Amazon Redshift Data API

API Reference

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aws

Amazon Redshift Data API: API Reference

Table of Contents

Welcome

You can use the Amazon Redshift Data API to run queries on Amazon Redshift tables. You can run SQL statements, which are committed if the statement succeeds.

For more information about the Amazon Redshift Data API, see Using the Amazon Redshift Data API in the *Amazon Redshift Cluster Management Guide*.

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Actions

The following actions are supported:

BatchExecuteStatement

Runs one or more SQL statements, which can be data manipulation language (DML) or data definition language (DDL). Depending on the authorization method, use one of the following combinations of request parameters:

- AWS Secrets Manager - specify the Amazon Resource Name (ARN) of the secret, the database name, and the cluster identifier that matches the cluster in the secret.
- Temporary credentials - specify the cluster identifier, the database name, and the database user name. Permission to call the `redshift:GetClusterCredentials` operation is required to use this method.

Request Syntax

```
{
    "ClusterIdentifier": "string",
    "Database": "string",
    "DbUser": "string",
    "SecretArn": "string",
    "Sqls": [ "string" ],
    "StatementName": "string",
    "WithEvent": boolean
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

> **Note**
> In the following list, the required parameters are described first.

ClusterIdentifier (p. 3)

The cluster identifier. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Database (p. 3)

The name of the database. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Sqls (p. 3)

One or more SQL statements to run.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 40 items.

Required: Yes

DbUser (p. 3)

The database user name. This parameter is required when authenticating using temporary credentials.

Type: String

Required: No

SecretArn (p. 3)

The name or ARN of the secret that enables access to the database. This parameter is required when authenticating using AWS Secrets Manager.

Type: String

Required: No

StatementName (p. 3)

The name of the SQL statements. You can name the SQL statements when you create them to identify the query.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 500.

Required: No

WithEvent (p. 3)

A value that indicates whether to send an event to the Amazon EventBridge event bus after the SQL statements run.

Type: Boolean

Required: No

Response Syntax

```
{
    "ClusterIdentifier": "string",
    "CreatedAt": number,
    "Database": "string",
    "DbUser": "string",
    "Id": "string",
    "SecretArn": "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.

ClusterIdentifier (p. 4)

The cluster identifier.

Type: String

CreatedAt (p. 4)

The date and time (UTC) the statement was created.

Type: Timestamp

Database (p. 4)

The name of the database.

Type: String

DbUser (p. 4)

The database user name.

Type: String

Id (p. 4)

The identifier of the SQL statement whose results are to be fetched. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API. This identifier is returned by `BatchExecuteStatment`.

Type: String

Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

SecretArn (p. 4)

The name or ARN of the secret that enables access to the database.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

ActiveStatementsExceededException

The number of active statements exceeds the limit.

HTTP Status Code: 400

BatchExecuteStatementException

An SQL statement encountered an environmental error while running.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface

- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

CancelStatement

Cancels a running query. To be canceled, a query must be running.

Request Syntax

```
{
    "Id": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

Id (p. 7)

The identifier of the SQL statement to cancel. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API. This identifier is returned by `BatchExecuteStatment`, `ExecuteStatment`, and `ListStatements`.

Type: String

Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

Required: Yes

Response Syntax

```
{
    "Status": 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.

Status (p. 7)

A value that indicates whether the cancel statement succeeded (true).

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ResourceNotFoundException

The Amazon Redshift Data API operation failed due to a missing resource.

HTTP Status Code: 400

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DescribeStatement

Describes the details about a specific instance when a query was run by the Amazon Redshift Data API. The information includes when the query started, when it finished, the query status, the number of rows returned, and the SQL statement.

Request Syntax

```
{
    "Id": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

Id (p. 9)

The identifier of the SQL statement to describe. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API. A suffix indicates the number of the SQL statement. For example, `d9b6c0c9-0747-4bf4-b142-e8883122f766:2` has a suffix of `:2` that indicates the second SQL statement of a batch query. This identifier is returned by `BatchExecuteStatment`, `ExecuteStatement`, and `ListStatements`.

Type: String

Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

Required: Yes

Response Syntax

```
{
    "ClusterIdentifier": "string",
    "CreatedAt": number,
    "Database": "string",
    "DbUser": "string",
    "Duration": number,
    "Error": "string",
    "HasResultSet": boolean,
    "Id": "string",
    "QueryParameters": [
        {
            "name": "string",
            "value": "string"
        }
    ],
    "QueryString": "string",
    "RedshiftPid": number,
    "RedshiftQueryId": number,
```

```
        "ResultRows": number,
        "ResultSize": number,
        "SecretArn": "string",
        "Status": "string",
        "SubStatements": [
            {
                "CreatedAt": number,
                "Duration": number,
                "Error": "string",
                "HasResultSet": boolean,
                "Id": "string",
                "QueryString": "string",
                "RedshiftQueryId": number,
                "ResultRows": number,
                "ResultSize": number,
                "Status": "string",
                "UpdatedAt": number
            }
        ],
        "UpdatedAt": number
}
```

Response Elements

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

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

Id (p. 9)

The identifier of the SQL statement described. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API.

Type: String

Pattern: ^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$

ClusterIdentifier (p. 9)

The cluster identifier.

Type: String

CreatedAt (p. 9)

The date and time (UTC) when the SQL statement was submitted to run.

Type: Timestamp

Database (p. 9)

The name of the database.

Type: String

DbUser (p. 9)

The database user name.

Type: String

Duration (p. 9)

The amount of time in nanoseconds that the statement ran.

Type: Long

Error (p. 9)

The error message from the cluster if the SQL statement encountered an error while running.

Type: String

HasResultSet (p. 9)

A value that indicates whether the statement has a result set. The result set can be empty.

Type: Boolean

QueryParameters (p. 9)

The parameters for the SQL statement.

Type: Array of SqlParameter (p. 43) objects

Array Members: Minimum number of 1 item.

QueryString (p. 9)

The SQL statement text.

Type: String

RedshiftPid (p. 9)

The process identifier from Amazon Redshift.

Type: Long

RedshiftQueryId (p. 9)

The identifier of the query generated by Amazon Redshift. These identifiers are also available in the `query` column of the `STL_QUERY` system view.

Type: Long

ResultRows (p. 9)

Either the number of rows returned from the SQL statement or the number of rows affected. If result size is greater than zero, the result rows can be the number of rows affected by SQL statements such as INSERT, UPDATE, DELETE, COPY, and others. A -1 indicates the value is null.

Type: Long

ResultSize (p. 9)

The size in bytes of the returned results. A -1 indicates the value is null.

Type: Long

SecretArn (p. 9)

The name or Amazon Resource Name (ARN) of the secret that enables access to the database.

Type: String

Status (p. 9)

The status of the SQL statement being described. Status values are defined as follows:
- ABORTED - The query run was stopped by the user.
- ALL - A status value that includes all query statuses. This value can be used to filter results.
- FAILED - The query run failed.

- FINISHED - The query has finished running.
- PICKED - The query has been chosen to be run.
- STARTED - The query run has started.
- SUBMITTED - The query was submitted, but not yet processed.

Type: String

Valid Values: `SUBMITTED | PICKED | STARTED | FINISHED | ABORTED | FAILED | ALL`

SubStatements (p. 9)

The SQL statements from a multiple statement run.

Type: Array of SubStatementData (p. 46) objects

UpdatedAt (p. 9)

The date and time (UTC) that the metadata for the SQL statement was last updated. An example is the time the status last changed.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ResourceNotFoundException

The Amazon Redshift Data API operation failed due to a missing resource.

HTTP Status Code: 400

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

DescribeTable

Describes the detailed information about a table from metadata in the cluster. The information includes its columns. A token is returned to page through the column list. Depending on the authorization method, use one of the following combinations of request parameters:

- AWS Secrets Manager - specify the Amazon Resource Name (ARN) of the secret, the database name, and the cluster identifier that matches the cluster in the secret.
- Temporary credentials - specify the cluster identifier, the database name, and the database user name. Permission to call the `redshift:GetClusterCredentials` operation is required to use this method.

Request Syntax

```
{
    "ClusterIdentifier": "string",
    "ConnectedDatabase": "string",
    "Database": "string",
    "DbUser": "string",
    "MaxResults": number,
    "NextToken": "string",
    "Schema": "string",
    "SecretArn": "string",
    "Table": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

ClusterIdentifier (p. 14)

The cluster identifier. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Database (p. 14)

The name of the database that contains the tables to be described. If `ConnectedDatabase` is not specified, this is also the database to connect to with your authentication credentials.

Type: String

Required: Yes

ConnectedDatabase (p. 14)

A database name. The connected database is specified when you connect with your authentication credentials.

Type: String

Required: No

DbUser (p. 14)

The database user name. This parameter is required when authenticating using temporary credentials.

Type: String

Required: No

MaxResults (p. 14)

The maximum number of tables to return in the response. If more tables exist than fit in one response, then `NextToken` is returned to page through the results.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

NextToken (p. 14)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Required: No

Schema (p. 14)

The schema that contains the table. If no schema is specified, then matching tables for all schemas are returned.

Type: String

Required: No

SecretArn (p. 14)

The name or ARN of the secret that enables access to the database. This parameter is required when authenticating using AWS Secrets Manager.

Type: String

Required: No

Table (p. 14)

The table name. If no table is specified, then all tables for all matching schemas are returned. If no table and no schema is specified, then all tables for all schemas in the database are returned

Type: String

Required: No

Response Syntax

```
{
```

```
    "ColumnList": [
        {
            "columnDefault": "string",
            "isCaseSensitive": boolean,
            "isCurrency": boolean,
            "isSigned": boolean,
            "label": "string",
            "length": number,
            "name": "string",
            "nullable": number,
            "precision": number,
            "scale": number,
            "schemaName": "string",
            "tableName": "string",
            "typeName": "string"
        }
    ],
    "NextToken": "string",
    "TableName": "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.

ColumnList (p. 15)

A list of columns in the table.

Type: Array of ColumnMetadata (p. 39) objects

NextToken (p. 15)

A value that indicates the starting point for the next set of response records in a subsequent request.
If a value is returned in a response, you can retrieve the next set of records by providing this returned
NextToken value in the next NextToken parameter and retrying the command. If the NextToken field
is empty, all response records have been retrieved for the request.

Type: String

TableName (p. 15)

The table name.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ExecuteStatement

Runs an SQL statement, which can be data manipulation language (DML) or data definition language (DDL). This statement must be a single SQL statement. Depending on the authorization method, use one of the following combinations of request parameters:

- AWS Secrets Manager - specify the Amazon Resource Name (ARN) of the secret, the database name, and the cluster identifier that matches the cluster in the secret.
- Temporary credentials - specify the cluster identifier, the database name, and the database user name. Permission to call the `redshift:GetClusterCredentials` operation is required to use this method.

Request Syntax

```
{
    "ClusterIdentifier": "string",
    "Database": "string",
    "DbUser": "string",
    "Parameters": [
        {
            "name": "string",
            "value": "string"
        }
    ],
    "SecretArn": "string",
    "Sql": "string",
    "StatementName": "string",
    "WithEvent": boolean
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

ClusterIdentifier (p. 18)

The cluster identifier. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Database (p. 18)

The name of the database. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Sql (p. 18)

The SQL statement text to run.

Type: String

Required: Yes

DbUser (p. 18)

The database user name. This parameter is required when authenticating using temporary credentials.

Type: String

Required: No

Parameters (p. 18)

The parameters for the SQL statement.

Type: Array of SqlParameter (p. 43) objects

Array Members: Minimum number of 1 item.

Required: No

SecretArn (p. 18)

The name or ARN of the secret that enables access to the database. This parameter is required when authenticating using AWS Secrets Manager.

Type: String

Required: No

StatementName (p. 18)

The name of the SQL statement. You can name the SQL statement when you create it to identify the query.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 500.

Required: No

WithEvent (p. 18)

A value that indicates whether to send an event to the Amazon EventBridge event bus after the SQL statement runs.

Type: Boolean

Required: No

Response Syntax

```
{
   "ClusterIdentifier": "string",
   "CreatedAt": number,
   "Database": "string",
   "DbUser": "string",
```

```
    "Id": "string",
    "SecretArn": "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.

ClusterIdentifier (p. 19)

    The cluster identifier.

    Type: String

CreatedAt (p. 19)

    The date and time (UTC) the statement was created.

    Type: Timestamp

Database (p. 19)

    The name of the database.

    Type: String

DbUser (p. 19)

    The database user name.

    Type: String

Id (p. 19)

    The identifier of the SQL statement whose results are to be fetched. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API.

    Type: String

    Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

SecretArn (p. 19)

    The name or ARN of the secret that enables access to the database.

    Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

ActiveStatementsExceededException

    The number of active statements exceeds the limit.

    HTTP Status Code: 400

ExecuteStatementException

    The SQL statement encountered an environmental error while running.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

GetStatementResult

Fetches the temporarily cached result of an SQL statement. A token is returned to page through the statement results.

Request Syntax

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

Id (p. 22)

The identifier of the SQL statement whose results are to be fetched. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API. A suffix indicates then number of the SQL statement. For example, `d9b6c0c9-0747-4bf4-b142-e8883122f766:2` has a suffix of `:2` that indicates the second SQL statement of a batch query. This identifier is returned by `BatchExecuteStatment`, `ExecuteStatment`, and `ListStatements`.

Type: String

Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

Required: Yes

NextToken (p. 22)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Required: No

Response Syntax

```
{
    "ColumnMetadata": [
        {
            "columnDefault": "string",
            "isCaseSensitive": boolean,
            "isCurrency": boolean,
            "isSigned": boolean,
            "label": "string",
            "length": number,
```

```
            "name": "string",
            "nullable": number,
            "precision": number,
            "scale": number,
            "schemaName": "string",
            "tableName": "string",
            "typeName": "string"
        }
    ],
    "NextToken": "string",
    "Records": [
        [
            {
                "blobValue": blob,
                "booleanValue": boolean,
                "doubleValue": number,
                "isNull": boolean,
                "longValue": number,
                "stringValue": "string"
            }
        ]
    ],
    "TotalNumRows": number
}
```

Response Elements

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

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

Records (p. 22)

> The results of the SQL statement.

> Type: Array of arrays of Field (p. 41) objects

ColumnMetadata (p. 22)

> The properties (metadata) of a column.

> Type: Array of ColumnMetadata (p. 39) objects

NextToken (p. 22)

> A value that indicates the starting point for the next set of response records in a subsequent request.
> If a value is returned in a response, you can retrieve the next set of records by providing this returned
> NextToken value in the next NextToken parameter and retrying the command. If the NextToken field
> is empty, all response records have been retrieved for the request.

> Type: String

TotalNumRows (p. 22)

> The total number of rows in the result set returned from a query. You can use this number to
> estimate the number of calls to the `GetStatementResult` operation needed to page through the
> results.

> Type: Long

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ResourceNotFoundException

The Amazon Redshift Data API operation failed due to a missing resource.

HTTP Status Code: 400

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListDatabases

List the databases in a cluster. A token is returned to page through the database list. Depending on the authorization method, use one of the following combinations of request parameters:

- AWS Secrets Manager - specify the Amazon Resource Name (ARN) of the secret, the database name, and the cluster identifier that matches the cluster in the secret.
- Temporary credentials - specify the cluster identifier, the database name, and the database user name. Permission to call the `redshift:GetClusterCredentials` operation is required to use this method.

Request Syntax

```
{
    "ClusterIdentifier": "string",
    "Database": "string",
    "DbUser": "string",
    "MaxResults": number,
    "NextToken": "string",
    "SecretArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

> **Note**
> In the following list, the required parameters are described first.

ClusterIdentifier (p. 25)

The cluster identifier. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Database (p. 25)

The name of the database. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

DbUser (p. 25)

The database user name. This parameter is required when authenticating using temporary credentials.

Type: String

Required: No

MaxResults (p. 25)

The maximum number of databases to return in the response. If more databases exist than fit in one response, then `NextToken` is returned to page through the results.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

NextToken (p. 25)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Required: No

SecretArn (p. 25)

The name or ARN of the secret that enables access to the database. This parameter is required when authenticating using AWS Secrets Manager.

Type: String

Required: No

Response Syntax

```
{
    "Databases": [ "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.

Databases (p. 26)

The names of databases.

Type: Array of strings

NextToken (p. 26)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListSchemas

Lists the schemas in a database. A token is returned to page through the schema list. Depending on the authorization method, use one of the following combinations of request parameters:

- AWS Secrets Manager - specify the Amazon Resource Name (ARN) of the secret, the database name, and the cluster identifier that matches the cluster in the secret.
- Temporary credentials - specify the cluster identifier, the database name, and the database user name. Permission to call the `redshift:GetClusterCredentials` operation is required to use this method.

Request Syntax

```
{
    "ClusterIdentifier": "string",
    "ConnectedDatabase": "string",
    "Database": "string",
    "DbUser": "string",
    "MaxResults": number,
    "NextToken": "string",
    "SchemaPattern": "string",
    "SecretArn": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

ClusterIdentifier (p. 28)

The cluster identifier. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Database (p. 28)

The name of the database that contains the schemas to list. If `ConnectedDatabase` is not specified, this is also the database to connect to with your authentication credentials.

Type: String

Required: Yes

ConnectedDatabase (p. 28)

A database name. The connected database is specified when you connect with your authentication credentials.

Type: String

Required: No

DbUser (p. 28)

The database user name. This parameter is required when authenticating using temporary credentials.

Type: String

Required: No

MaxResults (p. 28)

The maximum number of schemas to return in the response. If more schemas exist than fit in one response, then `NextToken` is returned to page through the results.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

NextToken (p. 28)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Required: No

SchemaPattern (p. 28)

A pattern to filter results by schema name. Within a schema pattern, "%" means match any substring of 0 or more characters and "_" means match any one character. Only schema name entries matching the search pattern are returned.

Type: String

Required: No

SecretArn (p. 28)

The name or ARN of the secret that enables access to the database. This parameter is required when authenticating using AWS Secrets Manager.

Type: String

Required: No

Response Syntax

```
{
   "NextToken": "string",
   "Schemas": [ "string" ]
}
```

Response Elements

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

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

NextToken (p. 29)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Schemas (p. 29)

The schemas that match the request pattern.

Type: Array of strings

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListStatements

List of SQL statements. By default, only finished statements are shown. A token is returned to page through the statement list.

Request Syntax

```
{
    "MaxResults": number,
    "NextToken": "string",
    "RoleLevel": boolean,
    "StatementName": "string",
    "Status": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

> **Note**
> In the following list, the required parameters are described first.

MaxResults (p. 31)

The maximum number of SQL statements to return in the response. If more SQL statements exist than fit in one response, then `NextToken` is returned to page through the results.

Type: Integer

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

Required: No

NextToken (p. 31)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Required: No

RoleLevel (p. 31)

A value that filters which statements to return in the response. If true, all statements run by the caller's IAM role are returned. If false, only statements run by the caller's IAM role in the current IAM session are returned. The default is true.

Type: Boolean

Required: No

StatementName (p. 31)

The name of the SQL statement specified as input to `BatchExecuteStatement` or `ExecuteStatement` to identify the query. You can list multiple statements by providing a

prefix that matches the beginning of the statement name. For example, to list myStatement1, myStatement2, myStatement3, and so on, then provide the a value of `myStatement`. Data API does a case-sensitive match of SQL statement names to the prefix value you provide.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 500.

Required: No

Status (p. 31)

The status of the SQL statement to list. Status values are defined as follows:
- ABORTED - The query run was stopped by the user.
- ALL - A status value that includes all query statuses. This value can be used to filter results.
- FAILED - The query run failed.
- FINISHED - The query has finished running.
- PICKED - The query has been chosen to be run.
- STARTED - The query run has started.
- SUBMITTED - The query was submitted, but not yet processed.

Type: String

Valid Values: `SUBMITTED | PICKED | STARTED | FINISHED | ABORTED | FAILED | ALL`

Required: No

Response Syntax

```
{
   "NextToken": "string",
   "Statements": [
      {
         "CreatedAt": number,
         "Id": "string",
         "IsBatchStatement": boolean,
         "QueryParameters": [
            {
               "name": "string",
               "value": "string"
            }
         ],
         "QueryString": "string",
         "QueryStrings": [ "string" ],
         "SecretArn": "string",
         "StatementName": "string",
         "Status": "string",
         "UpdatedAt": number
      }
   ]
}
```

Response Elements

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

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

Statements (p. 32)

The SQL statements.

Type: Array of StatementData (p. 44) objects

NextToken (p. 32)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

ListTables

List the tables in a database. If neither `SchemaPattern` nor `TablePattern` are specified, then all tables in the database are returned. A token is returned to page through the table list. Depending on the authorization method, use one of the following combinations of request parameters:

- AWS Secrets Manager - specify the Amazon Resource Name (ARN) of the secret, the database name, and the cluster identifier that matches the cluster in the secret.
- Temporary credentials - specify the cluster identifier, the database name, and the database user name. Permission to call the `redshift:GetClusterCredentials` operation is required to use this method.

Request Syntax

```
{
    "ClusterIdentifier": "string",
    "ConnectedDatabase": "string",
    "Database": "string",
    "DbUser": "string",
    "MaxResults": number,
    "NextToken": "string",
    "SchemaPattern": "string",
    "SecretArn": "string",
    "TablePattern": "string"
}
```

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 49).

The request accepts the following data in JSON format.

Note
In the following list, the required parameters are described first.

ClusterIdentifier (p. 34)

The cluster identifier. This parameter is required when authenticating using either AWS Secrets Manager or temporary credentials.

Type: String

Required: Yes

Database (p. 34)

The name of the database that contains the tables to list. If `ConnectedDatabase` is not specified, this is also the database to connect to with your authentication credentials.

Type: String

Required: Yes

ConnectedDatabase (p. 34)

A database name. The connected database is specified when you connect with your authentication credentials.

Type: String

Required: No

DbUser (p. 34)

The database user name. This parameter is required when authenticating using temporary credentials.

Type: String

Required: No

MaxResults (p. 34)

The maximum number of tables to return in the response. If more tables exist than fit in one response, then `NextToken` is returned to page through the results.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 1000.

Required: No

NextToken (p. 34)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Required: No

SchemaPattern (p. 34)

A pattern to filter results by schema name. Within a schema pattern, "%" means match any substring of 0 or more characters and "_" means match any one character. Only schema name entries matching the search pattern are returned. If `SchemaPattern` is not specified, then all tables that match `TablePattern` are returned. If neither `SchemaPattern` or `TablePattern` are specified, then all tables are returned.

Type: String

Required: No

SecretArn (p. 34)

The name or ARN of the secret that enables access to the database. This parameter is required when authenticating using AWS Secrets Manager.

Type: String

Required: No

TablePattern (p. 34)

A pattern to filter results by table name. Within a table pattern, "%" means match any substring of 0 or more characters and "_" means match any one character. Only table name entries matching the search pattern are returned. If `TablePattern` is not specified, then all tables that match `SchemaPattern`are returned. If neither `SchemaPattern` or `TablePattern` are specified, then all tables are returned.

Type: String

Required: No

Response Syntax

```
{
   "NextToken": "string",
   "Tables": [
      {
         "name": "string",
         "schema": "string",
         "type": "string"
      }
   ]
}
```

Response Elements

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

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

NextToken (p. 36)

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned NextToken value in the next NextToken parameter and retrying the command. If the NextToken field is empty, all response records have been retrieved for the request.

Type: String

Tables (p. 36)

The tables that match the request pattern.

Type: Array of TableMember (p. 48) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 51).

InternalServerException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 500

ValidationException

The Amazon Redshift Data API operation failed due to invalid input.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

Data Types

The Redshift Data API Service 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:

ColumnMetadata

The properties (metadata) of a column.

Contents

Note
In the following list, the required parameters are described first.

columnDefault

The default value of the column.

Type: String

Required: No

isCaseSensitive

A value that indicates whether the column is case-sensitive.

Type: Boolean

Required: No

isCurrency

A value that indicates whether the column contains currency values.

Type: Boolean

Required: No

isSigned

A value that indicates whether an integer column is signed.

Type: Boolean

Required: No

label

The label for the column.

Type: String

Required: No

length

The length of the column.

Type: Integer

Required: No

name

The name of the column.

Type: String

Required: No

nullable

A value that indicates whether the column is nullable.

Type: Integer

Required: No

precision

The precision value of a decimal number column.

Type: Integer

Required: No

scale

The scale value of a decimal number column.

Type: Integer

Required: No

schemaName

The name of the schema that contains the table that includes the column.

Type: String

Required: No

tableName

The name of the table that includes the column.

Type: String

Required: No

typeName

The database-specific data type of the column.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Field

A data value in a column.

Contents

Note
In the following list, the required parameters are described first.

blobValue

A value of the BLOB data type.

Type: Base64-encoded binary data object

Required: No

booleanValue

A value of the Boolean data type.

Type: Boolean

Required: No

doubleValue

A value of the double data type.

Type: Double

Required: No

isNull

A value that indicates whether the data is NULL.

Type: Boolean

Required: No

longValue

A value of the long data type.

Type: Long

Required: No

stringValue

A value of the string data type.

Type: String

Required: No

See Also

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

- AWS SDK for C++

- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

SqlParameter

A parameter used in a SQL statement.

Contents

Note
In the following list, the required parameters are described first.

name

The name of the parameter.

Type: String

Pattern: `^[0-9a-zA-Z_]+$`

Required: Yes

value

The value of the parameter. Amazon Redshift implicitly converts to the proper data type. For more inforation, see Data types in the *Amazon Redshift Database Developer Guide*.

Type: String

Length Constraints: Minimum length of 1.

Required: Yes

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

StatementData

The SQL statement to run.

Contents

Note
In the following list, the required parameters are described first.

Id

The SQL statement identifier. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API.

Type: String

Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

Required: Yes

CreatedAt

The date and time (UTC) the statement was created.

Type: Timestamp

Required: No

IsBatchStatement

A value that indicates whether the statement is a batch query request.

Type: Boolean

Required: No

QueryParameters

The parameters used in a SQL statement.

Type: Array of SqlParameter (p. 43) objects

Array Members: Minimum number of 1 item.

Required: No

QueryString

The SQL statement.

Type: String

Required: No

QueryStrings

One or more SQL statements. Each query string in the array corresponds to one of the queries in a batch query request.

Type: Array of strings

Required: No

SecretArn

The name or Amazon Resource Name (ARN) of the secret that enables access to the database.

Type: String

Required: No

StatementName

The name of the SQL statement.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 500.

Required: No

Status

The status of the SQL statement. An example is the that the SQL statement finished.

Type: String

Valid Values: `SUBMITTED | PICKED | STARTED | FINISHED | ABORTED | FAILED | ALL`

Required: No

UpdatedAt

The date and time (UTC) that the statement metadata was last updated.

Type: Timestamp

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

SubStatementData

Information about an SQL statement.

Contents

Note
In the following list, the required parameters are described first.

Id

The identifier of the SQL statement. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API. A suffix indicates the number of the SQL statement. For example, `d9b6c0c9-0747-4bf4-b142-e8883122f766:2` has a suffix of `:2` that indicates the second SQL statement of a batch query.

Type: String

Pattern: `^[a-z0-9]{8}(-[a-z0-9]{4}){3}-[a-z0-9]{12}(:\d+)?$`

Required: Yes

CreatedAt

The date and time (UTC) the statement was created.

Type: Timestamp

Required: No

Duration

The amount of time in nanoseconds that the statement ran.

Type: Long

Required: No

Error

The error message from the cluster if the SQL statement encountered an error while running.

Type: String

Required: No

HasResultSet

A value that indicates whether the statement has a result set. The result set can be empty.

Type: Boolean

Required: No

QueryString

The SQL statement text.

Type: String

Required: No

RedshiftQueryId

The SQL statement identifier. This value is a universally unique identifier (UUID) generated by Amazon Redshift Data API.

Type: Long

Required: No

ResultRows

Either the number of rows returned from the SQL statement or the number of rows affected. If result size is greater than zero, the result rows can be the number of rows affected by SQL statements such as INSERT, UPDATE, DELETE, COPY, and others. A -1 indicates the value is null.

Type: Long

Required: No

ResultSize

The size in bytes of the returned results. A -1 indicates the value is null.

Type: Long

Required: No

Status

The status of the SQL statement. An example is the that the SQL statement finished.

Type: String

Valid Values: `SUBMITTED | PICKED | STARTED | FINISHED | ABORTED | FAILED`

Required: No

UpdatedAt

The date and time (UTC) that the statement metadata was last updated.

Type: Timestamp

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

TableMember

The properties of a table.

Contents

Note
In the following list, the required parameters are described first.

name

The name of the table.

Type: String

Required: No

schema

The schema containing the table.

Type: String

Required: No

type

The type of the table. Possible values include TABLE, VIEW, SYSTEM TABLE, GLOBAL TEMPORARY, LOCAL TEMPORARY, ALIAS, and SYNONYM.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java V2
- AWS SDK for Ruby V3

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

Action

The action to be performed.

Type: string

Required: Yes

Version

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: *access_key*/*YYYYMMDD*/*region*/*service*/aws4_request.

For more information, see Task 2: Create a String to Sign for Signature Version 4 in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'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 Handling Dates in Signature Version 4 in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to AWS Services That Work with IAM in the *IAM User Guide*.

Condition: If you're using temporary security credentials from the AWS Security Token Service, you must include the security token.

Type: string

Required: Conditional

X-Amz-Signature

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

X-Amz-SignedHeaders

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see Task 1: Create a Canonical Request For Signature Version 4 in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

AccessDeniedException

You do not have sufficient access to perform this action.

HTTP Status Code: 400

IncompleteSignature

The request signature does not conform to AWS standards.

HTTP Status Code: 400

InternalFailure

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

HTTP Status Code: 500

InvalidAction

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

HTTP Status Code: 400

InvalidClientTokenId

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

HTTP Status Code: 403

InvalidParameterCombination

Parameters that must not be used together were used together.

HTTP Status Code: 400

InvalidParameterValue

An invalid or out-of-range value was supplied for the input parameter.

HTTP Status Code: 400

InvalidQueryParameter

The AWS query string is malformed or does not adhere to AWS standards.

HTTP Status Code: 400

MalformedQueryString

The query string contains a syntax error.

HTTP Status Code: 404

MissingAction

The request is missing an action or a required parameter.

HTTP Status Code: 400

MissingAuthenticationToken

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

MissingParameter

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

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

HTTP Status Code: 403

RequestExpired

The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

ServiceUnavailable

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

ThrottlingException

The request was denied due to request throttling.

HTTP Status Code: 400

ValidationError

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

HTTP Status Code: 400