportAttributes](#)
- [ExportDukptInitialKey](#)
- [ExportKeyCryptogram](#)
- [ExportKeyMaterial](#)
- [ExportTr31KeyBlock](#)
- [ExportTr34KeyBlock](#)
- [ImportKeyCryptogram](#)
- [ImportKeyMaterial](#)
- [ImportTr31KeyBlock](#)
- [ImportTr34KeyBlock](#)
- [Key](#)
- [KeyAttributes](#)
- [KeyBlockHeaders](#)
- [KeyModesOfUse](#)
- [KeySummary](#)
- [RootCertificatePublicKey](#)
- [Tag](#)
- [TrustedCertificatePublicKey](#)
- [WrappedKey](#)



# Alias

Contains information about an alias.

## Contents

### AliasName

A friendly name that you can use to refer to a key. The value must begin with `alias/`.

#### Important

Do not include confidential or sensitive information in this field. This field may be displayed in plaintext in AWS CloudTrail logs and other output.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 256.

Pattern: `alias/[a-zA-Z0-9/_-]+`

Required: Yes

### KeyArn

The KeyARN of the key associated with the alias.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

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](#)

# ExportAttributes

The attributes for IPEK generation during export.

## Contents

### ExportDukptInitialKey

Parameter information for IPEK export.

Type: [ExportDukptInitialKey](#) object

Required: No

### KeyCheckValueAlgorithm

The algorithm that AWS Payment Cryptography uses to calculate the key check value (KCV). It is used to validate the key integrity. Specify KCV for IPEK export only.

For TDES keys, the KCV is computed by encrypting 8 bytes, each with value of zero, with the key to be checked and retaining the 3 highest order bytes of the encrypted result. For AES keys, the KCV is computed using a CMAC algorithm where the input data is 16 bytes of zero and retaining the 3 highest order bytes of the encrypted result.

Type: String

Valid Values: CMAC | ANSI\_X9\_24

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](#)

# ExportDukptInitialKey

Parameter information for IPEK generation during export.

## Contents

### KeySerialNumber

The KSN for IPEK generation using DUKPT.

KSN must be padded before sending to AWS Payment Cryptography. KSN hex length should be 20 for a TDES\_2KEY key or 24 for an AES key.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 24.

Pattern: `[0-9A-F]{20}$|^[0-9A-F]{24}`

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



# ExportKeyCryptogram

Parameter information for key material export using asymmetric RSA wrap and unwrap key exchange method.

## Contents

### CertificateAuthorityPublicKeyIdentifier

The KeyARN of the certificate chain that signs the wrapping key certificate during RSA wrap and unwrap key export.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

### WrappingKeyCertificate

The wrapping key certificate in PEM format (base64 encoded). AWS Payment Cryptography uses this certificate to wrap the key under export.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: `[^\[\;\<>]+`

Required: Yes

### WrappingSpec

The wrapping spec for the key under export.

Type: String

Valid Values: `RSA_OAEP_SHA_256 | RSA_OAEP_SHA_512`

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](#)

# ExportKeyMaterial

Parameter information for key material export from AWS Payment Cryptography using TR-31 or TR-34 or RSA wrap and unwrap key exchange method.

## Contents

### Important

This data type is a UNION, so only one of the following members can be specified when used or returned.

### KeyCryptogram

Parameter information for key material export using asymmetric RSA wrap and unwrap key exchange method

Type: [ExportKeyCryptogram](#) object

Required: No

### Tr31KeyBlock

Parameter information for key material export using symmetric TR-31 key exchange method.

Type: [ExportTr31KeyBlock](#) object

Required: No

### Tr34KeyBlock

Parameter information for key material export using the asymmetric TR-34 key exchange method.

Type: [ExportTr34KeyBlock](#) 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 Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportTr31KeyBlock

Parameter information for key material export using symmetric TR-31 key exchange method.

## Contents

### WrappingKeyIdentifier

The KeyARN of the the wrapping key. This key encrypts or wraps the key under export for TR-31 key block generation.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

### KeyBlockHeaders

Optional metadata for export associated with the key material. This data is signed but transmitted in clear text.

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

# ExportTr34KeyBlock

Parameter information for key material export using the asymmetric TR-34 key exchange method.

## Contents

### CertificateAuthorityPublicKeyIdentifier

The KeyARN of the certificate chain that signs the wrapping key certificate during TR-34 key export.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

### ExportToken

The export token to initiate key export from AWS Payment Cryptography. It also contains the signing key certificate that will sign the wrapped key during TR-34 key block generation. Call [GetParametersForExport](#) to receive an export token. It expires after 7 days. You can use the same export token to export multiple keys from the same service account.

Type: String

Pattern: `export-token-[0-9a-zA-Z]{16,64}`

Required: Yes

### KeyBlockFormat

The format of key block that AWS Payment Cryptography will use during key export.

Type: String

Valid Values: X9\_TR34\_2012

Required: Yes

## WrappingKeyCertificate

The KeyARN of the wrapping key certificate. AWS Payment Cryptography uses this certificate to wrap the key under export.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: [^\[\;\<>]+

Required: Yes

## KeyBlockHeaders

Optional metadata for export associated with the key material. This data is signed but transmitted in clear text.

Type: [KeyBlockHeaders](#) object

Required: No

## RandomNonce

A random number value that is unique to the TR-34 key block generated using 2 pass. The operation will fail, if a random nonce value is not provided for a TR-34 key block generated using 2 pass.

Type: String

Length Constraints: Fixed length of 16.

Pattern: [0-9A-F]+

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](#)



# ImportKeyCryptogram

Parameter information for key material import using asymmetric RSA wrap and unwrap key exchange method.

## Contents

### Exportable

Specifies whether the key is exportable from the service.

Type: Boolean

Required: Yes

### ImportToken

The import token that initiates key import using the asymmetric RSA wrap and unwrap key exchange method into AWS Payment Cryptography. It expires after 7 days. You can use the same import token to import multiple keys to the same service account.

Type: String

Pattern: `import-token-[0-9a-zA-Z]{16,64}`

Required: Yes

### KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after the key is created.

Type: [KeyAttributes](#) object

Required: Yes

### WrappedKeyCryptogram

The RSA wrapped key cryptogram under import.

Type: String

Length Constraints: Minimum length of 16. Maximum length of 4096.

Pattern: `[0-9A-F]+`

Required: Yes

### WrappingSpec

The wrapping spec for the wrapped key cryptogram.

Type: String

Valid Values: `RSA_OAEP_SHA_256` | `RSA_OAEP_SHA_512`

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](#)

# ImportKeyMaterial

Parameter information for key material import into AWS Payment Cryptography using TR-31 or TR-34 or RSA wrap and unwrap key exchange method.

## Contents

### Important

This data type is a UNION, so only one of the following members can be specified when used or returned.

## KeyCryptogram

Parameter information for key material import using asymmetric RSA wrap and unwrap key exchange method.

Type: [ImportKeyCryptogram](#) object

Required: No

## RootCertificatePublicKey

Parameter information for root public key certificate import.

Type: [RootCertificatePublicKey](#) object

Required: No

## Tr31KeyBlock

Parameter information for key material import using symmetric TR-31 key exchange method.

Type: [ImportTr31KeyBlock](#) object

Required: No

## Tr34KeyBlock

Parameter information for key material import using the asymmetric TR-34 key exchange method.

Type: [ImportTr34KeyBlock](#) object

Required: No

### **TrustedCertificatePublicKey**

Parameter information for trusted public key certificate import.

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

# ImportTr31KeyBlock

Parameter information for key material import using symmetric TR-31 key exchange method.

## Contents

### WrappedKeyBlock

The TR-31 wrapped key block to import.

Type: String

Length Constraints: Minimum length of 56. Maximum length of 9984.

Pattern: `[0-9A-Z]+`

Required: Yes

### WrappingKeyIdIdentifier

The KeyARN of the key that will decrypt or unwrap a TR-31 key block during import.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

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

# ImportTr34KeyBlock

Parameter information for key material import using the asymmetric TR-34 key exchange method.

## Contents

### CertificateAuthorityPublicKeyIdentifier

The KeyARN of the certificate chain that signs the signing key certificate during TR-34 key import.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

### ImportToken

The import token that initiates key import using the asymmetric TR-34 key exchange method into AWS Payment Cryptography. It expires after 7 days. You can use the same import token to import multiple keys to the same service account.

Type: String

Pattern: `import-token-[0-9a-zA-Z]{16,64}`

Required: Yes

### KeyBlockFormat

The key block format to use during key import. The only value allowed is X9\_TR34\_2012.

Type: String

Valid Values: X9\_TR34\_2012

Required: Yes

## SigningKeyCertificate

The public key component in PEM certificate format of the private key that signs the KDH TR-34 WrappedKeyBlock.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: [^\[\;\<>]+

Required: Yes

## WrappedKeyBlock

The TR-34 wrapped key block to import.

Type: String

Length Constraints: Minimum length of 2. Maximum length of 4096.

Pattern: [0-9A-F]+

Required: Yes

## RandomNonce

A random number value that is unique to the TR-34 key block generated using 2 pass. The operation will fail, if a random nonce value is not provided for a TR-34 key block generated using 2 pass.

Type: String

Length Constraints: Fixed length of 16.

Pattern: [0-9A-F]+

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](#)



# Key

Metadata about an AWS Payment Cryptography key.

## Contents

### CreateTimestamp

The date and time when the key was created.

Type: Timestamp

Required: Yes

### Enabled

Specifies whether the key is enabled.

Type: Boolean

Required: Yes

### Exportable

Specifies whether the key is exportable. This data is immutable after the key is created.

Type: Boolean

Required: Yes

### KeyArn

The Amazon Resource Name (ARN) of the key.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: Yes

### KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after the key is created.

Type: [KeyAttributes](#) object

Required: Yes

### KeyCheckValue

The key check value (KCV) is used to check if all parties holding a given key have the same key or to detect that a key has changed.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 16.

Pattern: `[0-9a-fA-F]+`

Required: Yes

### KeyCheckValueAlgorithm

The algorithm that AWS Payment Cryptography uses to calculate the key check value (KCV). It is used to validate the key integrity.

For TDES keys, the KCV is computed by encrypting 8 bytes, each with value of zero, with the key to be checked and retaining the 3 highest order bytes of the encrypted result. For AES keys, the KCV is computed using a CMAC algorithm where the input data is 16 bytes of zero and retaining the 3 highest order bytes of the encrypted result.

Type: String

Valid Values: CMAC | ANSI\_X9\_24

Required: Yes

### KeyOrigin

The source of the key material. For keys created within AWS Payment Cryptography, the value is `AWS_PAYMENT_CRYPTOGRAPHY`. For keys imported into AWS Payment Cryptography, the value is `EXTERNAL`.

Type: String

Valid Values: EXTERNAL | AWS\_PAYMENT\_CRYPTOGRAPHY

Required: Yes

## KeyState

The state of key that is being created or deleted.

Type: String

Valid Values: CREATE\_IN\_PROGRESS | CREATE\_COMPLETE | DELETE\_PENDING | DELETE\_COMPLETE

Required: Yes

## DeletePendingTimestamp

The date and time after which AWS Payment Cryptography will delete the key. This value is present only when KeyState is DELETE\_PENDING and the key is scheduled for deletion.

Type: Timestamp

Required: No

## DeleteTimestamp

The date and time after which AWS Payment Cryptography will delete the key. This value is present only when when the KeyState is DELETE\_COMPLETE and the AWS Payment Cryptography key is deleted.

Type: Timestamp

Required: No

## UsageStartTimestamp

The date and time after which AWS Payment Cryptography will start using the key material for cryptographic operations.

Type: Timestamp

Required: No

## UsageStopTimestamp

The date and time after which AWS Payment Cryptography will stop using the key material for cryptographic operations.

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

# KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after the key is created.

## Contents

### KeyAlgorithm

The key algorithm to be use during creation of an AWS Payment Cryptography key.

For symmetric keys, AWS Payment Cryptography supports AES and TDES algorithms. For asymmetric keys, AWS Payment Cryptography supports RSA and ECC\_NIST algorithms.

Type: String

Valid Values: TDES\_2KEY | TDES\_3KEY | AES\_128 | AES\_192 | AES\_256 | RSA\_2048  
| RSA\_3072 | RSA\_4096

Required: Yes

### KeyClass

The type of AWS Payment Cryptography key to create, which determines the classification of the cryptographic method and whether AWS Payment Cryptography key contains a symmetric key or an asymmetric key pair.

Type: String

Valid Values: SYMMETRIC\_KEY | ASYMMETRIC\_KEY\_PAIR | PRIVATE\_KEY | PUBLIC\_KEY

Required: Yes

### KeyModesOfUse

The list of cryptographic operations that you can perform using the key.

Type: [KeyModesOfUse](#) object

Required: Yes

### KeyUsage

The cryptographic usage of an AWS Payment Cryptography key as defined in section A.5.2 of the TR-31 spec.

Type: String

Valid Values: TR31\_B0\_BASE\_DERIVATION\_KEY | TR31\_C0\_CARD\_VERIFICATION\_KEY | TR31\_D0\_SYMMETRIC\_DATA\_ENCRYPTION\_KEY | TR31\_D1\_ASYMMETRIC\_KEY\_FOR\_DATA\_ENCRYPTION | TR31\_E0\_EMV\_MKEY\_APP\_CRYPTOGRAMS | TR31\_E1\_EMV\_MKEY\_CONFIDENTIALITY | TR31\_E2\_EMV\_MKEY\_INTEGRITY | TR31\_E4\_EMV\_MKEY\_DYNAMIC\_NUMBERS | TR31\_E5\_EMV\_MKEY\_CARD\_PERSONALIZATION | TR31\_E6\_EMV\_MKEY\_OTHER | TR31\_K0\_KEY\_ENCRYPTION\_KEY | TR31\_K1\_KEY\_BLOCK\_PROTECTION\_KEY | TR31\_K3\_ASYMMETRIC\_KEY\_FOR\_KEY\_AGREEMENT | TR31\_M3\_ISO\_9797\_3\_MAC\_KEY | TR31\_M1\_ISO\_9797\_1\_MAC\_KEY | TR31\_M6\_ISO\_9797\_5\_CMAC\_KEY | TR31\_M7\_HMAC\_KEY | TR31\_P0\_PIN\_ENCRYPTION\_KEY | TR31\_P1\_PIN\_GENERATION\_KEY | TR31\_S0\_ASYMMETRIC\_KEY\_FOR\_DIGITAL\_SIGNATURE | TR31\_V1\_IBM3624\_PIN\_VERIFICATION\_KEY | TR31\_V2\_VISA\_PIN\_VERIFICATION\_KEY | TR31\_K2\_TR34\_ASYMMETRIC\_KEY

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

# KeyBlockHeaders

Optional metadata for export associated with the key material. This data is signed but transmitted in clear text.

## Contents

### KeyExportability

Specifies subsequent exportability of the key within the key block after it is received by the receiving party. It can be used to further restrict exportability of the key after export from AWS Payment Cryptography.

When set to `EXPORTABLE`, the key can be subsequently exported by the receiver under a KEK using TR-31 or TR-34 key block export only. When set to `NON_EXPORTABLE`, the key cannot be subsequently exported by the receiver. When set to `SENSITIVE`, the key can be exported by the receiver under a KEK using TR-31, TR-34, RSA wrap and unwrap cryptogram or using a symmetric cryptogram key export method. For further information refer to [ANSI X9.143-2022](#).

Type: String

Valid Values: `EXPORTABLE` | `NON_EXPORTABLE` | `SENSITIVE`

Required: No

### KeyModesOfUse

The list of cryptographic operations that you can perform using the key. The modes of use are defined in section A.5.3 of the TR-31 spec.

Type: [KeyModesOfUse](#) object

Required: No

### KeyVersion

Parameter used to indicate the version of the key carried in the key block or indicate the value carried in the key block is a component of a key.

Type: String

Length Constraints: Fixed length of 2.

Pattern: `[0-9A-Z]{2}+`

Required: No

## OptionalBlocks

Parameter used to indicate the type of optional data in key block headers. Refer to [ANSI X9.143-2022](#) for information on allowed data type for optional blocks.

Optional block character limit is 112 characters. For each optional block, 2 characters are reserved for optional block ID and 2 characters reserved for optional block length. More than one optional blocks can be included as long as the combined length does not increase 112 characters.

Type: String to string map

Key Length Constraints: Fixed length of 2.

Key Pattern: `[0-9A-Z]{2}+`

Value Length Constraints: Minimum length of 1. Maximum length of 108.

Value Pattern: `[0-9A-Z]+`

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](#)



# KeyModesOfUse

The list of cryptographic operations that you can perform using the key. The modes of use are defined in section A.5.3 of the TR-31 spec.

## Contents

### Decrypt

Specifies whether an AWS Payment Cryptography key can be used to decrypt data.

Type: Boolean

Required: No

### DeriveKey

Specifies whether an AWS Payment Cryptography key can be used to derive new keys.

Type: Boolean

Required: No

### Encrypt

Specifies whether an AWS Payment Cryptography key can be used to encrypt data.

Type: Boolean

Required: No

### Generate

Specifies whether an AWS Payment Cryptography key can be used to generate and verify other card and PIN verification keys.

Type: Boolean

Required: No

### NoRestrictions

Specifies whether an AWS Payment Cryptography key has no special restrictions other than the restrictions implied by KeyUsage.

Type: Boolean

Required: No

### Sign

Specifies whether an AWS Payment Cryptography key can be used for signing.

Type: Boolean

Required: No

### Unwrap

Specifies whether an AWS Payment Cryptography key can be used to unwrap other keys.

Type: Boolean

Required: No

### Verify

Specifies whether an AWS Payment Cryptography key can be used to verify signatures.

Type: Boolean

Required: No

### Wrap

Specifies whether an AWS Payment Cryptography key can be used to wrap other keys.

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



# KeySummary

Metadata about an AWS Payment Cryptography key.

## Contents

### Enabled

Specifies whether the key is enabled.

Type: Boolean

Required: Yes

### Exportable

Specifies whether the key is exportable. This data is immutable after the key is created.

Type: Boolean

Required: Yes

### KeyArn

The Amazon Resource Name (ARN) of the key.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: Yes

### KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after the key is created.

Type: [KeyAttributes](#) object

Required: Yes

## KeyCheckValue

The key check value (KCV) is used to check if all parties holding a given key have the same key or to detect that a key has changed.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 16.

Pattern: `[0-9a-fA-F]+`

Required: Yes

## KeyState

The state of an AWS Payment Cryptography that is being created or deleted.

Type: String

Valid Values: `CREATE_IN_PROGRESS` | `CREATE_COMPLETE` | `DELETE_PENDING` | `DELETE_COMPLETE`

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

# RootCertificatePublicKey

Parameter information for root public key certificate import.

## Contents

### KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after the root public key is imported.

Type: [KeyAttributes](#) object

Required: Yes

### PublicKeyCertificate

Parameter information for root public key certificate import.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: `[^\[\;\<>]+`

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

# Tag

A structure that contains information about a tag.

## Contents

### Key

The key of the tag.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: Yes

### Value

The value of the tag.

Type: String

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

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](#)

# TrustedCertificatePublicKey

Parameter information for trusted public key certificate import.

## Contents

### CertificateAuthorityPublicKeyIdentifier

The KeyARN of the root public key certificate or certificate chain that signs the trusted public key certificate import.

Type: String

Length Constraints: Minimum length of 7. Maximum length of 322.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:(key/[0-9a-zA-Z]{16,64}|alias/[a-zA-Z0-9/_-]+)$|^alias/[a-zA-Z0-9/_-]+`

Required: Yes

### KeyAttributes

The role of the key, the algorithm it supports, and the cryptographic operations allowed with the key. This data is immutable after a trusted public key is imported.

Type: [KeyAttributes](#) object

Required: Yes

### PublicKeyCertificate

Parameter information for trusted public key certificate import.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 32768.

Pattern: `[^\[\;\<>]+`

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

# WrappedKey

Parameter information for generating a WrappedKeyBlock for key exchange.

## Contents

### KeyMaterial

Parameter information for generating a wrapped key using TR-31 or TR-34 skey exchange method.

Type: String

Length Constraints: Minimum length of 48. Maximum length of 16384.

Required: Yes

### WrappedKeyMaterialFormat

The key block format of a wrapped key.

Type: String

Valid Values: KEY\_CRYPTOGRAM | TR31\_KEY\_BLOCK | TR34\_KEY\_BLOCK

Required: Yes

### WrappingKeyArn

The KeyARN of the wrapped key.

Type: String

Length Constraints: Minimum length of 70. Maximum length of 150.

Pattern: `arn:aws:payment-cryptography:[a-z]{2}-[a-z]{1,16}-[0-9]+:[0-9]{12}:key/[0-9a-zA-Z]{16,64}`

Required: Yes

### KeyCheckValue

The key check value (KCV) is used to check if all parties holding a given key have the same key or to detect that a key has changed.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 16.

Pattern: `[0-9a-fA-F]+`

Required: No

### **KeyCheckValueAlgorithm**

The algorithm that AWS Payment Cryptography uses to calculate the key check value (KCV). It is used to validate the key integrity.

For TDES keys, the KCV is computed by encrypting 8 bytes, each with value of zero, with the key to be checked and retaining the 3 highest order bytes of the encrypted result. For AES keys, the KCV is computed using a CMAC algorithm where the input data is 16 bytes of zero and retaining the 3 highest order bytes of the encrypted result.

Type: String

Valid Values: CMAC | ANSI\_X9\_24

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](#)