

Lake Formation



Lake Formation: API Reference

Table of Contents

Welcome	1
Actions	2
AddLFTagsToResource	5
Request Syntax	5
URI Request Parameters	6
Request Body	6
Response Syntax	7
Response Elements	8
Errors	8
See Also	9
AssumeDecoratedRoleWithSAML	11
Request Syntax	11
URI Request Parameters	11
Request Body	12
Response Syntax	13
Response Elements	13
Errors	14
See Also	15
BatchGrantPermissions	16
Request Syntax	16
URI Request Parameters	17
Request Body	18
Response Syntax	18
Response Elements	20
Errors	20
See Also	21
BatchRevokePermissions	22
Request Syntax	22
URI Request Parameters	23
Request Body	24
Response Syntax	24
Response Elements	26
Errors	26
See Also	27

CancelTransaction	28
Request Syntax	28
URI Request Parameters	28
Request Body	28
Response Syntax	28
Response Elements	28
Errors	29
See Also	30
CommitTransaction	32
Request Syntax	32
URI Request Parameters	32
Request Body	32
Response Syntax	32
Response Elements	33
Errors	33
See Also	34
CreateDataCellsFilter	36
Request Syntax	36
URI Request Parameters	36
Request Body	36
Response Syntax	37
Response Elements	37
Errors	37
See Also	38
CreateLakeFormationIdentityCenterConfiguration	40
Request Syntax	40
URI Request Parameters	40
Request Body	40
Response Syntax	42
Response Elements	42
Errors	42
Examples	44
See Also	45
CreateLakeFormationOptIn	46
Request Syntax	46
URI Request Parameters	47

Request Body	47
Response Syntax	48
Response Elements	48
Errors	48
See Also	50
CreateLFTag	51
Request Syntax	51
URI Request Parameters	51
Request Body	51
Response Syntax	52
Response Elements	52
Errors	52
See Also	54
CreateLFTagExpression	55
Request Syntax	55
URI Request Parameters	55
Request Body	55
Response Syntax	57
Response Elements	57
Errors	57
Examples	58
See Also	59
DeleteDataCellsFilter	60
Request Syntax	60
URI Request Parameters	60
Request Body	60
Response Syntax	61
Response Elements	61
Errors	61
See Also	63
DeleteLakeFormationIdentityCenterConfiguration	64
Request Syntax	64
URI Request Parameters	64
Request Body	64
Response Syntax	64
Response Elements	65

Errors	65
See Also	66
DeleteLakeFormationOptIn	67
Request Syntax	67
URI Request Parameters	68
Request Body	68
Response Syntax	69
Response Elements	69
Errors	69
See Also	71
DeleteLFTag	72
Request Syntax	72
URI Request Parameters	72
Request Body	72
Response Syntax	73
Response Elements	73
Errors	73
See Also	74
DeleteLFTagExpression	76
Request Syntax	76
URI Request Parameters	76
Request Body	76
Response Syntax	77
Response Elements	77
Errors	77
Examples	78
See Also	79
DeleteObjectsOnCancel	80
Request Syntax	80
URI Request Parameters	80
Request Body	80
Response Syntax	82
Response Elements	82
Errors	82
See Also	84
DeregisterResource	85

Request Syntax	85
URI Request Parameters	85
Request Body	85
Response Syntax	85
Response Elements	85
Errors	86
See Also	86
DescribeLakeFormationIdentityCenterConfiguration	88
Request Syntax	88
URI Request Parameters	88
Request Body	88
Response Syntax	88
Response Elements	89
Errors	90
Examples	92
See Also	92
DescribeResource	94
Request Syntax	94
URI Request Parameters	94
Request Body	94
Response Syntax	94
Response Elements	95
Errors	95
See Also	96
DescribeTransaction	97
Request Syntax	97
URI Request Parameters	97
Request Body	97
Response Syntax	97
Response Elements	98
Errors	98
See Also	99
ExtendTransaction	100
Request Syntax	100
URI Request Parameters	100
Request Body	100

Response Syntax	100
Response Elements	101
Errors	101
See Also	102
GetDataCellsFilter	104
Request Syntax	104
URI Request Parameters	104
Request Body	104
Response Syntax	105
Response Elements	106
Errors	106
See Also	107
GetDataLakePrincipal	109
Request Syntax	109
URI Request Parameters	109
Request Body	109
Response Syntax	109
Response Elements	109
Errors	109
Examples	110
See Also	110
GetDataLakeSettings	112
Request Syntax	112
URI Request Parameters	112
Request Body	112
Response Syntax	112
Response Elements	114
Errors	114
See Also	115
GetEffectivePermissionsForPath	116
Request Syntax	116
URI Request Parameters	116
Request Body	116
Response Syntax	117
Response Elements	119
Errors	119

See Also	120
GetLFTag	122
Request Syntax	122
URI Request Parameters	122
Request Body	122
Response Syntax	123
Response Elements	123
Errors	124
See Also	125
GetLFTagExpression	126
Request Syntax	126
URI Request Parameters	126
Request Body	126
Response Syntax	127
Response Elements	127
Errors	128
Examples	129
See Also	130
GetQueryState	131
Request Syntax	131
URI Request Parameters	131
Request Body	131
Response Syntax	131
Response Elements	132
Errors	132
See Also	133
GetQueryStatistics	134
Request Syntax	134
URI Request Parameters	134
Request Body	134
Response Syntax	134
Response Elements	135
Errors	135
See Also	137
GetResourceLFTags	138
Request Syntax	138

URI Request Parameters	139
Request Body	139
Response Syntax	140
Response Elements	141
Errors	141
See Also	143
GetTableObjects	144
Request Syntax	144
URI Request Parameters	144
Request Body	144
Response Syntax	146
Response Elements	147
Errors	147
See Also	149
GetTemporaryDataLocationCredentials	150
Request Syntax	150
URI Request Parameters	150
Request Body	151
Response Syntax	152
Response Elements	152
Errors	153
See Also	154
GetTemporaryGluePartitionCredentials	156
Request Syntax	156
URI Request Parameters	156
Request Body	156
Response Syntax	158
Response Elements	158
Errors	159
See Also	160
GetTemporaryGlueTableCredentials	162
Request Syntax	162
URI Request Parameters	162
Request Body	162
Response Syntax	164
Response Elements	164

Errors	165
See Also	167
GetWorkUnitResults	168
Request Syntax	168
URI Request Parameters	168
Request Body	168
Response Syntax	169
Response Elements	169
Errors	169
See Also	170
GetWorkUnits	172
Request Syntax	172
URI Request Parameters	172
Request Body	172
Response Syntax	173
Response Elements	173
Errors	174
See Also	175
GrantPermissions	176
Request Syntax	176
URI Request Parameters	177
Request Body	177
Response Syntax	179
Response Elements	179
Errors	179
See Also	180
ListDataCellsFilter	182
Request Syntax	182
URI Request Parameters	182
Request Body	182
Response Syntax	183
Response Elements	183
Errors	184
See Also	185
ListLakeFormationOptIns	186
Request Syntax	186

URI Request Parameters	187
Request Body	187
Response Syntax	188
Response Elements	190
Errors	190
See Also	191
ListLFTagExpressions	193
Request Syntax	193
URI Request Parameters	193
Request Body	193
Response Syntax	194
Response Elements	194
Errors	195
Examples	196
See Also	197
ListLFTags	198
Request Syntax	198
URI Request Parameters	198
Request Body	198
Response Syntax	199
Response Elements	200
Errors	200
See Also	201
ListPermissions	203
Request Syntax	203
URI Request Parameters	205
Request Body	205
Response Syntax	207
Response Elements	208
Errors	209
See Also	210
ListResources	211
Request Syntax	211
URI Request Parameters	211
Request Body	211
Response Syntax	212

Response Elements	212
Errors	213
See Also	213
ListTableStorageOptimizers	215
Request Syntax	215
URI Request Parameters	215
Request Body	215
Response Syntax	217
Response Elements	217
Errors	217
See Also	218
ListTransactions	220
Request Syntax	220
URI Request Parameters	220
Request Body	220
Response Syntax	221
Response Elements	222
Errors	222
See Also	223
PutDataLakeSettings	224
Request Syntax	224
URI Request Parameters	225
Request Body	225
Response Syntax	226
Response Elements	226
Errors	226
See Also	226
RegisterResource	228
Request Syntax	228
URI Request Parameters	228
Request Body	228
Response Syntax	230
Response Elements	230
Errors	230
See Also	232
RemoveLFTagsFromResource	233

Request Syntax	233
URI Request Parameters	234
Request Body	234
Response Syntax	235
Response Elements	236
Errors	236
See Also	238
RevokePermissions	239
Request Syntax	239
URI Request Parameters	240
Request Body	240
Response Syntax	242
Response Elements	242
Errors	242
See Also	243
SearchDatabasesByLFTags	244
Request Syntax	244
URI Request Parameters	244
Request Body	244
Response Syntax	245
Response Elements	246
Errors	246
See Also	248
SearchTablesByLFTags	249
Request Syntax	249
URI Request Parameters	249
Request Body	249
Response Syntax	250
Response Elements	251
Errors	252
See Also	253
StartQueryPlanning	254
Request Syntax	254
URI Request Parameters	254
Request Body	254
Response Syntax	255

Response Elements	255
Errors	255
See Also	256
StartTransaction	258
Request Syntax	258
URI Request Parameters	258
Request Body	258
Response Syntax	258
Response Elements	259
Errors	259
See Also	260
UpdateDataCellsFilter	261
Request Syntax	261
URI Request Parameters	261
Request Body	261
Response Syntax	262
Response Elements	262
Errors	262
See Also	263
UpdateLakeFormationIdentityCenterConfiguration	265
Request Syntax	265
URI Request Parameters	265
Request Body	265
Response Syntax	267
Response Elements	267
Errors	267
See Also	268
UpdateLFTag	270
Request Syntax	270
URI Request Parameters	270
Request Body	270
Response Syntax	271
Response Elements	272
Errors	272
See Also	273
UpdateLFTagExpression	274

Request Syntax	274
URI Request Parameters	274
Request Body	274
Response Syntax	275
Response Elements	275
Errors	276
Examples	277
See Also	278
UpdateResource	279
Request Syntax	279
URI Request Parameters	279
Request Body	279
Response Syntax	280
Response Elements	280
Errors	280
See Also	281
UpdateTableObjects	283
Request Syntax	283
URI Request Parameters	283
Request Body	283
Response Syntax	285
Response Elements	285
Errors	285
See Also	287
UpdateTableStorageOptimizer	288
Request Syntax	288
URI Request Parameters	288
Request Body	288
Response Syntax	289
Response Elements	289
Errors	290
See Also	291
Data Types	292
AddObjectInput	295
Contents	295
See Also	296

AllRowsWildcard	297
Contents	297
See Also	297
AuditContext	298
Contents	298
See Also	298
BatchPermissionsFailureEntry	299
Contents	299
See Also	299
BatchPermissionsRequestEntry	300
Contents	300
See Also	301
CatalogResource	302
Contents	302
See Also	302
ColumnLFTag	303
Contents	303
See Also	303
ColumnWildcard	304
Contents	304
See Also	304
Condition	305
Contents	305
See Also	305
DatabaseResource	306
Contents	306
See Also	306
DataCellsFilter	307
Contents	307
See Also	309
DataCellsFilterResource	310
Contents	310
See Also	311
DataLakePrincipal	312
Contents	312
See Also	312

DataLakeSettings	313
Contents	313
See Also	316
DataLocationResource	317
Contents	317
See Also	317
DeleteObjectInput	318
Contents	318
See Also	319
DetailsMap	320
Contents	320
See Also	320
ErrorDetail	321
Contents	321
See Also	321
ExecutionStatistics	322
Contents	322
See Also	322
ExternalFilteringConfiguration	323
Contents	323
See Also	323
FilterCondition	324
Contents	324
See Also	324
LakeFormationOptInsInfo	326
Contents	326
See Also	327
LFTag	328
Contents	328
See Also	328
LFTagError	330
Contents	330
See Also	330
LFTagExpression	331
Contents	331
See Also	332

LFTagExpressionResource	333
Contents	333
See Also	333
LFTagKeyResource	334
Contents	334
See Also	335
LFTagPair	336
Contents	336
See Also	337
LFTagPolicyResource	338
Contents	338
See Also	339
PartitionObjects	340
Contents	340
See Also	340
PartitionValueList	341
Contents	341
See Also	341
PlanningStatistics	342
Contents	342
See Also	342
PrincipalPermissions	344
Contents	344
See Also	344
PrincipalResourcePermissions	345
Contents	345
See Also	347
QueryPlanningContext	348
Contents	348
See Also	349
QuerySessionContext	350
Contents	350
See Also	351
RedshiftConnect	352
Contents	352
See Also	352

RedshiftScopeUnion	353
Contents	353
See Also	353
Resource	354
Contents	354
See Also	355
ResourceInfo	357
Contents	357
See Also	358
RowFilter	360
Contents	360
See Also	360
ServiceIntegrationUnion	361
Contents	361
See Also	361
StorageOptimizer	362
Contents	362
See Also	363
TableObject	364
Contents	364
See Also	364
TableResource	366
Contents	366
See Also	367
TableWildcard	368
Contents	368
See Also	368
TableWithColumnsResource	369
Contents	369
See Also	370
TaggedDatabase	371
Contents	371
See Also	371
TaggedTable	372
Contents	372
See Also	372

TemporaryCredentials	374
Contents	374
See Also	375
TransactionDescription	376
Contents	376
See Also	377
VirtualObject	378
Contents	378
See Also	378
WorkUnitRange	379
Contents	379
See Also	379
WriteOperation	380
Contents	380
See Also	380
Common Parameters	381
Common Error Types	384

Welcome

Defines the public endpoint for the Amazon Lake Formation service.

This document was last published on April 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 Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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.


```
"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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)

- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)

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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\t]*`

Required: No

ExternalFiltering

A list of the account IDs of Amazon 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 Amazon Service Namespaces in the Amazon 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 Amazon account IDs and/or Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

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

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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: $^([\p{L}\p{Z}\p{N}_\cdot:\backslash/=+\backslash-\@%]^*)\$$

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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon 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-\uFFFF\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-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\uFFFF\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-\uFFFF\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 Amazon account IDs or Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)

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

DescribeResource

Retrieves the current data access role for the given resource registered in Amazon 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

InternalServerError

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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-\uFFFF\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-\uFFFF\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-\uFFFF\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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

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


```
"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 Amazon SDKs, see the following:

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

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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)

- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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: $^([\backslash\{L\}\backslash\{Z\}\backslash\{N\}_\cdot\cdot\:/\=/+\backslash-\@\%]*)\$$

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 Amazon Lake Formation environment.

Type: String

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

Pattern: $[\backslash\{u0020-\backslash\{uD7FF\}\backslash\{uE000-\backslash\{uFFFF\}\}\backslash\{uD800\}\backslash\{uDC00-\backslash\{uDBFF\}\}\backslash\{uDFFF\}\{t\}]*$

TagKey

The key-name for the LF-tag.

Type: String

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

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

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

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 Amazon SDKs, see the following:

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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-\uFFFF\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-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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 Amazon SDKs, see the following:

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

DatabaseName

The database containing the governed table.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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-\\uFFFF\\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-\\uFFFF\\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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon 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 Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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, Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon service, retrieving fewer items in each call. This can help prevent the Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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. Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 permissions 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)

- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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": "ExampleNa0ZYUnpkWZVWk5TRFpaVA=="  
}
```

See Also

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

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

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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](#).

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

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

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 Amazon SDKs, see the following:

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

PutDataLakeSettings

Sets the list of data lake administrators who have admin privileges on all resources managed by Amazon 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": [
```


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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

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

RegisterResource

Registers the resource as managed by the Data Catalog.

To add or update data, Amazon 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 Amazon account that owns the Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\\u0020-\\uD7FF\\uE000-\\uFFFF\\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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)

- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)

- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\t]*`

Required: No

ExternalFiltering

A list of the account IDs of Amazon 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 Amazon account IDs or Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)

- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

Pattern: `[\\u0020-\\uD7FF\\uE000-\\uFFFF\\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: $^([\p{L}\p{Z}\p{N}_\cdot:\backslash/=+\backslash-@%]^*)\$$

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

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

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\\uFFFF\\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 Amazon SDKs, see the following:

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

UpdateResource

Updates the data access role used for vending access to the given (registered) resource in Amazon 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 Amazon account that owns the Amazon 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

InternalServerErrorException

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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)

- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon Command Line Interface V2](#)
- [Amazon SDK for .NET V4](#)
- [Amazon SDK for C++](#)
- [Amazon SDK for Go v2](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for JavaScript V3](#)
- [Amazon SDK for Kotlin](#)
- [Amazon SDK for PHP V3](#)
- [Amazon SDK for Python](#)
- [Amazon 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-\uFFFF\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-\uFFFF\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-\uFFFF\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 or 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 Amazon SDKs, see the following:

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

Data Types

The Amazon 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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\t]*`

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\t]*`

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

DataCellsFilter

A structure that describes certain columns on certain rows.

Contents

DatabaseName

A database in the Amazon Glue Data Catalog.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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-\uFFFF\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-\uFFFF\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-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

DataCellsFilterResource

A structure for a data cells filter resource.

Contents

DatabaseName

A database in the Amazon Glue Data Catalog.

Type: String

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

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

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

DataLakePrincipal

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

Contents

DataLakePrincipalIdentifier

An identifier for the Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

DataLakeSettings

A structure representing a list of Amazon 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 Amazon 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 Amazon 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 Amazon 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 Amazon 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-\u007F\u00E0-\u00FF\u0080-\u00FF\u00DC-\u00FF\u00t]*`

Value Length Constraints: Maximum length of 512000.

Required: No

ReadOnlyAdmins

A list of Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon Resource Access Manager (Amazon RAM), then there will exist a corresponding Amazon RAM resource share ARN.

Contents

ResourceShare

A resource share ARN for a catalog resource shared through Amazon RAM.

Type: Array of strings

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)

- [Amazon SDK for Ruby V3](#)

LakeFormationOptInsInfo

A single principal-resource pair that has Lake Formation permissions 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\t]*`

Required: No

Principal

The Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\t]*`

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\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 Amazon Lake Formation environment.

Type: String

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

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

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

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

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon Lake Formation environment.

Type: String

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

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

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)

- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon 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-\\uFFFF\\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\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 Amazon account ID is used by default.

Type: String

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

Pattern: `[\u0020-\uD7FF\uE000-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

ResourceInfo

A structure containing information about an Amazon Lake Formation resource.

Contents

ExpectedResourceOwnerAccount

The Amazon account that owns the Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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: `COMPACTTION` | `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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\uD800\uDC00-\uDBFF\uDFFF\r\n\t]*`

Required: No

See Also

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

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\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-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\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-\uFFFF\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-\uFFFF\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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon SDK for Ruby V3](#)

TemporaryCredentials

A temporary set of credentials for an Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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-\uFFFF\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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon SDKs, see the following:

- [Amazon SDK for C++](#)
- [Amazon SDK for Java V2](#)
- [Amazon 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 Amazon 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 Amazon 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 Amazon 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 Amazon Security Token Service (Amazon STS). For a list of services that support temporary security credentials from Amazon STS, see [Amazon Web Services services that work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from Amazon 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 Amazon 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 Amazon 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 Amazon standards. Verify that you're using valid Amazon 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 Amazon 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 Amazon 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 Amazon 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 Amazon 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