API Reference

Lake Formation

API Version 2017-03-31

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Lake Formation: API Reference

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Welcome

Defines the public endpoint for the AWS Lake Formation service.

This document was last published on October 14, 2026.

Actions

The following actions are supported:

- AddLFTagsToResource
- AssumeDecoratedRoleWithSAML
- BatchGrantPermissions
- BatchRevokePermissions
- CancelTransaction
- CommitTransaction
- CreateDataCellsFilter
- CreateLakeFormationIdentityCenterConfiguration
- CreateLakeFormationOptIn
- CreateLFTag
- CreateLFTagExpression
- DeleteDataCellsFilter
- DeleteLakeFormationIdentityCenterConfiguration
- DeleteLakeFormationOptIn
- DeleteLFTag
- DeleteLFTagExpression
- DeleteObjectsOnCancel
- DeregisterResource
- DescribeLakeFormationIdentityCenterConfiguration
- DescribeResource
- DescribeTransaction
- ExtendTransaction
- GetDataCellsFilter
- GetDataLakePrincipal
- GetDataLakeSettings
- GetEffectivePermissionsForPath
- GetLFTag

- GetLFTagExpression
- GetQueryState
- GetQueryStatistics
- GetResourceLFTags
- GetTableObjects
- GetTemporaryDataLocationCredentials
- GetTemporaryGluePartitionCredentials
- GetTemporaryGlueTableCredentials
- GetWorkUnitResults
- GetWorkUnits
- GrantPermissions
- ListDataCellsFilter
- ListLakeFormationOptIns
- ListLFTagExpressions
- ListLFTags
- ListPermissions
- ListResources
- ListTableStorageOptimizers
- ListTransactions
- PutDataLakeSettings
- RegisterResource
- RemoveLFTagsFromResource
- RevokePermissions
- SearchDatabasesByLFTags
- SearchTablesByLFTags
- StartQueryPlanning
- StartTransaction
- UpdateDataCellsFilter
- UpdateLakeFormationIdentityCenterConfiguration
- UpdateLFTag

- UpdateLFTagExpression
- UpdateResource
- UpdateTableObjects
- UpdateTableStorageOptimizer

AddLFTagsToResource

Attaches one or more LF-tags to an existing resource.

Request Syntax

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

{
   "CatalogId": "string",
   "LFTags": [
      {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      },
      "LFTagExpression": {
         "CatalogId": "string",
```

```
            "Name": "string"
        },
        "LFTagPolicy": {
            "CatalogId": "string",
            "Expression": [
                {
                    "TagKey": "string",
                    "TagValues": [ "string" ]
                }
            ],
            "ExpressionName": "string",
            "ResourceType": "string"
        },
        "Table": {
            "CatalogId": "string",
            "DatabaseName": "string",
            "Name": "string",
            "TableWildcard": {
            }
        },
        "TableWithColumns": {
            "CatalogId": "string",
            "ColumnNames": [ "string" ],
            "ColumnWildcard": {
                "ExcludedColumnNames": [ "string" ]
            },
            "DatabaseName": "string",
            "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

LFTags

The LF-tags to attach to the resource.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: Yes

Resource

The database, table, or column resource to which to attach an LF-tag.

Type: Resource object

Required: Yes

Response Syntax

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

{
   "Failures": [
      {
         "Error": {
            "ErrorCode": "string",
            "ErrorMessage": "string"
         },
```

```
            "LFTag": {
               "CatalogId": "string",
               "TagKey": "string",
               "TagValues": [ "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.

Failures

A list of failures to tag the resource.

Type: Array of LFTagError objects

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

AssumeDecoratedRoleWithSAML

Allows a caller to assume an IAM role decorated as the SAML user specified in the SAML assertion included in the request. This decoration allows Lake Formation to enforce access policies against the SAML users and groups. This API operation requires SAML federation setup in the caller's account as it can only be called with valid SAML assertions. Lake Formation does not scope down the permission of the assumed role. All permissions attached to the role via the SAML federation setup will be included in the role session.

This decorated role is expected to access data in Amazon S3 by getting temporary access from Lake Formation which is authorized via the virtual API `GetDataAccess`. Therefore, all SAML roles that can be assumed via `AssumeDecoratedRoleWithSAML` must at a minimum include `lakeformation:GetDataAccess` in their role policies. A typical IAM policy attached to such a role would include the following actions:

- glue:*Database*
- glue:*Table*
- glue:*Partition*
- glue:*UserDefinedFunction*
- lakeformation:GetDataAccess

Request Syntax

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

{
   "DurationSeconds": number,
   "PrincipalArn": "string",
   "RoleArn": "string",
   "SAMLAssertion": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

DurationSeconds

The time period, between 900 and 43,200 seconds, for the timeout of the temporary credentials.

Type: Integer

Valid Range: Minimum value of 900. Maximum value of 43200.

Required: No

PrincipalArn

The Amazon Resource Name (ARN) of the SAML provider in IAM that describes the IdP.

Type: String

Pattern: `arn:aws:iam::[0-9]*:saml-provider/.*`

Required: Yes

RoleArn

The role that represents an IAM principal whose scope down policy allows it to call credential vending APIs such as `GetTemporaryTableCredentials`. The caller must also have iam:PassRole permission on this role.

Type: String

Pattern: `arn:aws:iam::[0-9]*:role/.*`

Required: Yes

SAMLAssertion

A SAML assertion consisting of an assertion statement for the user who needs temporary credentials. This must match the SAML assertion that was issued to IAM. This must be Base64 encoded.

Type: String

Length Constraints: Minimum length of 4. Maximum length of 100000.

Required: Yes

Response Syntax

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

{
   "AccessKeyId": "string",
   "Expiration": number,
   "SecretAccessKey": "string",
   "SessionToken": "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.

AccessKeyId

The access key ID for the temporary credentials. (The access key consists of an access key ID and a secret key).

Type: String

Expiration

The date and time when the temporary credentials expire.

Type: Timestamp

SecretAccessKey

The secret key for the temporary credentials. (The access key consists of an access key ID and a secret key).

Type: String

SessionToken

The session token for the temporary credentials.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

BatchGrantPermissions

Batch operation to grant permissions to the principal.

Request Syntax

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

{
   "CatalogId": "string",
   "Entries": [
      {
         "Condition": {
            "Expression": "string"
         },
         "Id": "string",
         "Permissions": [ "string" ],
         "PermissionsWithGrantOption": [ "string" ],
         "Principal": {
            "DataLakePrincipalIdentifier": "string"
         },
         "Resource": {
            "Catalog": {
               "Id": "string"
            },
            "Database": {
               "CatalogId": "string",
               "Name": "string"
            },
            "DataCellsFilter": {
               "DatabaseName": "string",
               "Name": "string",
               "TableCatalogId": "string",
               "TableName": "string"
            },
            "DataLocation": {
               "CatalogId": "string",
               "ResourceArn": "string"
            },
            "LFTag": {
               "CatalogId": "string",
               "TagKey": "string",
```

```
                "TagValues": [ "string" ]
            },
            "LFTagExpression": {
                "CatalogId": "string",
                "Name": "string"
            },
            "LFTagPolicy": {
                "CatalogId": "string",
                "Expression": [
                    {
                        "TagKey": "string",
                        "TagValues": [ "string" ]
                    }
                ],
                "ExpressionName": "string",
                "ResourceType": "string"
            },
            "Table": {
                "CatalogId": "string",
                "DatabaseName": "string",
                "Name": "string",
                "TableWildcard": {
                }
            },
            "TableWithColumns": {
                "CatalogId": "string",
                "ColumnNames": [ "string" ],
                "ColumnWildcard": {
                    "ExcludedColumnNames": [ "string" ]
                },
                "DatabaseName": "string",
                "Name": "string"
            }
        }
    }
  ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Entries

A list of up to 20 entries for resource permissions to be granted by batch operation to the principal.

Type: Array of BatchPermissionsRequestEntry objects

Required: Yes

Response Syntax

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

{
   "Failures": [
      {
         "Error": {
            "ErrorCode": "string",
            "ErrorMessage": "string"
         },
         "RequestEntry": {
            "Condition": {
               "Expression": "string"
            },
```

```
            "Id": "string",
            "Permissions": [ "string" ],
            "PermissionsWithGrantOption": [ "string" ],
            "Principal": {
               "DataLakePrincipalIdentifier": "string"
            },
            "Resource": {
               "Catalog": {
                  "Id": "string"
               },
               "Database": {
                  "CatalogId": "string",
                  "Name": "string"
               },
               "DataCellsFilter": {
                  "DatabaseName": "string",
                  "Name": "string",
                  "TableCatalogId": "string",
                  "TableName": "string"
               },
               "DataLocation": {
                  "CatalogId": "string",
                  "ResourceArn": "string"
               },
               "LFTag": {
                  "CatalogId": "string",
                  "TagKey": "string",
                  "TagValues": [ "string" ]
               },
               "LFTagExpression": {
                  "CatalogId": "string",
                  "Name": "string"
               },
               "LFTagPolicy": {
                  "CatalogId": "string",
                  "Expression": [
                     {
                        "TagKey": "string",
                        "TagValues": [ "string" ]
                     }
                  ],
                  "ExpressionName": "string",
                  "ResourceType": "string"
               },
```

```
                "Table": {
                   "CatalogId": "string",
                   "DatabaseName": "string",
                   "Name": "string",
                   "TableWildcard": {
                   }
                },
                "TableWithColumns": {
                   "CatalogId": "string",
                   "ColumnNames": [ "string" ],
                   "ColumnWildcard": {
                      "ExcludedColumnNames": [ "string" ]
                   },
                   "DatabaseName": "string",
                   "Name": "string"
                }
             }
          }
       }
    ]
}
```

Response Elements

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

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

Failures

A list of failures to grant permissions to the resources.

Type: Array of BatchPermissionsFailureEntry objects

Errors

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

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

BatchRevokePermissions

Batch operation to revoke permissions from the principal.

Request Syntax

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

{
   "CatalogId": "string",
   "Entries": [
      {
         "Condition": {
            "Expression": "string"
         },
         "Id": "string",
         "Permissions": [ "string" ],
         "PermissionsWithGrantOption": [ "string" ],
         "Principal": {
            "DataLakePrincipalIdentifier": "string"
         },
         "Resource": {
            "Catalog": {
               "Id": "string"
            },
            "Database": {
               "CatalogId": "string",
               "Name": "string"
            },
            "DataCellsFilter": {
               "DatabaseName": "string",
               "Name": "string",
               "TableCatalogId": "string",
               "TableName": "string"
            },
            "DataLocation": {
               "CatalogId": "string",
               "ResourceArn": "string"
            },
            "LFTag": {
               "CatalogId": "string",
               "TagKey": "string",
```

```
                "TagValues": [ "string" ]
            },
            "LFTagExpression": {
                "CatalogId": "string",
                "Name": "string"
            },
            "LFTagPolicy": {
                "CatalogId": "string",
                "Expression": [
                    {
                        "TagKey": "string",
                        "TagValues": [ "string" ]
                    }
                ],
                "ExpressionName": "string",
                "ResourceType": "string"
            },
            "Table": {
                "CatalogId": "string",
                "DatabaseName": "string",
                "Name": "string",
                "TableWildcard": {
                }
            },
            "TableWithColumns": {
                "CatalogId": "string",
                "ColumnNames": [ "string" ],
                "ColumnWildcard": {
                    "ExcludedColumnNames": [ "string" ]
                },
                "DatabaseName": "string",
                "Name": "string"
            }
        }
    }
  ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Entries

A list of up to 20 entries for resource permissions to be revoked by batch operation to the principal.

Type: Array of BatchPermissionsRequestEntry objects

Required: Yes

Response Syntax

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

{
   "Failures": [
      {
         "Error": {
            "ErrorCode": "string",
            "ErrorMessage": "string"
         },
         "RequestEntry": {
            "Condition": {
               "Expression": "string"
            },
```

```
            "Id": "string",
            "Permissions": [ "string" ],
            "PermissionsWithGrantOption": [ "string" ],
            "Principal": {
               "DataLakePrincipalIdentifier": "string"
            },
            "Resource": {
               "Catalog": {
                  "Id": "string"
               },
               "Database": {
                  "CatalogId": "string",
                  "Name": "string"
               },
               "DataCellsFilter": {
                  "DatabaseName": "string",
                  "Name": "string",
                  "TableCatalogId": "string",
                  "TableName": "string"
               },
               "DataLocation": {
                  "CatalogId": "string",
                  "ResourceArn": "string"
               },
               "LFTag": {
                  "CatalogId": "string",
                  "TagKey": "string",
                  "TagValues": [ "string" ]
               },
               "LFTagExpression": {
                  "CatalogId": "string",
                  "Name": "string"
               },
               "LFTagPolicy": {
                  "CatalogId": "string",
                  "Expression": [
                     {
                        "TagKey": "string",
                        "TagValues": [ "string" ]
                     }
                  ],
                  "ExpressionName": "string",
                  "ResourceType": "string"
               },
```

```
                "Table": {
                   "CatalogId": "string",
                   "DatabaseName": "string",
                   "Name": "string",
                   "TableWildcard": {
                   }
                },
                "TableWithColumns": {
                   "CatalogId": "string",
                   "ColumnNames": [ "string" ],
                   "ColumnWildcard": {
                      "ExcludedColumnNames": [ "string" ]
                   },
                   "DatabaseName": "string",
                   "Name": "string"
                }
             }
          }
       }
    ]
}
```

Response Elements

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

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

Failures

A list of failures to revoke permissions to the resources.

Type: Array of BatchPermissionsFailureEntry objects

Errors

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

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CancelTransaction

Attempts to cancel the specified transaction. Returns an exception if the transaction was previously committed.

Request Syntax

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

{
   "TransactionId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TransactionId

The transaction to cancel.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

TransactionCommitInProgressException

Contains details about an error related to a transaction commit that was in progress.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommittedException

Contains details about an error where the specified transaction has already been committed and cannot be used for `UpdateTableObjects`.

Message

A message describing the 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)

- AWS SDK for Ruby V3

CommitTransaction

Attempts to commit the specified transaction. Returns an exception if the transaction was previously aborted. This API action is idempotent if called multiple times for the same transaction.

Request Syntax

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

{
   "TransactionId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TransactionId

The transaction to commit.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: Yes

Response Syntax

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

{
```

```
    "TransactionStatus": "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.

TransactionStatus

The status of the transaction.

Type: String

Valid Values: `ACTIVE | COMMITTED | ABORTED | COMMIT_IN_PROGRESS`

Errors

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

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

TransactionCanceledException

Contains details about an error related to a transaction that was cancelled.

Message

A message describing the 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateDataCellsFilter

Creates a data cell filter to allow one to grant access to certain columns on certain rows.

Request Syntax

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

{
   "TableData": {
      "ColumnNames": [ "string" ],
      "ColumnWildcard": {
         "ExcludedColumnNames": [ "string" ]
      },
      "DatabaseName": "string",
      "Name": "string",
      "RowFilter": {
         "AllRowsWildcard": {
         },
         "FilterExpression": "string"
      },
      "TableCatalogId": "string",
      "TableName": "string",
      "VersionId": "string"
   }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TableData

A `DataCellsFilter` structure containing information about the data cells filter.

Type: DataCellsFilter object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

AlreadyExistsException

A resource to be created or added already exists.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNumberLimitExceededException

A resource numerical limit was exceeded.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateLakeFormationIdentityCenterConfiguration

Creates an IAM Identity Center connection with Lake Formation to allow IAM Identity Center users and groups to access Data Catalog resources.

Request Syntax

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

{
   "CatalogId": "string",
   "ExternalFiltering": {
      "AuthorizedTargets": [ "string" ],
      "Status": "string"
   },
   "InstanceArn": "string",
   "ServiceIntegrations": [
      { ... }
   ],
   "ShareRecipients": [
      {
         "DataLakePrincipalIdentifier": "string"
      }
   ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, view definitions, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

ExternalFiltering

A list of the account IDs of AWS accounts of third-party applications that are allowed to access data managed by Lake Formation.

Type: ExternalFilteringConfiguration object

Required: No

InstanceArn

The ARN of the IAM Identity Center instance for which the operation will be executed. For more information about ARNs, see Amazon Resource Names (ARNs) and AWS Service Namespaces in the AWS General Reference.

Type: String

Required: No

ServiceIntegrations

A list of service integrations for enabling trusted identity propagation with external services such as Redshift.

Type: Array of ServiceIntegrationUnion objects

Required: No

ShareRecipients

A list of AWS account IDs and/or AWS organization/organizational unit ARNs that are allowed to access data managed by Lake Formation.

If the `ShareRecipients` list includes valid values, a resource share is created with the principals you want to have access to the resources.

If the `ShareRecipients` value is null or the list is empty, no resource share is created.

Type: Array of DataLakePrincipal objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

Response Syntax

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

{
   "ApplicationArn": "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.

ApplicationArn

The Amazon Resource Name (ARN) of the Lake Formation application integrated with IAM Identity Center.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

AlreadyExistsException

A resource to be created or added already exists.

Message

A message describing the problem.

HTTP Status Code: 400

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Request example

This example illustrates one usage of CreateLakeFormationIdentityCenterConfiguration.

```
{
   "CatalogId": "123456789012",
   "ExternalFiltering": {
      "AuthorizedTargets": [ "<app arn1>" ],
      "Status": "ENABLED"
   },
   "InstanceArn": "arn:aws:sso:::instance/ssoins-1223f2dba9f23211",
    "ShareRecipients": [
      {
         "DataLakePrincipalIdentifier": "555555555555"
      }
   ],
   "ServiceIntegrations": [
      {
         "Redshift": [
            {
               "RedshiftConnect": {
                  "Authorization": "ENABLED"
               }
            }
         ]
      }
   ]
}
```

Response example

This example illustrates one usage of CreateLakeFormationIdentityCenterConfiguration.

```
{
   "ApplicationArn": "arn:aws:sso::123456789012:application/ssoins-1223f2dba9f23211/
apl-8effb002e2841417"
   "ResourceShare": "arn:aws:ram:us-east-1:123456789012:resource-
share/2b5032f6-19e4-461e-8b02-cd711d119df7"
```

```
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateLakeFormationOptIn

Enforce Lake Formation permissions for the given databases, tables, and principals.

Request Syntax

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

{
   "Condition": {
      "Expression": "string"
   },
   "Principal": {
      "DataLakePrincipalIdentifier": "string"
   },
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      },
      "LFTagExpression": {
         "CatalogId": "string",
         "Name": "string"
      },
```

```
        "LFTagPolicy": {
           "CatalogId": "string",
           "Expression": [
              {
                 "TagKey": "string",
                 "TagValues": [ "string" ]
              }
           ],
           "ExpressionName": "string",
           "ResourceType": "string"
        },
        "Table": {
           "CatalogId": "string",
           "DatabaseName": "string",
           "Name": "string",
           "TableWildcard": {
           }
        },
        "TableWithColumns": {
           "CatalogId": "string",
           "ColumnNames": [ "string" ],
           "ColumnWildcard": {
              "ExcludedColumnNames": [ "string" ]
           },
           "DatabaseName": "string",
           "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

Principal

The AWS Lake Formation principal. Supported principals are IAM users or IAM roles.

Type: DataLakePrincipal object

Required: Yes

Resource

A structure for the resource.

Type: Resource object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNumberLimitExceededException

A resource numerical limit was exceeded.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateLFTag

Creates an LF-tag with the specified name and values.

Request Syntax

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

{
   "CatalogId": "string",
   "TagKey": "string",
   "TagValues": [ "string" ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TagKey

The key-name for the LF-tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

Required: Yes

TagValues

A list of possible values an attribute can take.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNumberLimitExceededException

A resource numerical limit was exceeded.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

CreateLFTagExpression

Creates a new LF-Tag expression with the provided name, description, catalog ID, and expression body. This call fails if a LF-Tag expression with the same name already exists in the caller's account or if the underlying LF-Tags don't exist. To call this API operation, caller needs the following Lake Formation permissions:

`CREATE_LF_TAG_EXPRESSION` on the root catalog resource.

`GRANT_WITH_LF_TAG_EXPRESSION` on all underlying LF-Tag key:value pairs included in the expression.

Request Syntax

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

{
   "CatalogId": "string",
   "Description": "string",
   "Expression": [
      {
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "Name": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Description

A description with information about the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

Expression

A list of LF-Tag conditions (key-value pairs).

Type: Array of LFTag objects

Required: Yes

Name

A name for the expression.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNumberLimitExceededException

A resource numerical limit was exceeded.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateLFTagExpression.

```
{
  "CatalogId": "123456789012",
  "Name": "city_department",
  "Description": "A tag expression for city: NYC or Paris and department: Sales",
  "Expression": [
    {
      "TagKey": "City",
      "TagValues": [
        "NYC",
        "Paris"
      ]
    },
    {
```

```
      "TagKey": "Department",
      "TagValues": [
        "Sales"
      ]
    }
  ]
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteDataCellsFilter

Deletes a data cell filter.

Request Syntax

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

{
   "DatabaseName": "string",
   "Name": "string",
   "TableCatalogId": "string",
   "TableName": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

DatabaseName

A database in the AWS Glue Data Catalog.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Name

The name given by the user to the data filter cell.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TableCatalogId

The ID of the catalog to which the table belongs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TableName

A table in the database.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteLakeFormationIdentityCenterConfiguration

Deletes an IAM Identity Center connection with Lake Formation.

Request Syntax

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

{
   "CatalogId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, view definition, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteLakeFormationOptIn

Remove the Lake Formation permissions enforcement of the given databases, tables, and principals.

Request Syntax

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

{
   "Condition": {
      "Expression": "string"
   },
   "Principal": {
      "DataLakePrincipalIdentifier": "string"
   },
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      },
      "LFTagExpression": {
         "CatalogId": "string",
         "Name": "string"
```

```
        },
        "LFTagPolicy": {
           "CatalogId": "string",
           "Expression": [
              {
                 "TagKey": "string",
                 "TagValues": [ "string" ]
              }
           ],
           "ExpressionName": "string",
           "ResourceType": "string"
        },
        "Table": {
           "CatalogId": "string",
           "DatabaseName": "string",
           "Name": "string",
           "TableWildcard": {
           }
        },
        "TableWithColumns": {
           "CatalogId": "string",
           "ColumnNames": [ "string" ],
           "ColumnWildcard": {
              "ExcludedColumnNames": [ "string" ]
           },
           "DatabaseName": "string",
           "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

Principal

The AWS Lake Formation principal. Supported principals are IAM users or IAM roles.

Type: DataLakePrincipal object

Required: Yes

Resource

A structure for the resource.

Type: Resource object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteLFTag

Deletes an LF-tag by its key name. The operation fails if the specified tag key doesn't exist. When you delete an LF-Tag:

- The associated LF-Tag policy becomes invalid.
- Resources that had this tag assigned will no longer have the tag policy applied to them.

Request Syntax

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

{
   "CatalogId": "string",
   "TagKey": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TagKey

The key-name for the LF-tag to delete.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteLFTagExpression

Deletes the LF-Tag expression. The caller must be a data lake admin or have `DROP` permissions on the LF-Tag expression. Deleting a LF-Tag expression will also delete all `LFTagPolicy` permissions referencing the LF-Tag expression.

Request Syntax

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

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

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID in which the LF-Tag expression is saved.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Name

The name for the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Request example

This example illustrates one usage of DeleteLFTagExpression.

```
{
  "CatalogId": "123456789012",
  "Name": "city_department"
}
```

Response example

This example illustrates one usage of DeleteLFTagExpression.

```
{}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeleteObjectsOnCancel

For a specific governed table, provides a list of Amazon S3 objects that will be written during the current transaction and that can be automatically deleted if the transaction is canceled. Without this call, no Amazon S3 objects are automatically deleted when a transaction cancels.

The AWS Glue ETL library function `write_dynamic_frame.from_catalog()` includes an option to automatically call `DeleteObjectsOnCancel` before writes. For more information, see Rolling Back Amazon S3 Writes.

Request Syntax

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

{
   "CatalogId": "string",
   "DatabaseName": "string",
   "Objects": [
      {
         "ETag": "string",
         "Uri": "string"
      }
   ],
   "TableName": "string",
   "TransactionId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The AWS Glue data catalog that contains the governed table. Defaults to the current account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

DatabaseName

The database that contains the governed table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Objects

A list of VirtualObject structures, which indicates the Amazon S3 objects to be deleted if the transaction cancels.

Type: Array of VirtualObject objects

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Required: Yes

TableName

The name of the governed table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TransactionId

ID of the transaction that the writes occur in.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNotReadyException

Contains details about an error related to a resource which is not ready for a transaction.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCanceledException

Contains details about an error related to a transaction that was cancelled.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommittedException

Contains details about an error where the specified transaction has already been committed and cannot be used for `UpdateTableObjects`.

Message

A message describing the 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DeregisterResource

Deregisters the resource as managed by the Data Catalog.

When you deregister a path, Lake Formation removes the path from the inline policy attached to your service-linked role.

Request Syntax

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

{
   "ResourceArn": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ResourceArn

The Amazon Resource Name (ARN) of the resource that you want to deregister.

Type: String

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeLakeFormationIdentityCenterConfiguration

Retrieves the instance ARN and application ARN for the connection.

Request Syntax

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

{
   "CatalogId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Response Syntax

```
HTTP/1.1 200
```

```
Content-type: application/json

{
   "ApplicationArn": "string",
   "CatalogId": "string",
   "ExternalFiltering": {
      "AuthorizedTargets": [ "string" ],
      "Status": "string"
   },
   "InstanceArn": "string",
   "ResourceShare": "string",
   "ServiceIntegrations": [
      { ... }
   ],
   "ShareRecipients": [
      {
         "DataLakePrincipalIdentifier": "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.

ApplicationArn

The Amazon Resource Name (ARN) of the Lake Formation application integrated with IAM Identity Center.

Type: String

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

ExternalFiltering

Indicates if external filtering is enabled.

Type: ExternalFilteringConfiguration object

InstanceArn

The Amazon Resource Name (ARN) of the connection.

Type: String

ResourceShare

The Amazon Resource Name (ARN) of the RAM share.

Type: String

ServiceIntegrations

A list of service integrations for enabling trusted identity propagation with external services such as Redshift.

Type: Array of ServiceIntegrationUnion objects

ShareRecipients

A list of AWS account IDs or AWS organization/organizational unit ARNs that are allowed to access data managed by Lake Formation.

If the `ShareRecipients` list includes valid values, a resource share is created with the principals you want to have access to the resources as the `ShareRecipients`.

If the `ShareRecipients` value is null or the list is empty, no resource share is created.

Type: Array of DataLakePrincipal objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Response example

This example illustrates one usage of DescribeLakeFormationIdentityCenterConfiguration.

```
{
    "CatalogId": "123456789012",
    "InstanceArn": "arn:aws:sso:::instance/ssoins-1223f2dba9f23211",
    "ApplicationArn": "arn:aws:sso::123456789012:application/ssoins-1223f2dba9f23211/
apl-8effb002e2841417",
    "ShareRecipients": [
        {
            "DataLakePrincipalIdentifier": "555555555555"
        },
        {
            "DataLakePrincipalIdentifier": "444455556666"
        }
    ],
    "ServiceIntegrations": [
        {
            "Redshift": [
                {
                    "RedshiftConnect": {
                        "Authorization": "ENABLED"
                    }
                }
            ]
        }
    ],
    "ResourceShare": "arn:aws:ram:us-east-1:123456789012:resource-
share/2b5032f6-19e4-461e-8b02-cd711d119df7"
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeResource

Retrieves the current data access role for the given resource registered in AWS Lake Formation.

Request Syntax

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

{
   "ResourceArn": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ResourceArn

The resource ARN.

Type: String

Required: Yes

Response Syntax

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

{
   "ResourceInfo": {
      "ExpectedResourceOwnerAccount": "string",
      "HybridAccessEnabled": boolean,
      "LastModified": number,
      "ResourceArn": "string",
      "RoleArn": "string",
```

```
        "VerificationStatus": "string",
        "WithFederation": boolean,
        "WithPrivilegedAccess": boolean
    }
}
```

Response Elements

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

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

ResourceInfo

A structure containing information about an Lake Formation resource.

Type: ResourceInfo object

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

DescribeTransaction

Returns the details of a single transaction.

Request Syntax

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

{
   "TransactionId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TransactionId

The transaction for which to return status.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: Yes

Response Syntax

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

{
   "TransactionDescription": {
      "TransactionEndTime": number,
```

```
        "TransactionId": "string",
        "TransactionStartTime": number,
        "TransactionStatus": "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.

TransactionDescription

Returns a `TransactionDescription` object containing information about the transaction.

Type: TransactionDescription object

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ExtendTransaction

Indicates to the service that the specified transaction is still active and should not be treated as idle and aborted.

Write transactions that remain idle for a long period are automatically aborted unless explicitly extended.

Request Syntax

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

{
   "TransactionId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TransactionId

The transaction to extend.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

TransactionCanceledException

Contains details about an error related to a transaction that was cancelled.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommitInProgressException

Contains details about an error related to a transaction commit that was in progress.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommittedException

Contains details about an error where the specified transaction has already been committed and cannot be used for `UpdateTableObjects`.

Message

A message describing the 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetDataCellsFilter

Returns a data cells filter.

Request Syntax

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

{
   "DatabaseName": "string",
   "Name": "string",
   "TableCatalogId": "string",
   "TableName": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

DatabaseName

A database in the AWS Glue Data Catalog.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Name

The name given by the user to the data filter cell.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TableCatalogId

The ID of the catalog to which the table belongs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TableName

A table in the database.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

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

{
   "DataCellsFilter": {
      "ColumnNames": [ "string" ],
      "ColumnWildcard": {
         "ExcludedColumnNames": [ "string" ]
      },
      "DatabaseName": "string",
      "Name": "string",
      "RowFilter": {
         "AllRowsWildcard": {
```

```
            },
            "FilterExpression": "string"
        },
        "TableCatalogId": "string",
        "TableName": "string",
        "VersionId": "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.

DataCellsFilter

A structure that describes certain columns on certain rows.

Type: DataCellsFilter object

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetDataLakePrincipal

Returns the identity of the invoking principal.

Request Syntax

```
POST /GetDataLakePrincipal HTTP/1.1
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request does not have a request body.

Response Syntax

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

{
   "Identity": "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.

Identity

A unique identifier of the invoking principal.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Response example

This example illustrates one usage of GetDataLakePrincipal.

```
{
   "Identity": "arn:aws:iam::<111221110200>:role/user "

}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetDataLakeSettings

Retrieves the list of the data lake administrators of a AWS Lake Formation-managed data lake.

Request Syntax

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

{
   "CatalogId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Response Syntax

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

{
```

```
   "DataLakeSettings": {
      "AllowExternalDataFiltering": boolean,
      "AllowFullTableExternalDataAccess": boolean,
      "AuthorizedSessionTagValueList": [ "string" ],
      "CreateDatabaseDefaultPermissions": [
         {
            "Permissions": [ "string" ],
            "Principal": {
               "DataLakePrincipalIdentifier": "string"
            }
         }
      ],
      "CreateTableDefaultPermissions": [
         {
            "Permissions": [ "string" ],
            "Principal": {
               "DataLakePrincipalIdentifier": "string"
            }
         }
      ],
      "DataLakeAdmins": [
         {
            "DataLakePrincipalIdentifier": "string"
         }
      ],
      "ExternalDataFilteringAllowList": [
         {
            "DataLakePrincipalIdentifier": "string"
         }
      ],
      "Parameters": {
         "string" : "string"
      },
      "ReadOnlyAdmins": [
         {
            "DataLakePrincipalIdentifier": "string"
         }
      ],
      "TrustedResourceOwners": [ "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.

DataLakeSettings

A structure representing a list of Lake Formation principals designated as data lake administrators.

Type: DataLakeSettings object

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetEffectivePermissionsForPath

Returns the Lake Formation permissions for a specified table or database resource located at a path in Amazon S3. `GetEffectivePermissionsForPath` will not return databases and tables if the catalog is encrypted.

Request Syntax

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

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

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

MaxResults

The maximum number of results to return.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

ResourceArn

The Amazon Resource Name (ARN) of the resource for which you want to get permissions.

Type: String

Required: Yes

Response Syntax

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

{
   "NextToken": "string",
   "Permissions": [
      {
         "AdditionalDetails": {
            "ResourceShare": [ "string" ]
         },
         "Condition": {
            "Expression": "string"
         },
         "LastUpdated": number,
         "LastUpdatedBy": "string",
         "Permissions": [ "string" ],
         "PermissionsWithGrantOption": [ "string" ],
         "Principal": {
            "DataLakePrincipalIdentifier": "string"
         },
         "Resource": {
```

```
            "Catalog": {
               "Id": "string"
            },
            "Database": {
               "CatalogId": "string",
               "Name": "string"
            },
            "DataCellsFilter": {
               "DatabaseName": "string",
               "Name": "string",
               "TableCatalogId": "string",
               "TableName": "string"
            },
            "DataLocation": {
               "CatalogId": "string",
               "ResourceArn": "string"
            },
            "LFTag": {
               "CatalogId": "string",
               "TagKey": "string",
               "TagValues": [ "string" ]
            },
            "LFTagExpression": {
               "CatalogId": "string",
               "Name": "string"
            },
            "LFTagPolicy": {
               "CatalogId": "string",
               "Expression": [
                  {
                     "TagKey": "string",
                     "TagValues": [ "string" ]
                  }
               ],
               "ExpressionName": "string",
               "ResourceType": "string"
            },
            "Table": {
               "CatalogId": "string",
               "DatabaseName": "string",
               "Name": "string",
               "TableWildcard": {
               }
            },
```

```
            "TableWithColumns": {
               "CatalogId": "string",
               "ColumnNames": [ "string" ],
               "ColumnWildcard": {
                  "ExcludedColumnNames": [ "string" ]
               },
               "DatabaseName": "string",
               "Name": "string"
            }
         }
      }
   ]
}
```

Response Elements

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

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

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Permissions

A list of the permissions for the specified table or database resource located at the path in Amazon S3.

Type: Array of PrincipalResourcePermissions objects

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetLFTag

Returns an LF-tag definition.

Request Syntax

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

{
   "CatalogId": "string",
   "TagKey": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TagKey

The key-name for the LF-tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

Required: Yes

Response Syntax

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

{
   "CatalogId": "string",
   "TagKey": "string",
   "TagValues": [ "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.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

TagKey

The key-name for the LF-tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

TagValues

A list of possible values an attribute can take.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetLFTagExpression

Returns the details about the LF-Tag expression. The caller must be a data lake admin or must have DESCRIBE permission on the LF-Tag expression resource.

Request Syntax

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

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

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Name

The name for the LF-Tag expression

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

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

{
   "CatalogId": "string",
   "Description": "string",
   "Expression": [
      {
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "Name": "string"
}
```

Response Elements

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

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

CatalogId

The identifier for the Data Catalog. By default, the account ID in which the LF-Tag expression is saved.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Description

The description with information about the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Expression

The body of the LF-Tag expression. It is composed of one or more LF-Tag key-value pairs.

Type: Array of LFTag objects

Name

The name for the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Request example

This example illustrates one usage of GetLFTagExpression.

```
{
  "CatalogId": "123456789012",
  "Name": "city_department"
}
```

Response example

This example illustrates one usage of GetLFTagExpression.

```
{
  "Name": "city_department",
  "Description": "A tag expression for city: NYC or Paris and department: Sales",
```

```
  "CatalogId": "328665898768",
  "Expression": [
    {
      "TagKey": "city",
      "TagValues": [
        "paris",
        "nyc"
      ]
    },
    {
      "TagKey": "department",
      "TagValues": [
        "sales"
      ]
    }
  ]
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetQueryState

Returns the state of a query previously submitted. Clients are expected to poll `GetQueryState` to monitor the current state of the planning before retrieving the work units. A query state is only visible to the principal that made the initial call to `StartQueryPlanning`.

Request Syntax

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

{
   "QueryId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

QueryId

The ID of the plan query operation.

Type: String

Length Constraints: Fixed length of 36.

Required: Yes

Response Syntax

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

{
   "Error": "string",
```

```
    "State": "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.

Error

An error message when the operation fails.

Type: String

State

The state of a query previously submitted. The possible states are:

- PENDING: the query is pending.
- WORKUNITS_AVAILABLE: some work units are ready for retrieval and execution.
- FINISHED: the query planning finished successfully, and all work units are ready for retrieval and execution.
- ERROR: an error occurred with the query, such as an invalid query ID or a backend error.

Type: String

Valid Values: `PENDING | WORKUNITS_AVAILABLE | ERROR | FINISHED | EXPIRED`

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetQueryStatistics

Retrieves statistics on the planning and execution of a query.

Request Syntax

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

{
   "QueryId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

QueryId

The ID of the plan query operation.

Type: String

Length Constraints: Fixed length of 36.

Required: Yes

Response Syntax

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

{
   "ExecutionStatistics": {
      "AverageExecutionTimeMillis": number,
      "DataScannedBytes": number,
      "WorkUnitsExecutedCount": number
```

```
    },
    "PlanningStatistics": {
       "EstimatedDataToScanBytes": number,
       "PlanningTimeMillis": number,
       "QueueTimeMillis": number,
       "WorkUnitsGeneratedCount": number
    },
    "QuerySubmissionTime": "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.

ExecutionStatistics

An `ExecutionStatistics` structure containing execution statistics.

Type: ExecutionStatistics object

PlanningStatistics

A `PlanningStatistics` structure containing query planning statistics.

Type: PlanningStatistics object

QuerySubmissionTime

The time that the query was submitted.

Type: Timestamp

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ExpiredException

Contains details about an error where the query request expired.

Message

A message describing the error.

HTTP Status Code: 410

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

StatisticsNotReadyYetException

Contains details about an error related to statistics not being ready.

Message

A message describing the error.

HTTP Status Code: 420

ThrottledException

Contains details about an error where the query request was throttled.

Message

A message describing the error.

HTTP Status Code: 429

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetResourceLFTags

Returns the LF-tags applied to a resource.

Request Syntax

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

{
   "CatalogId": "string",
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      },
      "LFTagExpression": {
         "CatalogId": "string",
         "Name": "string"
      },
      "LFTagPolicy": {
         "CatalogId": "string",
         "Expression": [
            {
               "TagKey": "string",
```

```
                "TagValues": [ "string" ]
            }
        ],
        "ExpressionName": "string",
        "ResourceType": "string"
    },
    "Table": {
        "CatalogId": "string",
        "DatabaseName": "string",
        "Name": "string",
        "TableWildcard": {
        }
    },
    "TableWithColumns": {
        "CatalogId": "string",
        "ColumnNames": [ "string" ],
        "ColumnWildcard": {
            "ExcludedColumnNames": [ "string" ]
        },
        "DatabaseName": "string",
        "Name": "string"
    }
  },
  "ShowAssignedLFTags": boolean
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Resource

The database, table, or column resource for which you want to return LF-tags.

Type: Resource object

Required: Yes

ShowAssignedLFTags

Indicates whether to show the assigned LF-tags.

Type: Boolean

Required: No

Response Syntax

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

{
   "LFTagOnDatabase": [
      {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "LFTagsOnColumns": [
      {
         "LFTags": [
            {
               "CatalogId": "string",
               "TagKey": "string",
               "TagValues": [ "string" ]
            }
         ],
         "Name": "string"
```

```
        }
    ],
    "LFTagsOnTable": [
        {
            "CatalogId": "string",
            "TagKey": "string",
            "TagValues": [ "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.

LFTagOnDatabase

A list of LF-tags applied to a database resource.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

LFTagsOnColumns

A list of LF-tags applied to a column resource.

Type: Array of ColumnLFTag objects

LFTagsOnTable

A list of LF-tags applied to a table resource.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

GlueEncryptionException

An encryption operation failed.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetTableObjects

Returns the set of Amazon S3 objects that make up the specified governed table. A transaction ID or timestamp can be specified for time-travel queries.

Request Syntax

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

{
   "CatalogId": "string",
   "DatabaseName": "string",
   "MaxResults": number,
   "NextToken": "string",
   "PartitionPredicate": "string",
   "QueryAsOfTime": number,
   "TableName": "string",
   "TransactionId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The catalog containing the governed table. Defaults to the caller's account.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

DatabaseName

The database containing the governed table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

MaxResults

Specifies how many values to return in a page.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token if this is not the first call to retrieve these objects.

Type: String

Length Constraints: Maximum length of 4096.

Required: No

PartitionPredicate

A predicate to filter the objects returned based on the partition keys defined in the governed table.

- The comparison operators supported are: =, >, <, >=, <=
- The logical operators supported are: AND
- The data types supported are integer, long, date(yyyy-MM-dd), timestamp(yyyy-MM-dd HH:mm:ssXXX or yyyy-MM-dd HH:mm:ss"), string and decimal.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

QueryAsOfTime

The time as of when to read the governed table contents. If not set, the most recent transaction commit time is used. Cannot be specified along with `TransactionId`.

Type: Timestamp

Required: No

TableName

The governed table for which to retrieve objects.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TransactionId

The transaction ID at which to read the governed table contents. If this transaction has aborted, an error is returned. If not set, defaults to the most recent committed transaction. Cannot be specified along with `QueryAsOfTime`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: No

Response Syntax

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

```
{
   "NextToken": "string",
   "Objects": [
      {
         "Objects": [
            {
               "ETag": "string",
               "Size": number,
               "Uri": "string"
            }
         ],
         "PartitionValues": [ "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

A continuation token indicating whether additional data is available.

Type: String

Length Constraints: Maximum length of 4096.

Objects

A list of objects organized by partition keys.

Type: Array of PartitionObjects objects

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNotReadyException

Contains details about an error related to a resource which is not ready for a transaction.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCanceledException

Contains details about an error related to a transaction that was cancelled.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommittedException

Contains details about an error where the specified transaction has already been committed and cannot be used for `UpdateTableObjects`.

Message

A message describing the 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetTemporaryDataLocationCredentials

Allows a user or application in a secure environment to access data in a specific Amazon S3 location registered with AWS Lake Formation by providing temporary scoped credentials that are limited to the requested data location and the caller's authorized access level.

The API operation returns an error in the following scenarios:

- The data location is not registered with Lake Formation.
- No AWS Glue table is associated with the data location.
- The caller doesn't have required permissions on the associated table. The caller must have SELECT or SUPER permissions on the associated table, and credential vending for full table access must be enabled in the data lake settings.

  For more information, see Application integration for full table access.
- The data location is in a different AWS Region. Lake Formation doesn't support cross-Region access when vending credentials for a data location. Lake Formation only supports Amazon S3 paths registered within the same Region as the API call.

Request Syntax

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

{
   "AuditContext": {
      "AdditionalAuditContext": "string"
   },
   "CredentialsScope": "string",
   "DataLocations": [ "string" ],
   "DurationSeconds": number
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

AuditContext

A structure used to include auditing information on the privileged API.

Type: AuditContext object

Required: No

CredentialsScope

The credential scope is determined by the caller's Lake Formation permission on the associated table. Credential scope can be either:

- READ - Provides read-only access to the data location.
- READ_WRITE - Provides both read and write access to the data location.

Type: String

Valid Values: `READ | READWRITE`

Required: No

DataLocations

The Amazon S3 data location that you want to access.

Type: Array of strings

Required: No

DurationSeconds

The time period, between 900 and 43,200 seconds, for the timeout of the temporary credentials.

Type: Integer

Valid Range: Minimum value of 900. Maximum value of 43200.

Required: No

Response Syntax

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

{
   "AccessibleDataLocations": [ "string" ],
   "Credentials": {
      "AccessKeyId": "string",
      "Expiration": number,
      "SecretAccessKey": "string",
      "SessionToken": "string"
   },
   "CredentialsScope": "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.

AccessibleDataLocations

Refers to the Amazon S3 locations that can be accessed through the `GetTemporaryCredentialsForLocation` API operation.

Type: Array of strings

Credentials

A temporary set of credentials for an AWS Lake Formation user. These credentials are scoped down to only access the raw data sources that the user has access to.

The temporary security credentials consist of an access key and a session token. The access key consists of an access key ID and a secret key. When the credentials are created, they are associated with an IAM access control policy that limits what the user can do when using the credentials.

Type: TemporaryCredentials object

CredentialsScope

The credential scope is determined by the caller's Lake Formation permission on the associated table. Credential scope can be either:

- READ - Provides read-only access to the data location.
- READ_WRITE - Provides both read and write access to the data location.

Type: String

Valid Values: `READ | READWRITE`

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConflictException

Multiple resources exist with the same Amazon S3 location

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

GlueEncryptionException

An encryption operation failed.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetTemporaryGluePartitionCredentials

This API is identical to `GetTemporaryTableCredentials` except that this is used when the target Data Catalog resource is of type Partition. Lake Formation restricts the permission of the vended credentials with the same scope down policy which restricts access to a single Amazon S3 prefix.

Request Syntax

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

{
   "AuditContext": {
      "AdditionalAuditContext": "string"
   },
   "DurationSeconds": number,
   "Partition": {
      "Values": [ "string" ]
   },
   "Permissions": [ "string" ],
   "SupportedPermissionTypes": [ "string" ],
   "TableArn": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

AuditContext

A structure representing context to access a resource (column names, query ID, etc).

Type: AuditContext object

Required: No

DurationSeconds

The time period, between 900 and 21,600 seconds, for the timeout of the temporary credentials.

Type: Integer

Valid Range: Minimum value of 900. Maximum value of 43200.

Required: No

Partition

A list of partition values identifying a single partition.

Type: PartitionValueList object

Required: Yes

Permissions

Filters the request based on the user having been granted a list of specified permissions on the requested resource(s).

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

SupportedPermissionTypes

A list of supported permission types for the partition. Valid values are `COLUMN_PERMISSION` and `CELL_FILTER_PERMISSION`.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 255 items.

Valid Values: `COLUMN_PERMISSION | CELL_FILTER_PERMISSION | NESTED_PERMISSION | NESTED_CELL_PERMISSION`

Required: No

TableArn

The ARN of the partitions' table.

Type: String

Required: Yes

Response Syntax

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

{
   "AccessKeyId": "string",
   "Expiration": number,
   "SecretAccessKey": "string",
   "SessionToken": "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.

AccessKeyId

The access key ID for the temporary credentials.

Type: String

Expiration

The date and time when the temporary credentials expire.

Type: Timestamp

SecretAccessKey

The secret key for the temporary credentials.

Type: String

SessionToken

The session token for the temporary credentials.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

PermissionTypeMismatchException

The engine does not support filtering data based on the enforced permissions. For example, if you call the `GetTemporaryGlueTableCredentials` operation with `SupportedPermissionType` equal to `ColumnPermission`, but cell-level permissions exist on the table, this exception is thrown.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetTemporaryGlueTableCredentials

Allows a caller in a secure environment to assume a role with permission to access Amazon S3. In order to vend such credentials, AWS Lake Formation assumes the role associated with a registered location, for example an Amazon S3 bucket, with a scope down policy which restricts the access to a single prefix.

To call this API, the role that the service assumes must have `lakeformation:GetDataAccess` permission on the resource.

Request Syntax

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

{
   "AuditContext": {
      "AdditionalAuditContext": "string"
   },
   "DurationSeconds": number,
   "Permissions": [ "string" ],
   "QuerySessionContext": {
      "AdditionalContext": {
         "string" : "string"
      },
      "ClusterId": "string",
      "QueryAuthorizationId": "string",
      "QueryId": "string",
      "QueryStartTime": number
   },
   "S3Path": "string",
   "SupportedPermissionTypes": [ "string" ],
   "TableArn": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

AuditContext

A structure representing context to access a resource (column names, query ID, etc).

Type: AuditContext object

Required: No

DurationSeconds

The time period, between 900 and 21,600 seconds, for the timeout of the temporary credentials.

Type: Integer

Valid Range: Minimum value of 900. Maximum value of 43200.

Required: No

Permissions

Filters the request based on the user having been granted a list of specified permissions on the requested resource(s).

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

QuerySessionContext

A structure used as a protocol between query engines and Lake Formation or AWS Glue. Contains both a Lake Formation generated authorization identifier and information from the request's authorization context.

Type: QuerySessionContext object

Required: No

S3Path

The Amazon S3 path for the table.

Type: String

Required: No

SupportedPermissionTypes

A list of supported permission types for the table. Valid values are `COLUMN_PERMISSION` and `CELL_FILTER_PERMISSION`.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 255 items.

Valid Values: `COLUMN_PERMISSION | CELL_FILTER_PERMISSION | NESTED_PERMISSION | NESTED_CELL_PERMISSION`

Required: No

TableArn

The ARN identifying a table in the Data Catalog for the temporary credentials request.

Type: String

Required: Yes

Response Syntax

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

{
   "AccessKeyId": "string",
   "Expiration": number,
   "SecretAccessKey": "string",
   "SessionToken": "string",
   "VendedS3Path": [ "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.

AccessKeyId

The access key ID for the temporary credentials.

Type: String

Expiration

The date and time when the temporary credentials expire.

Type: Timestamp

SecretAccessKey

The secret key for the temporary credentials.

Type: String

SessionToken

The session token for the temporary credentials.

Type: String

VendedS3Path

The Amazon S3 path for the temporary credentials.

Type: Array of strings

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

PermissionTypeMismatchException

The engine does not support filtering data based on the enforced permissions. For example, if you call the `GetTemporaryGlueTableCredentials` operation with `SupportedPermissionType` equal to `ColumnPermission`, but cell-level permissions exist on the table, this exception is thrown.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetWorkUnitResults

Returns the work units resulting from the query. Work units can be executed in any order and in parallel.

Request Syntax

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

{
   "QueryId": "string",
   "WorkUnitId": number,
   "WorkUnitToken": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

QueryId

The ID of the plan query operation for which to get results.

Type: String

Length Constraints: Fixed length of 36.

Required: Yes

WorkUnitId

The work unit ID for which to get results. Value generated by enumerating `WorkUnitIdMin` to `WorkUnitIdMax` (inclusive) from the `WorkUnitRange` in the output of `GetWorkUnits`.

Type: Long

Valid Range: Minimum value of 0.

Required: Yes

WorkUnitToken

A work token used to query the execution service. Token output from `GetWorkUnits`.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Response Syntax

```
HTTP/1.1 200

ResultStream
```

Response Elements

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

The response returns the following as the HTTP body.

ResultStream

Rows returned from the `GetWorkUnitResults` operation as a stream of Apache Arrow v1.0 messages.

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ExpiredException

Contains details about an error where the query request expired.

Message

A message describing the error.

HTTP Status Code: 410

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

ThrottledException

Contains details about an error where the query request was throttled.

Message

A message describing the error.

HTTP Status Code: 429

See Also

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

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GetWorkUnits

Retrieves the work units generated by the `StartQueryPlanning` operation.

Request Syntax

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

{
   "NextToken": "string",
   "PageSize": number,
   "QueryId": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

NextToken

A continuation token, if this is a continuation call.

Type: String

Required: No

PageSize

The size of each page to get in the AWS service call. This does not affect the number of items returned in the command's output. Setting a smaller page size results in more calls to the AWS service, retrieving fewer items in each call. This can help prevent the AWS service calls from timing out.

Type: Integer

Required: No

QueryId

The ID of the plan query operation.

Type: String

Length Constraints: Fixed length of 36.

Required: Yes

Response Syntax

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

{
   "NextToken": "string",
   "QueryId": "string",
   "WorkUnitRanges": [
      {
         "WorkUnitIdMax": number,
         "WorkUnitIdMin": number,
         "WorkUnitToken": "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

A continuation token for paginating the returned list of tokens, returned if the current segment of the list is not the last.

Type: String

QueryId

The ID of the plan query operation.

Type: String

WorkUnitRanges

A `WorkUnitRangeList` object that specifies the valid range of work unit IDs for querying the execution service.

Type: Array of WorkUnitRange objects

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ExpiredException

Contains details about an error where the query request expired.

Message

A message describing the error.

HTTP Status Code: 410

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

WorkUnitsNotReadyYetException

Contains details about an error related to work units not being ready.

Message

A message describing the error.

HTTP Status Code: 420

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

GrantPermissions

Grants permissions to the principal to access metadata in the Data Catalog and data organized in underlying data storage such as Amazon S3.

For information about permissions, see Security and Access Control to Metadata and Data.

Request Syntax

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

{
   "CatalogId": "string",
   "Condition": {
      "Expression": "string"
   },
   "Permissions": [ "string" ],
   "PermissionsWithGrantOption": [ "string" ],
   "Principal": {
      "DataLakePrincipalIdentifier": "string"
   },
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
```

```
            "TagValues": [ "string" ]
        },
        "LFTagExpression": {
            "CatalogId": "string",
            "Name": "string"
        },
        "LFTagPolicy": {
            "CatalogId": "string",
            "Expression": [
                {
                    "TagKey": "string",
                    "TagValues": [ "string" ]
                }
            ],
            "ExpressionName": "string",
            "ResourceType": "string"
        },
        "Table": {
            "CatalogId": "string",
            "DatabaseName": "string",
            "Name": "string",
            "TableWildcard": {
            }
        },
        "TableWithColumns": {
            "CatalogId": "string",
            "ColumnNames": [ "string" ],
            "ColumnWildcard": {
                "ExcludedColumnNames": [ "string" ]
            },
            "DatabaseName": "string",
            "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

Permissions

The permissions granted to the principal on the resource. AWS Lake Formation defines privileges to grant and revoke access to metadata in the Data Catalog and data organized in underlying data storage such as Amazon S3. Lake Formation requires that each principal be authorized to perform a specific task on Lake Formation resources.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: Yes

PermissionsWithGrantOption

Indicates a list of the granted permissions that the principal may pass to other users. These permissions may only be a subset of the permissions granted in the `Privileges`.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

Principal

The principal to be granted the permissions on the resource. Supported principals are IAM users or IAM roles, and they are defined by their principal type and their ARN.

Note that if you define a resource with a particular ARN, then later delete, and recreate a resource with that same ARN, the resource maintains the permissions already granted.

Type: DataLakePrincipal object

Required: Yes

Resource

The resource to which permissions are to be granted. Resources in AWS Lake Formation are the Data Catalog, databases, and tables.

Type: Resource object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListDataCellsFilter

Lists all the data cell filters on a table.

Request Syntax

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

{
   "MaxResults": number,
   "NextToken": "string",
   "Table": {
      "CatalogId": "string",
      "DatabaseName": "string",
      "Name": "string",
      "TableWildcard": {
      }
   }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

MaxResults

The maximum size of the response.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is a continuation call.

Type: String

Required: No

Table

A table in the AWS Glue Data Catalog.

Type: TableResource object

Required: No

Response Syntax

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

{
   "DataCellsFilters": [
      {
         "ColumnNames": [ "string" ],
         "ColumnWildcard": {
            "ExcludedColumnNames": [ "string" ]
         },
         "DatabaseName": "string",
         "Name": "string",
         "RowFilter": {
            "AllRowsWildcard": {
            },
            "FilterExpression": "string"
         },
         "TableCatalogId": "string",
         "TableName": "string",
         "VersionId": "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.

DataCellsFilters

A list of `DataCellFilter` structures.

Type: Array of DataCellsFilter objects

NextToken

A continuation token, if not all requested data cell filters have been returned.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListLakeFormationOptIns

Retrieve the current list of resources and principals that are opt in to enforce Lake Formation permissions.

Request Syntax

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

{
   "MaxResults": number,
   "NextToken": "string",
   "Principal": {
      "DataLakePrincipalIdentifier": "string"
   },
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      },
      "LFTagExpression": {
         "CatalogId": "string",
         "Name": "string"
      },
```

```
        "LFTagPolicy": {
           "CatalogId": "string",
           "Expression": [
              {
                 "TagKey": "string",
                 "TagValues": [ "string" ]
              }
           ],
           "ExpressionName": "string",
           "ResourceType": "string"
        },
        "Table": {
           "CatalogId": "string",
           "DatabaseName": "string",
           "Name": "string",
           "TableWildcard": {
           }
        },
        "TableWithColumns": {
           "CatalogId": "string",
           "ColumnNames": [ "string" ],
           "ColumnWildcard": {
              "ExcludedColumnNames": [ "string" ]
           },
           "DatabaseName": "string",
           "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

MaxResults

The maximum number of results to return.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

Principal

The AWS Lake Formation principal. Supported principals are IAM users or IAM roles.

Type: DataLakePrincipal object

Required: No

Resource

A structure for the resource.

Type: Resource object

Required: No

Response Syntax

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

{
   "LakeFormationOptInsInfoList": [
      {
         "Condition": {
            "Expression": "string"
         },
         "LastModified": number,
         "LastUpdatedBy": "string",
         "Principal": {
            "DataLakePrincipalIdentifier": "string"
         },
         "Resource": {
            "Catalog": {
```

```
            "Id": "string"
        },
        "Database": {
            "CatalogId": "string",
            "Name": "string"
        },
        "DataCellsFilter": {
            "DatabaseName": "string",
            "Name": "string",
            "TableCatalogId": "string",
            "TableName": "string"
        },
        "DataLocation": {
            "CatalogId": "string",
            "ResourceArn": "string"
        },
        "LFTag": {
            "CatalogId": "string",
            "TagKey": "string",
            "TagValues": [ "string" ]
        },
        "LFTagExpression": {
            "CatalogId": "string",
            "Name": "string"
        },
        "LFTagPolicy": {
            "CatalogId": "string",
            "Expression": [
                {
                    "TagKey": "string",
                    "TagValues": [ "string" ]
                }
            ],
            "ExpressionName": "string",
            "ResourceType": "string"
        },
        "Table": {
            "CatalogId": "string",
            "DatabaseName": "string",
            "Name": "string",
            "TableWildcard": {
            }
        },
        "TableWithColumns": {
```

```
                "CatalogId": "string",
                "ColumnNames": [ "string" ],
                "ColumnWildcard": {
                   "ExcludedColumnNames": [ "string" ]
                },
                "DatabaseName": "string",
                "Name": "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.

LakeFormationOptInsInfoList

A list of principal-resource pairs that have Lake Formation permissins enforced.

Type: Array of LakeFormationOptInsInfo objects

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListLFTagExpressions

Returns the LF-Tag expressions in caller's account filtered based on caller's permissions. Data Lake and read only admins implicitly can see all tag expressions in their account, else caller needs DESCRIBE permissions on tag expression.

Request Syntax

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

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

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

MaxResults

The maximum number of results to return.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

Response Syntax

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

{
   "LFTagExpressions": [
      {
         "CatalogId": "string",
         "Description": "string",
         "Expression": [
            {
               "TagKey": "string",
               "TagValues": [ "string" ]
            }
         ],
         "Name": "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.

LFTagExpressions

Logical expressions composed of one more LF-Tag key-value pairs.

Type: Array of LFTagExpression objects

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Request example

This example illustrates one usage of ListLFTagExpressions.

```
{
  "CatalogId": "123456789012",
  "MaxResults": 5,
  "NextToken": "ExampleNa0ZYUnpkWVZVWk5TRFpaVA=="
}
```

Response example

This example illustrates one usage of ListLFTagExpressions.

```
{
  "LFTagExpressions": [
    {
      "Name": "city_department",
      "Description": "An updated description",
      "CatalogId": "123456789012",
      "Expression": [
        {
          "TagKey": "department",
          "TagValues": [
```

```
            "sales"
          ]
        }
      ]
    }
  ],
  "NextToken": "ExampleNa0ZYUnpkWVZVWk5TRFpaVA=="
}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListLFTags

Lists LF-tags that the requester has permission to view.

Request Syntax

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

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

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

MaxResults

The maximum number of results to return.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

ResourceShareType

If resource share type is `ALL`, returns both in-account LF-tags and shared LF-tags that the requester has permission to view. If resource share type is `FOREIGN`, returns all share LF-tags that the requester can view. If no resource share type is passed, lists LF-tags in the given catalog ID that the requester has permission to view.

Type: String

Valid Values: `FOREIGN | ALL`

Required: No

Response Syntax

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

{
   "LFTags": [
      {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "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.

LFTags

A list of LF-tags that the requested has permission to view.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

NextToken

A continuation token, present if the current list segment is not the last.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListPermissions

Returns a list of the principal permissions on the resource, filtered by the permissions of the caller. For example, if you are granted an ALTER permission, you are able to see only the principal permissions for ALTER.

This operation returns only those permissions that have been explicitly granted. If both `Principal` and `Resource` parameters are provided, the response returns effective permissions rather than the explicitly granted permissions.

For information about permissions, see Security and Access Control to Metadata and Data.

Request Syntax

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

{
   "CatalogId": "string",
   "IncludeRelated": "string",
   "MaxResults": number,
   "NextToken": "string",
   "Principal": {
      "DataLakePrincipalIdentifier": "string"
   },
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
```

```
        },
        "LFTag": {
           "CatalogId": "string",
           "TagKey": "string",
           "TagValues": [ "string" ]
        },
        "LFTagExpression": {
           "CatalogId": "string",
           "Name": "string"
        },
        "LFTagPolicy": {
           "CatalogId": "string",
           "Expression": [
              {
                 "TagKey": "string",
                 "TagValues": [ "string" ]
              }
           ],
           "ExpressionName": "string",
           "ResourceType": "string"
        },
        "Table": {
           "CatalogId": "string",
           "DatabaseName": "string",
           "Name": "string",
           "TableWildcard": {
           }
        },
        "TableWithColumns": {
           "CatalogId": "string",
           "ColumnNames": [ "string" ],
           "ColumnWildcard": {
              "ExcludedColumnNames": [ "string" ]
           },
           "DatabaseName": "string",
           "Name": "string"
        }
     },
     "ResourceType": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

IncludeRelated

Indicates that related permissions should be included in the results when listing permissions on a table resource.

Set the field to `TRUE` to show the cell filters on a table resource. Default is `FALSE`. The Principal parameter must not be specified when requesting cell filter information.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 5.

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

Required: No

MaxResults

The maximum number of results to return.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

Principal

Specifies a principal to filter the permissions returned.

Type: DataLakePrincipal object

Required: No

Resource

A resource where you will get a list of the principal permissions.

This operation does not support getting privileges on a table with columns. Instead, call this operation on the table, and the operation returns the table and the table w columns.

Type: Resource object

Required: No

ResourceType

Specifies a resource type to filter the permissions returned.

Type: String

Valid Values: `CATALOG | DATABASE | TABLE | DATA_LOCATION | LF_TAG | LF_TAG_POLICY | LF_TAG_POLICY_DATABASE | LF_TAG_POLICY_TABLE | LF_NAMED_TAG_EXPRESSION`

Required: No

Response Syntax

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

{
   "NextToken": "string",
   "PrincipalResourcePermissions": [
      {
         "AdditionalDetails": {
            "ResourceShare": [ "string" ]
         },
         "Condition": {
            "Expression": "string"
         },
         "LastUpdated": number,
         "LastUpdatedBy": "string",
         "Permissions": [ "string" ],
         "PermissionsWithGrantOption": [ "string" ],
         "Principal": {
            "DataLakePrincipalIdentifier": "string"
         },
         "Resource": {
            "Catalog": {
               "Id": "string"
            },
            "Database": {
               "CatalogId": "string",
               "Name": "string"
            },
            "DataCellsFilter": {
               "DatabaseName": "string",
               "Name": "string",
               "TableCatalogId": "string",
               "TableName": "string"
            },
            "DataLocation": {
               "CatalogId": "string",
               "ResourceArn": "string"
            },
            "LFTag": {
               "CatalogId": "string",
               "TagKey": "string",
```

```
                "TagValues": [ "string" ]
            },
            "LFTagExpression": {
                "CatalogId": "string",
                "Name": "string"
            },
            "LFTagPolicy": {
                "CatalogId": "string",
                "Expression": [
                    {
                        "TagKey": "string",
                        "TagValues": [ "string" ]
                    }
                ],
                "ExpressionName": "string",
                "ResourceType": "string"
            },
            "Table": {
                "CatalogId": "string",
                "DatabaseName": "string",
                "Name": "string",
                "TableWildcard": {
                }
            },
            "TableWithColumns": {
                "CatalogId": "string",
                "ColumnNames": [ "string" ],
                "ColumnWildcard": {
                    "ExcludedColumnNames": [ "string" ]
                },
                "DatabaseName": "string",
                "Name": "string"
            }
        }
    }
  ]
}
```

Response Elements

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

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

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

PrincipalResourcePermissions

A list of principals and their permissions on the resource for the specified principal and resource types.

Type: Array of PrincipalResourcePermissions objects

Errors

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

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListResources

Lists the resources registered to be managed by the Data Catalog.

Request Syntax

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

{
   "FilterConditionList": [
      {
         "ComparisonOperator": "string",
         "Field": "string",
         "StringValueList": [ "string" ]
      }
   ],
   "MaxResults": number,
   "NextToken": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

FilterConditionList

Any applicable row-level and/or column-level filtering conditions for the resources.

Type: Array of FilterCondition objects

Array Members: Minimum number of 1 item. Maximum number of 20 items.

Required: No

MaxResults

The maximum number of resource results.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is not the first call to retrieve these resources.

Type: String

Required: No

Response Syntax

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

{
   "NextToken": "string",
   "ResourceInfoList": [
      {
         "ExpectedResourceOwnerAccount": "string",
         "HybridAccessEnabled": boolean,
         "LastModified": number,
         "ResourceArn": "string",
         "RoleArn": "string",
         "VerificationStatus": "string",
         "WithFederation": boolean,
         "WithPrivilegedAccess": boolean
      }
   ]
}
```

Response Elements

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

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

NextToken

A continuation token, if this is not the first call to retrieve these resources.

Type: String

ResourceInfoList

A summary of the data lake resources.

Type: Array of ResourceInfo objects

Errors

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

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListTableStorageOptimizers

Returns the configuration of all storage optimizers associated with a specified table.

Request Syntax

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

{
   "CatalogId": "string",
   "DatabaseName": "string",
   "MaxResults": number,
   "NextToken": "string",
   "StorageOptimizerType": "string",
   "TableName": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The Catalog ID of the table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

DatabaseName

Name of the database where the table is present.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

MaxResults

The number of storage optimizers to return on each call.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token, if this is a continuation call.

Type: String

Required: No

StorageOptimizerType

The specific type of storage optimizers to list. The supported value is `compaction`.

Type: String

Valid Values: `COMPACTION | GARBAGE_COLLECTION | ALL`

Required: No

TableName

Name of the table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

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

{
   "NextToken": "string",
   "StorageOptimizerList": [
      {
         "Config": {
            "string" : "string"
         },
         "ErrorMessage": "string",
         "LastRunDetails": "string",
         "StorageOptimizerType": "string",
         "Warnings": "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

A continuation token for paginating the returned list of tokens, returned if the current segment of the list is not the last.

Type: String

StorageOptimizerList

A list of the storage optimizers associated with a table.

Type: Array of StorageOptimizer objects

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

ListTransactions

Returns metadata about transactions and their status. To prevent the response from growing indefinitely, only uncommitted transactions and those available for time-travel queries are returned.

This operation can help you identify uncommitted transactions or to get information about transactions.

Request Syntax

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

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

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The catalog for which to list transactions. Defaults to the account ID of the caller.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

MaxResults

The maximum number of transactions to return in a single call.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

NextToken

A continuation token if this is not the first call to retrieve transactions.

Type: String

Length Constraints: Maximum length of 4096.

Required: No

StatusFilter

A filter indicating the status of transactions to return. Options are ALL | COMPLETED | COMMITTED | ABORTED | ACTIVE. The default is ALL.

Type: String

Valid Values: `ALL | COMPLETED | ACTIVE | COMMITTED | ABORTED`

Required: No

Response Syntax

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

{
   "NextToken": "string",
   "Transactions": [
      {
         "TransactionEndTime": number,
         "TransactionId": "string",
         "TransactionStartTime": number,
         "TransactionStatus": "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

A continuation token indicating whether additional data is available.

Type: String

Length Constraints: Maximum length of 4096.

Transactions

A list of transactions. The record for each transaction is a `TransactionDescription` object.

Type: Array of TransactionDescription objects

Errors

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

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

PutDataLakeSettings

Sets the list of data lake administrators who have admin privileges on all resources managed by AWS Lake Formation. For more information on admin privileges, see Granting Lake Formation Permissions.

This API replaces the current list of data lake admins with the new list being passed. To add an admin, fetch the current list and add the new admin to that list and pass that list in this API.

Request Syntax

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

{
   "CatalogId": "string",
   "DataLakeSettings": {
      "AllowExternalDataFiltering": boolean,
      "AllowFullTableExternalDataAccess": boolean,
      "AuthorizedSessionTagValueList": [ "string" ],
      "CreateDatabaseDefaultPermissions": [
         {
            "Permissions": [ "string" ],
            "Principal": {
               "DataLakePrincipalIdentifier": "string"
            }
         }
      ],
      "CreateTableDefaultPermissions": [
         {
            "Permissions": [ "string" ],
            "Principal": {
               "DataLakePrincipalIdentifier": "string"
            }
         }
      ],
      "DataLakeAdmins": [
         {
            "DataLakePrincipalIdentifier": "string"
         }
      ],
      "ExternalDataFilteringAllowList": [
```

```
            {
               "DataLakePrincipalIdentifier": "string"
            }
         ],
         "Parameters": {
            "string" : "string"
         },
         "ReadOnlyAdmins": [
            {
               "DataLakePrincipalIdentifier": "string"
            }
         ],
         "TrustedResourceOwners": [ "string" ]
      }
   }
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

DataLakeSettings

A structure representing a list of Lake Formation principals designated as data lake administrators.

Type: DataLakeSettings object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

RegisterResource

Registers the resource as managed by the Data Catalog.

To add or update data, AWS Lake Formation needs read/write access to the chosen data location. Choose a role that you know has permission to do this, or choose the AWSServiceRoleForLakeFormationDataAccess service-linked role. When you register the first Amazon S3 path, the service-linked role and a new inline policy are created on your behalf. Lake Formation adds the first path to the inline policy and attaches it to the service-linked role. When you register subsequent paths, Lake Formation adds the path to the existing policy.

The following request registers a new location and gives Lake Formation permission to use the service-linked role to access that location.

`ResourceArn = arn:aws:s3:::my-bucket/ UseServiceLinkedRole = true`

If `UseServiceLinkedRole` is not set to true, you must provide or set the `RoleArn`:

`arn:aws:iam::12345:role/my-data-access-role`

Request Syntax

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

{
   "ExpectedResourceOwnerAccount": "string",
   "HybridAccessEnabled": boolean,
   "ResourceArn": "string",
   "RoleArn": "string",
   "UseServiceLinkedRole": boolean,
   "WithFederation": boolean,
   "WithPrivilegedAccess": boolean
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ExpectedResourceOwnerAccount

The AWS account that owns the AWS Glue tables associated with specific Amazon S3 locations.

Type: String

Pattern: `^\d{12}$`

Required: No

HybridAccessEnabled

Specifies whether the data access of tables pointing to the location can be managed by both Lake Formation permissions as well as Amazon S3 bucket policies.

Type: Boolean

Required: No

ResourceArn

The Amazon Resource Name (ARN) of the resource that you want to register.

Type: String

Required: Yes

RoleArn

The identifier for the role that registers the resource.

Type: String

Pattern: `arn:aws:iam::[0-9]*:role/.*`

Required: No

UseServiceLinkedRole

Designates an AWS Identity and Access Management (IAM) service-linked role by registering this role with the Data Catalog. A service-linked role is a unique type of IAM role that is linked directly to Lake Formation.

For more information, see Using Service-Linked Roles for Lake Formation.

Type: Boolean

Required: No

WithFederation

Whether or not the resource is a federated resource.

Type: Boolean

Required: No

WithPrivilegedAccess

Grants the calling principal the permissions to perform all supported Lake Formation operations on the registered data location.

Type: Boolean

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

AlreadyExistsException

A resource to be created or added already exists.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNumberLimitExceededException

A resource numerical limit was exceeded.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

RemoveLFTagsFromResource

Removes an LF-tag from the resource. Only database, table, or tableWithColumns resource are allowed. To tag columns, use the column inclusion list in `tableWithColumns` to specify column input.

Request Syntax

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

{
   "CatalogId": "string",
   "LFTags": [
      {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
```

```
        },
        "LFTagExpression": {
           "CatalogId": "string",
           "Name": "string"
        },
        "LFTagPolicy": {
           "CatalogId": "string",
           "Expression": [
              {
                 "TagKey": "string",
                 "TagValues": [ "string" ]
              }
           ],
           "ExpressionName": "string",
           "ResourceType": "string"
        },
        "Table": {
           "CatalogId": "string",
           "DatabaseName": "string",
           "Name": "string",
           "TableWildcard": {
           }
        },
        "TableWithColumns": {
           "CatalogId": "string",
           "ColumnNames": [ "string" ],
           "ColumnWildcard": {
              "ExcludedColumnNames": [ "string" ]
           },
           "DatabaseName": "string",
           "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

LFTags

The LF-tags to be removed from the resource.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: Yes

Resource

The database, table, or column resource where you want to remove an LF-tag.

Type: Resource object

Required: Yes

Response Syntax

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

{
   "Failures": [
      {
         "Error": {
            "ErrorCode": "string",
            "ErrorMessage": "string"
         },
```

```
            "LFTag": {
               "CatalogId": "string",
               "TagKey": "string",
               "TagValues": [ "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.

Failures

A list of failures to untag a resource.

Type: Array of LFTagError objects

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

GlueEncryptionException

An encryption operation failed.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

RevokePermissions

Revokes permissions to the principal to access metadata in the Data Catalog and data organized in underlying data storage such as Amazon S3.

Request Syntax

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

{
   "CatalogId": "string",
   "Condition": {
      "Expression": "string"
   },
   "Permissions": [ "string" ],
   "PermissionsWithGrantOption": [ "string" ],
   "Principal": {
      "DataLakePrincipalIdentifier": "string"
   },
   "Resource": {
      "Catalog": {
         "Id": "string"
      },
      "Database": {
         "CatalogId": "string",
         "Name": "string"
      },
      "DataCellsFilter": {
         "DatabaseName": "string",
         "Name": "string",
         "TableCatalogId": "string",
         "TableName": "string"
      },
      "DataLocation": {
         "CatalogId": "string",
         "ResourceArn": "string"
      },
      "LFTag": {
         "CatalogId": "string",
         "TagKey": "string",
         "TagValues": [ "string" ]
      },
```

```
        "LFTagExpression": {
           "CatalogId": "string",
           "Name": "string"
        },
        "LFTagPolicy": {
           "CatalogId": "string",
           "Expression": [
              {
                 "TagKey": "string",
                 "TagValues": [ "string" ]
              }
           ],
           "ExpressionName": "string",
           "ResourceType": "string"
        },
        "Table": {
           "CatalogId": "string",
           "DatabaseName": "string",
           "Name": "string",
           "TableWildcard": {
           }
        },
        "TableWithColumns": {
           "CatalogId": "string",
           "ColumnNames": [ "string" ],
           "ColumnWildcard": {
              "ExcludedColumnNames": [ "string" ]
           },
           "DatabaseName": "string",
           "Name": "string"
        }
    }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

Permissions

The permissions revoked to the principal on the resource. For information about permissions, see Security and Access Control to Metadata and Data.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: Yes

PermissionsWithGrantOption

Indicates a list of permissions for which to revoke the grant option allowing the principal to pass permissions to other principals.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

Principal

The principal to be revoked permissions on the resource.

Type: DataLakePrincipal object

Required: Yes

Resource

The resource to which permissions are to be revoked.

Type: Resource object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

SearchDatabasesByLFTags

This operation allows a search on `DATABASE` resources by `TagCondition`. This operation is used by admins who want to grant user permissions on certain `TagConditions`. Before making a grant, the admin can use `SearchDatabasesByTags` to find all resources where the given `TagConditions` are valid to verify whether the returned resources can be shared.

Request Syntax

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

{
   "CatalogId": "string",
   "Expression": [
      {
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "MaxResults": number,
   "NextToken": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Expression

A list of conditions (`LFTag` structures) to search for in database resources.

Type: Array of LFTag objects

Required: Yes

MaxResults

The maximum number of results to return.

Type: Integer

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

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

Response Syntax

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

{
   "DatabaseList": [
      {
         "Database": {
            "CatalogId": "string",
            "Name": "string"
         },
         "LFTags": [
```

```
            {
               "CatalogId": "string",
               "TagKey": "string",
               "TagValues": [ "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.

DatabaseList

A list of databases that meet the LF-tag conditions.

Type: Array of TaggedDatabase objects

NextToken

A continuation token, present if the current list segment is not the last.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

GlueEncryptionException

An encryption operation failed.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

SearchTablesByLFTags

This operation allows a search on `TABLE` resources by `LFTags`. This will be used by admins who want to grant user permissions on certain LF-tags. Before making a grant, the admin can use `SearchTablesByLFTags` to find all resources where the given `LFTags` are valid to verify whether the returned resources can be shared.

Request Syntax

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

{
   "CatalogId": "string",
   "Expression": [
      {
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "MaxResults": number,
   "NextToken": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Expression

A list of conditions (`LFTag` structures) to search for in table resources.

Type: Array of LFTag objects

Required: Yes

MaxResults

The maximum number of results to return.

Type: Integer

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

Required: No

NextToken

A continuation token, if this is not the first call to retrieve this list.

Type: String

Required: No

Response Syntax

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

{
   "NextToken": "string",
   "TableList": [
      {
         "LFTagOnDatabase": [
            {
               "CatalogId": "string",
               "TagKey": "string",
               "TagValues": [ "string" ]
            }
```

```
            ],
            "LFTagsOnColumns": [
               {
                  "LFTags": [
                     {
                        "CatalogId": "string",
                        "TagKey": "string",
                        "TagValues": [ "string" ]
                     }
                  ],
                  "Name": "string"
               }
            ],
            "LFTagsOnTable": [
               {
                  "CatalogId": "string",
                  "TagKey": "string",
                  "TagValues": [ "string" ]
               }
            ],
            "Table": {
               "CatalogId": "string",
               "DatabaseName": "string",
               "Name": "string",
               "TableWildcard": {
               }
            }
         }
      ]
}
```

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

A continuation token, present if the current list segment is not the last. On the first run, if you include a not null (a value) token you can get empty pages.

Type: String

TableList

A list of tables that meet the LF-tag conditions.

Type: Array of TaggedTable objects

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

GlueEncryptionException

An encryption operation failed.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

StartQueryPlanning

Submits a request to process a query statement.

This operation generates work units that can be retrieved with the `GetWorkUnits` operation as soon as the query state is WORKUNITS_AVAILABLE or FINISHED.

Request Syntax

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

{
   "QueryPlanningContext": {
      "CatalogId": "string",
      "DatabaseName": "string",
      "QueryAsOfTime": number,
      "QueryParameters": {
         "string" : "string"
      },
      "TransactionId": "string"
   },
   "QueryString": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

QueryPlanningContext

A structure containing information about the query plan.

Type: QueryPlanningContext object

Required: Yes

QueryString

A PartiQL query statement used as an input to the planner service.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

Response Syntax

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

{
   "QueryId": "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.

QueryId

The ID of the plan query operation can be used to fetch the actual work unit descriptors that are produced as the result of the operation. The ID is also used to get the query state and as an input to the `Execute` operation.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

ThrottledException

Contains details about an error where the query request was throttled.

Message

A message describing the error.

HTTP Status Code: 429

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

StartTransaction

Starts a new transaction and returns its transaction ID. Transaction IDs are opaque objects that you can use to identify a transaction.

Request Syntax

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

{
   "TransactionType": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TransactionType

Indicates whether this transaction should be read only or read and write. Writes made using a read-only transaction ID will be rejected. Read-only transactions do not need to be committed.

Type: String

Valid Values: `READ_AND_WRITE | READ_ONLY`

Required: No

Response Syntax

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

{
```

```
    "TransactionId": "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.

TransactionId

An opaque identifier for the transaction.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Errors

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

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateDataCellsFilter

Updates a data cell filter.

Request Syntax

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

{
   "TableData": {
      "ColumnNames": [ "string" ],
      "ColumnWildcard": {
         "ExcludedColumnNames": [ "string" ]
      },
      "DatabaseName": "string",
      "Name": "string",
      "RowFilter": {
         "AllRowsWildcard": {
         },
         "FilterExpression": "string"
      },
      "TableCatalogId": "string",
      "TableName": "string",
      "VersionId": "string"
   }
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

TableData

A `DataCellsFilter` structure containing information about the data cells filter.

Type: DataCellsFilter object

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateLakeFormationIdentityCenterConfiguration

Updates the IAM Identity Center connection parameters.

Request Syntax

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

{
   "ApplicationStatus": "string",
   "CatalogId": "string",
   "ExternalFiltering": {
      "AuthorizedTargets": [ "string" ],
      "Status": "string"
   },
   "ServiceIntegrations": [
      { ... }
   ],
   "ShareRecipients": [
      {
         "DataLakePrincipalIdentifier": "string"
      }
   ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ApplicationStatus

Allows to enable or disable the IAM Identity Center connection.

Type: String

Valid Values: `ENABLED | DISABLED`

Required: No

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, view definitions, and other control information to manage your Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

ExternalFiltering

A list of the account IDs of AWS accounts of third-party applications that are allowed to access data managed by Lake Formation.

Type: ExternalFilteringConfiguration object

Required: No

ServiceIntegrations

A list of service integrations for enabling trusted identity propagation with external services such as Redshift.

Type: Array of ServiceIntegrationUnion objects

Required: No

ShareRecipients

A list of AWS account IDs or AWS organization/organizational unit ARNs that are allowed to access to access data managed by Lake Formation.

If the `ShareRecipients` list includes valid values, then the resource share is updated with the principals you want to have access to the resources.

If the `ShareRecipients` value is null, both the list of share recipients and the resource share remain unchanged.

If the `ShareRecipients` value is an empty list, then the existing share recipients list will be cleared, and the resource share will be deleted.

Type: Array of DataLakePrincipal objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateLFTag

Updates the list of possible values for the specified LF-tag key. If the LF-tag does not exist, the operation throws an EntityNotFoundException. The values in the delete key values will be deleted from list of possible values. If any value in the delete key values is attached to a resource, then API errors out with a 400 Exception - "Update not allowed". Untag the attribute before deleting the LF-tag key's value.

Request Syntax

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

{
   "CatalogId": "string",
   "TagKey": "string",
   "TagValuesToAdd": [ "string" ],
   "TagValuesToDelete": [ "string" ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TagKey

The key-name for the LF-tag for which to add or delete values.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

Required: Yes

TagValuesToAdd

A list of LF-tag values to add from the LF-tag.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

Required: No

TagValuesToDelete

A list of LF-tag values to delete from the LF-tag.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateLFTagExpression

Updates the name of the LF-Tag expression to the new description and expression body provided. Updating a LF-Tag expression immediately changes the permission boundaries of all existing `LFTagPolicy` permission grants that reference the given LF-Tag expression.

Request Syntax

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

{
   "CatalogId": "string",
   "Description": "string",
   "Expression": [
      {
         "TagKey": "string",
         "TagValues": [ "string" ]
      }
   ],
   "Name": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The identifier for the Data Catalog. By default, the account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Description

The description with information about the saved LF-Tag expression.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

Expression

The LF-Tag expression body composed of one more LF-Tag key-value pairs.

Type: Array of LFTag objects

Required: Yes

Name

The name for the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNumberLimitExceededException

A resource numerical limit was exceeded.

Message

A message describing the problem.

HTTP Status Code: 400

Examples

Request example

This example illustrates one usage of UpdateLFTagExpression.

```
{
  "CatalogId": "123456789012",
  "Name": "city_department",
  "Description": "An updated description",
  "Expression": [
    {
      "TagKey": "Department",
      "TagValues": [
        "Sales"
      ]
    }
  ]
}
```

Response example

This example illustrates one usage of UpdateLFTagExpression.

```
{}
```

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateResource

Updates the data access role used for vending access to the given (registered) resource in AWS Lake Formation.

Request Syntax

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

{
   "ExpectedResourceOwnerAccount": "string",
   "HybridAccessEnabled": boolean,
   "ResourceArn": "string",
   "RoleArn": "string",
   "WithFederation": boolean
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

ExpectedResourceOwnerAccount

The AWS account that owns the AWS Glue tables associated with specific Amazon S3 locations.

Type: String

Pattern: ^\d{12}$

Required: No

HybridAccessEnabled

Specifies whether the data access of tables pointing to the location can be managed by both Lake Formation permissions as well as Amazon S3 bucket policies.

Type: Boolean

Required: No

ResourceArn

The resource ARN.

Type: String

Required: Yes

RoleArn

The new role to use for the given resource registered in Lake Formation.

Type: String

Pattern: `arn:aws:iam::[0-9]*:role/.*`

Required: Yes

WithFederation

Whether or not the resource is a federated resource.

Type: Boolean

Required: No

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateTableObjects

Updates the manifest of Amazon S3 objects that make up the specified governed table.

Request Syntax

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

{
   "CatalogId": "string",
   "DatabaseName": "string",
   "TableName": "string",
   "TransactionId": "string",
   "WriteOperations": [
      {
         "AddObject": {
            "ETag": "string",
            "PartitionValues": [ "string" ],
            "Size": number,
            "Uri": "string"
         },
         "DeleteObject": {
            "ETag": "string",
            "PartitionValues": [ "string" ],
            "Uri": "string"
         }
      }
   ]
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The catalog containing the governed table to update. Defaults to the caller's account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

DatabaseName

The database containing the governed table to update.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TableName

The governed table to update.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TransactionId

The transaction at which to do the write.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: No

WriteOperations

A list of `WriteOperation` objects that define an object to add to or delete from the manifest for a governed table.

Type: Array of WriteOperation objects

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Required: Yes

Response Syntax

```
HTTP/1.1 200
```

Response Elements

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

Errors

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

ConcurrentModificationException

Two processes are trying to modify a resource simultaneously.

Message

A message describing the problem.

HTTP Status Code: 400

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

OperationTimeoutException

The operation timed out.

Message

A message describing the problem.

HTTP Status Code: 400

ResourceNotReadyException

Contains details about an error related to a resource which is not ready for a transaction.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCanceledException

Contains details about an error related to a transaction that was cancelled.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommitInProgressException

Contains details about an error related to a transaction commit that was in progress.

Message

A message describing the error.

HTTP Status Code: 400

TransactionCommittedException

Contains details about an error where the specified transaction has already been committed and cannot be used for `UpdateTableObjects`.

Message

A message describing the 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 V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

UpdateTableStorageOptimizer

Updates the configuration of the storage optimizers for a table.

Request Syntax

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

{
   "CatalogId": "string",
   "DatabaseName": "string",
   "StorageOptimizerConfig": {
      "string" : {
         "string" : "string"
      }
   },
   "TableName": "string"
}
```

URI Request Parameters

The request does not use any URI parameters.

Request Body

The request accepts the following data in JSON format.

CatalogId

The Catalog ID of the table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

DatabaseName

Name of the database where the table is present.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

StorageOptimizerConfig

Name of the configuration for the storage optimizer.

Type: String to string to string map map

Valid Keys: `COMPACTION | GARBAGE_COLLECTION | ALL`

Required: Yes

TableName

Name of the table for which to enable the storage optimizer.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Response Syntax

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

{
   "Result": "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.

Result

A response indicating the success of failure of the operation.

Type: String

Errors

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

AccessDeniedException

Access to a resource was denied.

Message

A message describing the problem.

HTTP Status Code: 403

EntityNotFoundException

A specified entity does not exist.

Message

A message describing the problem.

HTTP Status Code: 400

InternalServiceException

An internal service error occurred.

Message

A message describing the problem.

HTTP Status Code: 500

InvalidInputException

The input provided was not valid.

Message

A message describing the problem.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python (Boto3)
- AWS SDK for Ruby V3

Data Types

The AWS Lake Formation 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:

- AddObjectInput
- AllRowsWildcard
- AuditContext
- BatchPermissionsFailureEntry
- BatchPermissionsRequestEntry
- CatalogResource
- ColumnLFTag
- ColumnWildcard
- Condition
- DatabaseResource
- DataCellsFilter
- DataCellsFilterResource
- DataLakePrincipal
- DataLakeSettings
- DataLocationResource
- DeleteObjectInput
- DetailsMap
- ErrorDetail
- ExecutionStatistics
- ExternalFilteringConfiguration

- FilterCondition
- LakeFormationOptInsInfo
- LFTag
- LFTagError
- LFTagExpression
- LFTagExpressionResource
- LFTagKeyResource
- LFTagPair
- LFTagPolicyResource
- PartitionObjects
- PartitionValueList
- PlanningStatistics
- PrincipalPermissions
- PrincipalResourcePermissions
- QueryPlanningContext
- QuerySessionContext
- RedshiftConnect
- RedshiftScopeUnion
- Resource
- ResourceInfo
- RowFilter
- ServiceIntegrationUnion
- StorageOptimizer
- TableObject
- TableResource
- TableWildcard
- TableWithColumnsResource
- TaggedDatabase
- TaggedTable
- TemporaryCredentials

- TransactionDescription
- VirtualObject
- WorkUnitRange
- WriteOperation

AddObjectInput

A new object to add to the governed table.

Contents

ETag

The Amazon S3 ETag of the object. Returned by `GetTableObjects` for validation and used to identify changes to the underlying data.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: Yes

Size

The size of the Amazon S3 object in bytes.

Type: Long

Required: Yes

Uri

The Amazon S3 location of the object.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

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

Required: Yes

PartitionValues

A list of partition values for the object. A value must be specified for each partition key associated with the table.

The supported data types are integer, long, date(yyyy-MM-dd), timestamp(yyyy-MM-dd HH:mm:ssXXX or yyyy-MM-dd HH:mm:ss"), string and decimal.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Maximum length of 1024.

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

AllRowsWildcard

A structure that you pass to indicate you want all rows in a filter.

Contents

The members of this exception structure are context-dependent.

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

AuditContext

A structure used to include auditing information on the privileged API.

Contents

AdditionalAuditContext

The filter engine can populate the 'AdditionalAuditContext' information with the request ID for you to track. This information will be displayed in CloudTrail log in your account.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

BatchPermissionsFailureEntry

A list of failures when performing a batch grant or batch revoke operation.

Contents

Error

An error message that applies to the failure of the entry.

Type: ErrorDetail object

Required: No

RequestEntry

An identifier for an entry of the batch request.

Type: BatchPermissionsRequestEntry 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

BatchPermissionsRequestEntry

A permission to a resource granted by batch operation to the principal.

Contents

Id

A unique identifier for the batch permissions request entry.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Required: Yes

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

Permissions

The permissions to be granted.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

PermissionsWithGrantOption

Indicates if the option to pass permissions is granted.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

Principal

The principal to be granted a permission.

Type: DataLakePrincipal object

Required: No

Resource

The resource to which the principal is to be granted a permission.

Type: Resource 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

CatalogResource

A structure for the catalog object.

Contents

Id

An identifier for the catalog resource.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ColumnLFTag

A structure containing the name of a column resource and the LF-tags attached to it.

Contents

LFTags

The LF-tags attached to a column resource.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: No

Name

The name of a column resource.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ColumnWildcard

A wildcard object, consisting of an optional list of excluded column names or indexes.

Contents

ExcludedColumnNames

Excludes column names. Any column with this name will be excluded.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Contents

Expression

An expression written based on the Cedar Policy Language used to match the principal attributes.

Type: String

Length Constraints: Maximum length of 3000.

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

DatabaseResource

A structure for the database object.

Contents

Name

The name of the database resource. Unique to the Data Catalog.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, it is the account ID of the caller.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DataCellsFilter

A structure that describes certain columns on certain rows.

Contents

DatabaseName

A database in the AWS Glue Data Catalog.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Name

The name given by the user to the data filter cell.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TableCatalogId

The ID of the catalog to which the table belongs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TableName

A table in the database.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

ColumnNames

A list of column names and/or nested column attributes. When specifying nested attributes, use a qualified dot (.) delimited format such as "address"."zip". Nested attributes within this list may not exceed a depth of 5.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

ColumnWildcard

A wildcard with exclusions.

You must specify either a `ColumnNames` list or the `ColumnWildCard`.

Type: ColumnWildcard object

Required: No

RowFilter

A PartiQL predicate.

Type: RowFilter object

Required: No

VersionId

The ID of the data cells filter version.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DataCellsFilterResource

A structure for a data cells filter resource.

Contents

DatabaseName

A database in the AWS Glue Data Catalog.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Name

The name of the data cells filter.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TableCatalogId

The ID of the catalog to which the table belongs.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TableName

The name of the table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DataLakePrincipal

The AWS Lake Formation principal. Supported principals are IAM users or IAM roles.

Contents

DataLakePrincipalIdentifier

An identifier for the AWS Lake Formation principal.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

DataLakeSettings

A structure representing a list of AWS Lake Formation principals designated as data lake administrators and lists of principal permission entries for default create database and default create table permissions.

Contents

AllowExternalDataFiltering

Whether to allow Amazon EMR clusters to access data managed by Lake Formation.

If true, you allow Amazon EMR clusters to access data in Amazon S3 locations that are registered with Lake Formation.

If false or null, no Amazon EMR clusters will be able to access data in Amazon S3 locations that are registered with Lake Formation.

For more information, see (Optional) Allow external data filtering.

Type: Boolean

Required: No

AllowFullTableExternalDataAccess

Whether to allow a third-party query engine to get data access credentials without session tags when a caller has full data access permissions.

Type: Boolean

Required: No

AuthorizedSessionTagValueList

Lake Formation relies on a privileged process secured by Amazon EMR or the third party integrator to tag the user's role while assuming it. Lake Formation will publish the acceptable key-value pair, for example key = "LakeFormationTrustedCaller" and value = "TRUE" and the third party integrator must properly tag the temporary security credentials that will be used to call Lake Formation's administrative APIs.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

CreateDatabaseDefaultPermissions

Specifies whether access control on newly created database is managed by Lake Formation permissions or exclusively by IAM permissions.

A null value indicates access control by Lake Formation permissions. A value that assigns ALL to IAM_ALLOWED_PRINCIPALS indicates access control by IAM permissions. This is referred to as the setting "Use only IAM access control," and is for backward compatibility with the AWS Glue permission model implemented by IAM permissions.

The only permitted values are an empty array or an array that contains a single JSON object that grants ALL to IAM_ALLOWED_PRINCIPALS.

For more information, see Changing the Default Security Settings for Your Data Lake.

Type: Array of PrincipalPermissions objects

Required: No

CreateTableDefaultPermissions

Specifies whether access control on newly created table is managed by Lake Formation permissions or exclusively by IAM permissions.

A null value indicates access control by Lake Formation permissions. A value that assigns ALL to IAM_ALLOWED_PRINCIPALS indicates access control by IAM permissions. This is referred to as the setting "Use only IAM access control," and is for backward compatibility with the AWS Glue permission model implemented by IAM permissions.

The only permitted values are an empty array or an array that contains a single JSON object that grants ALL to IAM_ALLOWED_PRINCIPALS.

For more information, see Changing the Default Security Settings for Your Data Lake.

Type: Array of PrincipalPermissions objects

Required: No

DataLakeAdmins

A list of AWS Lake Formation principals. Supported principals are IAM users or IAM roles.

Type: Array of DataLakePrincipal objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

ExternalDataFilteringAllowList

A list of the account IDs of AWS accounts with Amazon EMR clusters that are to perform data filtering.>

Type: Array of DataLakePrincipal objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

Parameters

A key-value map that provides an additional configuration on your data lake. CROSS_ACCOUNT_VERSION is the key you can configure in the Parameters field. Accepted values for the CrossAccountVersion key are 1, 2, 3, and 4.

Type: String to string map

Key Length Constraints: Minimum length of 1. Maximum length of 255.

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

Value Length Constraints: Maximum length of 512000.

Required: No

ReadOnlyAdmins

A list of AWS Lake Formation principals with only view access to the resources, without the ability to make changes. Supported principals are IAM users or IAM roles.

Type: Array of DataLakePrincipal objects

Array Members: Minimum number of 0 items. Maximum number of 30 items.

Required: No

TrustedResourceOwners

A list of the resource-owning account IDs that the caller's account can use to share their user access details (user ARNs). The user ARNs can be logged in the resource owner's CloudTrail log.

You may want to specify this property when you are in a high-trust boundary, such as the same team or company.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DataLocationResource

A structure for a data location object where permissions are granted or revoked.

Contents

ResourceArn

The Amazon Resource Name (ARN) that uniquely identifies the data location resource.

Type: String

Required: Yes

CatalogId

The identifier for the Data Catalog where the location is registered with AWS Lake Formation. By default, it is the account ID of the caller.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

DeleteObjectInput

An object to delete from the governed table.

Contents

Uri

The Amazon S3 location of the object to delete.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

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

Required: Yes

ETag

The Amazon S3 ETag of the object. Returned by `GetTableObjects` for validation and used to identify changes to the underlying data.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: No

PartitionValues

A list of partition values for the object. A value must be specified for each partition key associated with the governed table.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Maximum length of 1024.

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

DetailsMap

A structure containing the additional details to be returned in the `AdditionalDetails` attribute of `PrincipalResourcePermissions`.

If a catalog resource is shared through AWS Resource Access Manager (AWS RAM), then there will exist a corresponding AWS RAM resource share ARN.

Contents

ResourceShare

A resource share ARN for a catalog resource shared through AWS RAM.

Type: Array of strings

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

ErrorDetail

Contains details about an error.

Contents

ErrorCode

The code associated with this error.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

ErrorMessage

A message describing the error.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ExecutionStatistics

Statistics related to the processing of a query statement.

Contents

AverageExecutionTimeMillis

The average time the request took to be executed.

Type: Long

Required: No

DataScannedBytes

The amount of data that was scanned in bytes.

Type: Long

Required: No

WorkUnitsExecutedCount

The number of work units executed.

Type: Long

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ExternalFilteringConfiguration

Configuration for enabling external data filtering for third-party applications to access data managed by Lake Formation .

Contents

AuthorizedTargets

List of third-party application ARNs integrated with Lake Formation.

Type: Array of strings

Required: Yes

Status

Allows to enable or disable the third-party applications that are allowed to access data managed by Lake Formation.

Type: String

Valid Values: `ENABLED | DISABLED`

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

FilterCondition

This structure describes the filtering of columns in a table based on a filter condition.

Contents

ComparisonOperator

The comparison operator used in the filter condition.

Type: String

Valid Values: `EQ | NE | LE | LT | GE | GT | CONTAINS | NOT_CONTAINS | BEGINS_WITH | IN | BETWEEN`

Required: No

Field

The field to filter in the filter condition.

Type: String

Valid Values: `RESOURCE_ARN | ROLE_ARN | LAST_MODIFIED`

Required: No

StringValueList

A string with values used in evaluating the filter condition.

Type: Array of strings

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

LakeFormationOptInsInfo

A single principal-resource pair that has Lake Formation permissins enforced.

Contents

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

LastModified

The last modified date and time of the record.

Type: Timestamp

Required: No

LastUpdatedBy

The user who updated the record.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Principal

The AWS Lake Formation principal. Supported principals are IAM users or IAM roles.

Type: DataLakePrincipal object

Required: No

Resource

A structure for the resource.

Type: Resource 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

LFTag

A structure that allows an admin to grant user permissions on certain conditions. For example, granting a role access to all columns that do not have the LF-tag 'PII' in tables that have the LF-tag 'Prod'.

Contents

TagKey

The key-name for the LF-tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

Required: Yes

TagValues

A list of possible values an attribute can take.

The maximum number of values that can be defined for a LF-Tag is 1000. A single API call supports 50 values. You can use multiple API calls to add more values.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

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

LFTagError

A structure containing an error related to a `TagResource` or `UnTagResource` operation.

Contents

Error

An error that occurred with the attachment or detachment of the LF-tag.

Type: ErrorDetail object

Required: No

LFTag

The key-name of the LF-tag.

Type: LFTagPair 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

LFTagExpression

A structure consists LF-Tag expression name and catalog ID.

Contents

CatalogId

The identifier for the Data Catalog. By default, the account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Description

A structure that contains information about the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

Expression

A logical expression composed of one or more LF-Tags.

Type: Array of LFTag objects

Required: No

Name

The name for saved the LF-Tag expression.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

LFTagExpressionResource

A structure containing a LF-Tag expression (keys and values).

Contents

Name

The name of the LF-Tag expression to grant permissions on.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, the account ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

LFTagKeyResource

A structure containing an LF-tag key and values for a resource.

Contents

TagKey

The key-name for the LF-tag.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

TagValues

A list of possible values an attribute can take.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

LFTagPair

A structure containing an LF-tag key-value pair.

Contents

TagKey

The key-name for the LF-tag.

Type: String

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\/=+\-@%]*)$`

Required: Yes

TagValues

A list of possible values an attribute can take.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

Pattern: `^([\p{L}\p{Z}\p{N}_.:\*\/=+\-@%]*)$`

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

LFTagPolicyResource

A structure containing a list of LF-tag conditions or saved LF-Tag expressions that apply to a resource's LF-tag policy.

Contents

ResourceType

The resource type for which the LF-tag policy applies.

Type: String

Valid Values: `DATABASE | TABLE`

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Expression

A list of LF-tag conditions or a saved expression that apply to the resource's LF-tag policy.

Type: Array of LFTag objects

Required: No

ExpressionName

If provided, permissions are granted to the Data Catalog resources whose assigned LF-Tags match the expression body of the saved expression under the provided `ExpressionName`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

PartitionObjects

A structure containing a list of partition values and table objects.

Contents

Objects

A list of table objects

Type: Array of TableObject objects

Required: No

PartitionValues

A list of partition values.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Length Constraints: Maximum length of 1024.

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

PartitionValueList

Contains a list of values defining partitions.

Contents

Values

The list of partition values.

Type: Array of strings

Array Members: Minimum number of 1 item.

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

PlanningStatistics

Statistics related to the processing of a query statement.

Contents

EstimatedDataToScanBytes

An estimate of the data that was scanned in bytes.

Type: Long

Required: No

PlanningTimeMillis

The time that it took to process the request.

Type: Long

Required: No

QueueTimeMillis

The time the request was in queue to be processed.

Type: Long

Required: No

WorkUnitsGeneratedCount

The number of work units generated.

Type: Long

Required: No

See Also

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

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

PrincipalPermissions

Permissions granted to a principal.

Contents

Permissions

The permissions that are granted to the principal.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

Principal

The principal who is granted permissions.

Type: DataLakePrincipal 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

PrincipalResourcePermissions

The permissions granted or revoked on a resource.

Contents

AdditionalDetails

This attribute can be used to return any additional details of `PrincipalResourcePermissions`. Currently returns only as a AWS RAM resource share ARN.

Type: DetailsMap object

Required: No

Condition

A Lake Formation condition, which applies to permissions and opt-ins that contain an expression.

Type: Condition object

Required: No

LastUpdated

The date and time when the resource was last updated.

Type: Timestamp

Required: No

LastUpdatedBy

The user who updated the record.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Permissions

The permissions to be granted or revoked on the resource.

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

PermissionsWithGrantOption

Indicates whether to grant the ability to grant permissions (as a subset of permissions granted).

Type: Array of strings

Valid Values: `ALL | SELECT | ALTER | DROP | DELETE | INSERT | DESCRIBE | CREATE_DATABASE | CREATE_TABLE | DATA_LOCATION_ACCESS | CREATE_LF_TAG | ASSOCIATE | GRANT_WITH_LF_TAG_EXPRESSION | CREATE_LF_TAG_EXPRESSION | CREATE_CATALOG | SUPER_USER`

Required: No

Principal

The Data Lake principal to be granted or revoked permissions.

Type: DataLakePrincipal object

Required: No

Resource

The resource where permissions are to be granted or revoked.

Type: Resource 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

QueryPlanningContext

A structure containing information about the query plan.

Contents

DatabaseName

The database containing the table.

Type: String

Length Constraints: Minimum length of 1.

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

Required: Yes

CatalogId

The ID of the Data Catalog where the partition in question resides. If none is provided, the AWS account ID is used by default.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

QueryAsOfTime

The time as of when to read the table contents. If not set, the most recent transaction commit time will be used. Cannot be specified along with `TransactionId`.

Type: Timestamp

Required: No

QueryParameters

A map consisting of key-value pairs.

Type: String to string map

Required: No

TransactionId

The transaction ID at which to read the table contents. If this transaction is not committed, the read will be treated as part of that transaction and will see its writes. If this transaction has aborted, an error will be returned. If not set, defaults to the most recent committed transaction. Cannot be specified along with `QueryAsOfTime`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

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

QuerySessionContext

A structure used as a protocol between query engines and Lake Formation or AWS Glue. Contains both a Lake Formation generated authorization identifier and information from the request's authorization context.

For more information about how to utilize QuerySessionContext, see Lake Formation workflow for application integration API operations in the developer guide.

Contents

AdditionalContext

An opaque string-string map passed by the query engine.

Type: String to string map

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

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

Required: No

ClusterId

An identifier string for the consumer cluster.

Type: String

Required: No

QueryAuthorizationId

A cryptographically generated query identifier generated by AWS Glue or Lake Formation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

QueryId

A unique identifier generated by the query engine for the query.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

QueryStartTime

A timestamp provided by the query engine for when the query started.

Type: Timestamp

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

RedshiftConnect

Configuration for enabling trusted identity propagation with Redshift Connect.

Contents

Authorization

The authorization status for Redshift Connect. Valid values are ENABLED or DISABLED.

Type: String

Valid Values: `ENABLED | DISABLED`

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

RedshiftScopeUnion

A union structure representing different Redshift integration scopes.

Contents

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

RedshiftConnect

Configuration for Redshift Connect integration.

Type: RedshiftConnect 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

Resource

A structure for the resource.

Contents

Catalog

The identifier for the Data Catalog. By default, the account ID. The Data Catalog is the persistent metadata store. It contains database definitions, table definitions, and other control information to manage your AWS Lake Formation environment.

Type: CatalogResource object

Required: No

Database

The database for the resource. Unique to the Data Catalog. A database is a set of associated table definitions organized into a logical group. You can Grant and Revoke database permissions to a principal.

Type: DatabaseResource object

Required: No

DataCellsFilter

A data cell filter.

Type: DataCellsFilterResource object

Required: No

DataLocation

The location of an Amazon S3 path where permissions are granted or revoked.

Type: DataLocationResource object

Required: No

LFTag

The LF-Tag key and values attached to a resource.

Type: LFTagKeyResource object

Required: No

LFTagExpression

LF-Tag expression resource. A logical expression composed of one or more LF-Tag key:value pairs.

Type: LFTagExpressionResource object

Required: No

LFTagPolicy

A list of LF-tag conditions or saved LF-Tag expressions that define a resource's LF-tag policy.

Type: LFTagPolicyResource object

Required: No

Table

The table for the resource. A table is a metadata definition that represents your data. You can Grant and Revoke table privileges to a principal.

Type: TableResource object

Required: No

TableWithColumns

The table with columns for the resource. A principal with permissions to this resource can select metadata from the columns of a table in the Data Catalog and the underlying data in Amazon S3.

Type: TableWithColumnsResource 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

ResourceInfo

A structure containing information about an AWS Lake Formation resource.

Contents

ExpectedResourceOwnerAccount

The AWS account that owns the AWS Glue tables associated with specific Amazon S3 locations.

Type: String

Pattern: `^\d{12}$`

Required: No

HybridAccessEnabled

Indicates whether the data access of tables pointing to the location can be managed by both Lake Formation permissions as well as Amazon S3 bucket policies.

Type: Boolean

Required: No

LastModified

The date and time the resource was last modified.

Type: Timestamp

Required: No

ResourceArn

The Amazon Resource Name (ARN) of the resource.

Type: String

Required: No

RoleArn

The IAM role that registered a resource.

Type: String

Pattern: `arn:aws:iam::[0-9]*:role/.*`

Required: No

VerificationStatus

Indicates whether the registered role has sufficient permissions to access registered Amazon S3 location. Verification Status can be one of the following:

- VERIFIED - Registered role has sufficient permissions to access registered Amazon S3 location.
- NOT_VERIFIED - Registered role does not have sufficient permissions to access registered Amazon S3 location.
- VERIFICATION_FAILED - Unable to verify if the registered role can access the registered Amazon S3 location.

Type: String

Valid Values: `VERIFIED | VERIFICATION_FAILED | NOT_VERIFIED`

Required: No

WithFederation

Whether or not the resource is a federated resource.

Type: Boolean

Required: No

WithPrivilegedAccess

Grants the calling principal the permissions to perform all supported Lake Formation operations on the registered data location.

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

RowFilter

A PartiQL predicate.

Contents

AllRowsWildcard

A wildcard for all rows.

Type: AllRowsWildcard object

Required: No

FilterExpression

A filter expression.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 2048.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

ServiceIntegrationUnion

A union structure representing different service integration types.

Contents

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

Redshift

Redshift service integration configuration.

Type: Array of RedshiftScopeUnion objects

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StorageOptimizer

A structure describing the configuration and details of a storage optimizer.

Contents

Config

A map of the storage optimizer configuration. Currently contains only one key-value pair: `is_enabled` indicates true or false for acceleration.

Type: String to string map

Required: No

ErrorMessage

A message that contains information about any error (if present).

When an acceleration result has an enabled status, the error message is empty.

When an acceleration result has a disabled status, the message describes an error or simply indicates "disabled by the user".

Type: String

Required: No

LastRunDetails

When an acceleration result has an enabled status, contains the details of the last job run.

Type: String

Required: No

StorageOptimizerType

The specific type of storage optimizer. The supported value is `compaction`.

Type: String

Valid Values: `COMPACTION | GARBAGE_COLLECTION | ALL`

Required: No

Warnings

A message that contains information about any warnings (if present).

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

TableObject

Specifies the details of a governed table.

Contents

ETag

The Amazon S3 ETag of the object. Returned by `GetTableObjects` for validation and used to identify changes to the underlying data.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: No

Size

The size of the Amazon S3 object in bytes.

Type: Long

Required: No

Uri

The Amazon S3 location of the object.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

TableResource

A structure for the table object. A table is a metadata definition that represents your data. You can Grant and Revoke table privileges to a principal.

Contents

DatabaseName

The name of the database for the table. Unique to a Data Catalog. A database is a set of associated table definitions organized into a logical group. You can Grant and Revoke database privileges to a principal.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, it is the account ID of the caller.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

Name

The name of the table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

TableWildcard

A wildcard object representing every table under a database.

At least one of `TableResource$Name` or `TableResource$TableWildcard` is required.

Type: TableWildcard 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

TableWildcard

A wildcard object representing every table under a database.

Contents

The members of this exception structure are context-dependent.

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

TableWithColumnsResource

A structure for a table with columns object. This object is only used when granting a SELECT permission.

This object must take a value for at least one of `ColumnsNames`, `ColumnsIndexes`, or `ColumnsWildcard`.

Contents

DatabaseName

The name of the database for the table with columns resource. Unique to the Data Catalog. A database is a set of associated table definitions organized into a logical group. You can Grant and Revoke database privileges to a principal.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

Name

The name of the table resource. A table is a metadata definition that represents your data. You can Grant and Revoke table privileges to a principal.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: Yes

CatalogId

The identifier for the Data Catalog. By default, it is the account ID of the caller.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

ColumnNames

The list of column names for the table. At least one of `ColumnNames` or `ColumnWildcard` is required.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 255.

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

Required: No

ColumnWildcard

A wildcard specified by a `ColumnWildcard` object. At least one of `ColumnNames` or `ColumnWildcard` is required.

Type: ColumnWildcard 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

TaggedDatabase

A structure describing a database resource with LF-tags.

Contents

Database

A database that has LF-tags attached to it.

Type: DatabaseResource object

Required: No

LFTags

A list of LF-tags attached to the database.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

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

TaggedTable

A structure describing a table resource with LF-tags.

Contents

LFTagOnDatabase

A list of LF-tags attached to the database where the table resides.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: No

LFTagsOnColumns

A list of LF-tags attached to columns in the table.

Type: Array of ColumnLFTag objects

Required: No

LFTagsOnTable

A list of LF-tags attached to the table.

Type: Array of LFTagPair objects

Array Members: Minimum number of 1 item. Maximum number of 50 items.

Required: No

Table

A table that has LF-tags attached to it.

Type: TableResource 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

TemporaryCredentials

A temporary set of credentials for an AWS Lake Formation user. These credentials are scoped down to only access the raw data sources that the user has access to.

The temporary security credentials consist of an access key and a session token. The access key consists of an access key ID and a secret key. When the credentials are created, they are associated with an IAM access control policy that limits what the user can do when using the credentials.

Contents

AccessKeyId

The access key ID for the temporary credentials.

Type: String

Required: No

Expiration

The date and time when the temporary credentials expire.

Type: Timestamp

Required: No

SecretAccessKey

The secret key for the temporary credentials.

Type: String

Required: No

SessionToken

The session token for the temporary credentials.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

TransactionDescription

A structure that contains information about a transaction.

Contents

TransactionEndTime

The time when the transaction committed or aborted, if it is not currently active.

Type: Timestamp

Required: No

TransactionId

The ID of the transaction.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

Required: No

TransactionStartTime

The time when the transaction started.

Type: Timestamp

Required: No

TransactionStatus

A status of ACTIVE, COMMITTED, or ABORTED.

Type: String

Valid Values: `ACTIVE | COMMITTED | ABORTED | COMMIT_IN_PROGRESS`

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

VirtualObject

An object that defines an Amazon S3 object to be deleted if a transaction cancels, provided that `VirtualPut` was called before writing the object.

Contents

Uri

The path to the Amazon S3 object. Must start with s3://

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

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

Required: Yes

ETag

The ETag of the Amazon S3 object.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[\p{L}\p{N}\p{P}]*`

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

WorkUnitRange

Defines the valid range of work unit IDs for querying the execution service.

Contents

WorkUnitIdMax

Defines the maximum work unit ID in the range. The maximum value is inclusive.

Type: Long

Required: Yes

WorkUnitIdMin

Defines the minimum work unit ID in the range.

Type: Long

Required: Yes

WorkUnitToken

A work token used to query the execution service.

Type: String

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

WriteOperation

Defines an object to add to or delete from a governed table.

Contents

AddObject

A new object to add to the governed table.

Type: AddObjectInput object

Required: No

DeleteObject

An object to delete from the governed table.

Type: DeleteObjectInput 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

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signing AWS API requests in the *IAM User Guide*.

X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: *access_key*/*YYYYMMDD*/*region*/*service*/aws4_request.

For more information, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see Elements of an AWS API request signature in the *IAM User Guide*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS STS, see AWS services that work with IAM in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

Common Error Types

This section lists common error types that this AWS service may return. Not all services return all error types listed here. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You don't have permission to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 403

ExpiredTokenException

The security token included in the request has expired. Request a new security token and try again.

HTTP Status Code: 403

IncompleteSignature

The request signature doesn't conform to AWS standards. Verify that you're using valid AWS credentials and that your request is properly formatted. If you're using an SDK, ensure it's up to date.

HTTP Status Code: 403

InternalFailure

The request can't be processed right now because of an internal server issue. Try again later. If the problem persists, contact AWS Support.

HTTP Status Code: 500

MalformedHttpRequestException

The request body can't be processed. This typically happens when the request body can't be decompressed using the specified content encoding algorithm. Verify that the content encoding header matches the compression format used.

HTTP Status Code: 400

NotAuthorized

You don't have permissions to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 401

OptInRequired

Your AWS account needs a subscription for this service. Verify that you've enabled the service in your account.

HTTP Status Code: 403

RequestAbortedException

The request was aborted before a response could be returned. This typically happens when the client closes the connection.

HTTP Status Code: 400

RequestEntityTooLargeException

The request entity is too large. Reduce the size of the request body and try again.

HTTP Status Code: 413

RequestTimeoutException

The request timed out. The server didn't receive the complete request within the expected time frame. Try again.

HTTP Status Code: 408

ServiceUnavailable

The service is temporarily unavailable. Try again later.

HTTP Status Code: 503

ThrottlingException

Your request rate is too high. The AWS SDKs automatically retry requests that receive this exception. Reduce the frequency of requests.

HTTP Status Code: 400

UnknownOperationException

The action or operation isn't recognized. Verify that the action name is spelled correctly and that it's supported by the API version you're using.

HTTP Status Code: 404

UnrecognizedClientException

The X.509 certificate or AWS access key ID you provided doesn't exist in our records. Verify that you're using valid credentials and that they haven't expired.

HTTP Status Code: 403

ValidationError

The input doesn't meet the required format or constraints. Check that all required parameters are included and that values are valid.

HTTP Status Code: 400