Qlik Enterprise Manager Developer's Guide
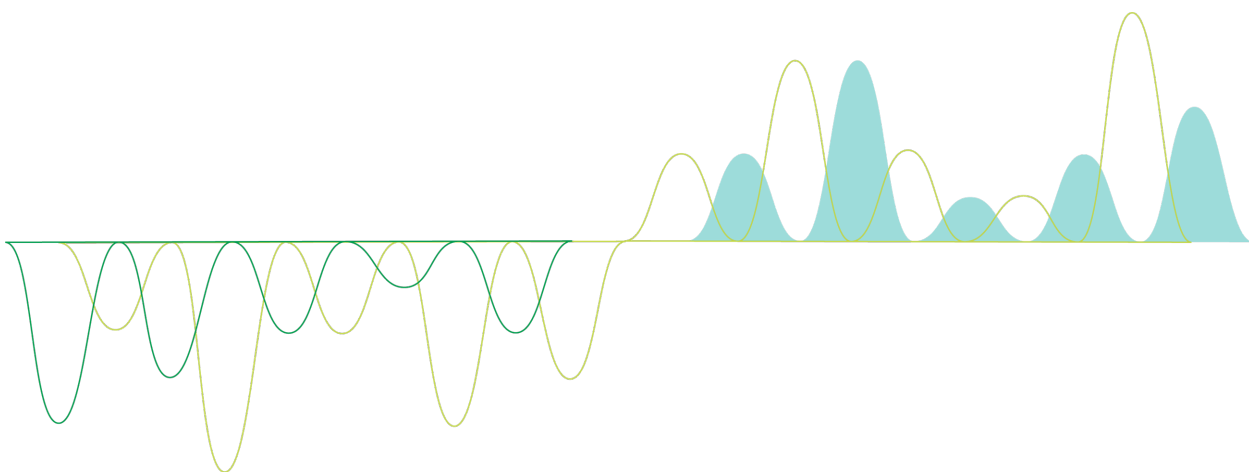
Qlik Enterprise Manager^{TM}

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1 Introduction

The Qlik Enterprise Manager (Enterprise Manager) SDKs provide programmatic interfaces for performing tasks typically carried out using the Enterprise Manager web console, including:

- » Viewing a list of tasks for a server
- » Viewing details for a particular task
- » Stopping a task
- » Running a task
- » Exporting all definitions from the requested server repository on the selected server
- » Importing the JSON definitions provided in the request body into the requested server repository on the selected server
- » Reloading a table
- » Exporting a task
- » Importing a task
- » Testing an endpoint's connectivity and configuration

The Enterprise Manager SDKs allows other systems to interact with Enterprise Manager, for example to display data about one or more tasks in a user's dashboard. They also offers a quick and easy way of running batch operations.

Using an SDK requires basic familiarity with web services, Replicate, and Enterprise Manager.

> **Note** The following methods are supported with Replicate tasks only:
> - » ImportAll
> - » ExportAll
> - » ExportTask
> - » TestEndpoint
> - » GetEndpointList
> - » DeleteEndpoint
> - » ImportTask
> - » DeleteTask
> - » ReloadTable

2   Enterprise Manager REST SDK

This chapter explains how to use the Enterprise Manager REST SDK and the lists the available methods.

In this chapter:

- ▸ Prerequisites
- ▸ Standards and Conventions
- ▸ Authentication and Authorization
- ▸ Error Handling
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Prerequisites

Before using the Enterprise Manager REST API, make sure that:

- » Qlik Enterprise Manager has been installed.
- » The Qlik Enterprise Manager service is active.
- » The relevant permissions have been granted.

Standards and Conventions

The API is based on the following standards:

- » Names: Camel Case, such as GetTaskList
- » Date and time format: ISO 8601 (YYYY-MM-DD HH:MM:SS), in UTC (Universal Time Coordinated)

  Example: 2007-04-05T14:30:25 (implicitly interpreted as UTC without the explicit trailing Z).

- » Standard URL format: api/v1/URL

In addition, this topic uses the following conventions:

- » Parameters in examples appear in curly brackets as `{xx}` and should be replaced with an actual value. An example of a parameter is `{server}`, which should be replaced by the server name or IP address of the machine where Replicate is installed. For a list of parameters, see Parameters.

All examples in this chapter use cURL as the HTTP engine.

In terms of forward and backward compatibility of the Enterprise Manager REST API, the caller should expect future releases to add new optional request parameters and additional data items in responses.

Authentication and Authorization

The Enterprise Manager REST API uses the BASIC HTTP authorization scheme to authenticate callers and create a client session. A client session is established using the Login method, which returns the special header "EnterpriseManager.APISessionID" with a value (session token) that needs to be sent as a request header in any subsequent requests.

A session token expires 5 minutes after the last request. After the session expires, the caller must re-authenticate to establish a new session.

Authorization for performing a specific REST request relies on permission, assigned to the authenticated user either directly or by means of group membership. Each REST request requires a minimum role, which is specified in the section describing the request.

Error Handling

An error response has the following structure:

```
{

    "error_code":"code","error_message":"message"

}
```

This section lists the generic messages that apply to most of the API functions. Errors that are specific to a particular API function appear in the section for that API function.

Error Code	Message	Description
UNAUTHORIZED_ REQUEST	Unauthorized Request.	The user is not authorized to perform the requested action (e.g. deleting a task).
INVALID_ SESSION_ID	The session has expired or the session ID is not valid.	Session expired or invalid.
DESERIALIZE_ TO_TYPE	Failed to deserialize json to type {type}: {message}	Returned when the JSON format is invalid.
AEM_SERVER_ NOT_FOUND	The requested server {server} could not be found.	The requested server cannot be found.
AEM_SERVER_ NOT_ MONITORED	The requested server {server} is not monitored.	The requested server is not being monitored and thus the information is not accessible.

Error Code	Message	Description
AEM_SERVER_ NOT_ CONNECTED	The requested server "{server}" cannot be reached at this time. Message: {message}	The desired information cannot be retrieved as the requested server is not connected.
AEM_SERVER_ LICENSE_ EXPIRED	The license for requested server {server} has expired.	The requested server license has expired.
AEM_SERVER_ INVALID_ LICENSE	The license for requested server {server} is not valid.	The requested server license is not valid.
LICENSE_NOT_ FOUND	You need to register a Replication Management license in order to use Qlik Enterprise Manager. To register or obtain a license, open the Qlik Enterprise Manager console and follow the instructions.	Replication Management license was not found. For a user who is permitted to Register Qlik Enterprise Manager license.
LICENSE_NOT_ FOUND_ CONTACT_ADMIN	An Enterprise Manager Admin needs to register a Replication Management license before you can use the product. To obtain a license, contact your Qlik Sales Representative with the Enterprise Manager machine name (which is displayed when you open the Enterprise Manager console).	Replication Management license was not found. For a user who is NOT permitted to Register Qlik Enterprise Manager license.
LICENSE_ EVALUATION_ EXPIRED	{Module} evaluation license has expired.	{Module} is one of the following: » Replication Management » Replication Analytics

Error Code	Message	Description
LICENSE_TERM_ EXPIRED	{Module} license has expired.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_ INVALID_ SIGNATURE	The {Module} license signature is invalid.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_HOST_ MISMATCH	The host name in the {Module} license does not match the Enterprise Manager machine name.	{Module} is one of the following: » Replication Management » Replication Analytics
AEM_MISSING_ FIELD	The "{fieldName}" field is missing from the request.	When a mandatory field is missing from the request or appears empty

Login

General

URL	https://{host}/attunityenterprisemanager/api/v1/login
Description	Authenticates an API caller with Enterprise Manager using Active Direcotry or SAML, and acquires a session token to be used with API method calls. The server requests client authentication.
HTTP Method	GET - Active Directory POST - Active Directory and SAML
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	URL Parameter Name	Required	Example
URL	host [string]	Yes	computer.network.net
Header (Required with Active Directory authentication only)	user@domain:password converted to base 64 [string]	Yes	c27kc2Rmc27k

Response Header

URL Param Name	Description
EnterpriseManager.APISessionID	Identifier to be used to get authorization to run API functions on Enterprise Manager

cURL Example

Active Directory Request:

```
curl -i -k --header "Authorization: Basic cWFAcWE6cWE="
https://computer.network.net/attunityenterprisemanager/
api/v1/login
```

SAML Request:

```
curl -i -X POST
https://computer.network.net/attunityenterprisemanager/api/v1/login --
data "@saml.txt"
```

Where `@saml.txt` is the SAML assertion from a SAML IDP. This must be a URL encoded string containing the `SAMLResponse` parameter with a base64 encoded SAML assertion as its value. The string may also contain other parameters (e.g. RelayState), but these parameters are ignored.

Response:

```
HTTP/1.1 200 OK

Content-Length: 0

Content-Type: text/html

Server: Microsoft-HTTPAPI/2.0

EnterpriseManager.APISessionID: J3cKzWIbi_w6Fr1G-tO03Q

Date: Mon, 26 Dec 2016 17:02:01 GMT
```

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
401	UNAUTHORIZED_ REQUEST	Unauthorized Request.	The request was not authorized.

Logout

General

URL	https://{host}/attunityenterprisemanager/api/v1/logout
Description	End a session
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	URL Param Name	Required	Example
URL	host [string]	Yes	computer.network.net
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

cURL Example

Request	`curl -i -k --header "EnterpriseManager.APISessionID: wCo0_ KvjEUFROvfHF5KGrw A" https://computer.network.net/attunityenterprisemanager/ api/v1/logout`

Response	`Header:`
	`HTTP/1.1 200 OK`
	`Content-Length: 0`
	`Content-Type: text/html`
	`Server: Microsoft-HTTPAPI/2.0`
	`Date: Tue, 27 Dec 2016 08:00:27 GMT`

PutServerLicense

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]/license/def
Description	Registers a license on a specific server via Qlik Enterprise Manager.
HTTP Method	PUT
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	The name of the server in Enterprise Manager: myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Request Body

The license to register on the server [stream].

This is the license that was provided by your Qlik Sales Representative.

Expected format: Text or JSON.

Currently refers to the Replicate license only.

cURL Example

Request	`curl -i -k -X PUT --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 324" "https://computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsrv1/license/def" -T "C:\license_exp2018-02-07_ser90000319.txt"`
Request Body **(content of "C:\license_ exp2018-02-07_ ser90000 319.txt ")**	# # Temporary license for development # license_type=evaluation_license licensed_to=Qlik Internal - Qlik Replicate Development licensed_by=Miki serial_no=2333 expiration_date=2018-01-31 source_types= target_types= features=manager version=5.5.0.0 issue_date=2017-11-01 checksum=C2855-R5J8F-JF8RQ-C3K7K

Response	`Header:`
	
	`        HTTP/1.1 200 OK`
	`        Cache-Control: no-cache, no-store`
	`        Content-Length: 38`
	`        Content-Type: application/json; charset=utf-8`
	`        Server: Microsoft-HTTPAPI/2.0`
	`        Date: Mon, 26 Dec 2016 16:31:01 GMT`

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_PUT_SRV_LIC_INNER_ERR	Failed to put license for server "{server}". Error: "{message}"	Returned if Qlik Enterprise Manager encounters an error/exception when trying to register the license on the specified server.
500	AEM_SRV_LIC_INVALID_FORMAT	The license file format is corrupt.	Returned when the contents of the license file are invalid.

GetServerDetails

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/[server]
Description	Retrieves details about the specified server.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_KvjEUFROvfHF5KGrw

Response Body

Body
```
{

    "serverDetails":{

        "$type":"{string}",
        "name":"{string}",
        "description":"{string}",
        "configuration":{
            "host":"{string}",
            "platform":"{enum server_platform}",
            "port":"{string}",
            "username":"{string}"
        },
        "state":"{enum server_state}",
        "message": "{string}",
        "version": "{string}",
        "license":{
            "issue_date":"{string}",
            "state":"{enum license_state}",
            "expiration":"{string}",
            "days_to_expiration":"{int32}"
        },
        "last_connection":"{string}",
        "task_summary":{
            "total":"{int32}",
            "running":"{int32}",
            "stopped":"{int32}",
            "recovering":"{int32}",
            "error":"{int32}"

        },

        "resource_utilization":{

            "disk_usage_mb":"{int64}",

            "memory_mb":"{int64}",

            "attunity_cpu_percentage":"{int32}",

            "machine_cpu_percentage":"{int32}"

        },

    }

}
```

Response Parameters

Name	Description
$type	The server's type, which can either be `ReplicateServerDetails` or `ComposeServerDetails`.
Name	The name of the server in Qlik Enterprise Manager.
Description	The server description
configuration	
host	The host name or IP address of the Replicate/Compose Server machine.
platform	The platform on which the Replicate/Compose Server machine is installed.
port	The port through which the Replicate/Compose Server machine is accessed.
user name	The user name for connecting to the Replicate/Compose Server machine.
State	The current monitoring state of the Replicate/Compose Server machine.
message	The error message if Qlik Enterprise Manager fails to connect to the Replicate/Compose Server machine.
version	The Replicate/Compose Server version.
license	
issue_date	When the license was issued.
state	The current license state (e.g. valid, expired, etc.).
expiration	The expiration date of the server license.
days_to_expiration	The number of days left before the license expires.
last_connection	The date and time of the last successful sync/retrieval of tasks and messages.
task_summary	
total	The total number of tasks, regardless of state.
running	The number of running tasks.

Name	Description
stopped	The number of stopped tasks.
recovering	The number of recovering tasks.
error	The number of tasks that encountered a fatal error.
resource_utilization	
disk_usage_mb	The amount of disk space that the server is currently consuming, in MB. This is the sum of disk usage for all tasks on this server.
memory_mb	The amount of memory that the server is currently consuming, in MB. This is the sum of memory usage for all active tasks on this server, excluding stopped tasks.
attunity_cpu_ percentage	The current CPU usage of the Replicate server process + all task processes.
machine_cpu_ percentage	The current total CPU usage of all the processes running on the machine.

Notes

» The return value -1 means N/A.

» Parameters related to Disk, Memory, Qlik CPU, and Machine CPU usage are not available for Compose servers. For Compose servers, these parameters will be returned as -1.

» Parameters related to Qlik CPU and Machine CPU usage are only available for Replicate 6.2 and above. For earlier Replicate versions, these parameters will be returned as -1.

» For servers that are in an error state or not monitored, parameters related to Disk and Memory usage will be returned as -1.

cURL Example

Request	```curl -i -k --header "EnterpriseManager.APISessionID: wCo0_ KvjEUFROvfHF5KGrw" https://computer.network.net/attunityenterprisemanager/api/v 1/ servers/myrepsrv1```

Response

```
Headers:
HTTP/1.1 200 OK
Cache-Control: no-cache, no-store
Content-Length: 1658
Content-Type: application/json; charset=utf-8
Server: Microsoft-HTTPAPI/2.0
Date: Mon, 26 Dec 2016 13:18:27 GMT
Payload:
{
"serverDetails":{
        "$type": "ReplicateServerDetails",
        "name":"myrepsrv1",
        "description":"My daily replication tasks",
        "configuration":{
                "host":"computer.network.net",
                "platform":"WINDOWS",
                "port":"443",
                "username":"Administrator"
         },
        "state":"MONITORED",
        "message": "",
        "version": "5.2.0.156",
        "license":{
                "issue_date":"2016-12-31",
                "state":"LICENSE_VALID",
                "expiration":"2017-12-31",
                "days_to_expiration":"30"
         },
        "last_connection":"2016-12-18T02:23:30",
        "task_summary":{
                "total":50,
                "running":20,
                "stopped":10,
                "recovering":12,
                "error":8
        },
        "resource_utilization":{
                "disk_usage_mb":500,
                "memory_mb":112832,
                "attunity_cpu_percentage":30,
                "machine_cpu_percentage":50

        },
    }
```

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_SERVER_ NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.
403	See Error Handling.		
440	See Error Handling.		

PutServer

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]/def
Description	Adds a new Replicate/Compose Server or updates the server definition (Connection Properties) if the specified server already exists.
	This method can be used together with `GetServer` in order to update the connection properties of an existing server. First call `GetServer`, then edit the returned properties as required, and finally, call `PutServer`.
HTTP Method	PUT
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Request Body

```
Body        {

                "$type": "{string}",
                "name": "{string}",
                "description": "{string}",
                "host": "{string}",
                "port": "{string}",
                "username": "{string}",
                "password": "{string}",
                "verify_server_certificate": "{bool}",
                "monitored": "{bool}"

            }
```

Request Parameters

Name	Description
$type	The server's type: Can either be `AemReplicateServer` or `AemComposeServer`.
name	The name of the server. For details of what constitutes a valid server name, see AEM_INVALID_NAME .
description	The description of the server. For details of what constitutes a valid description, see AEM_INVALID_DESC
host	The host name or IP address of the server. For details of what constitutes a valid host name, see AEM_INVALID_HOST
port	The port through which the server is accessed.
username	The user name to connect to the server. The specified user must be a server administrator. For details of what constitutes a valid user name, see AEM_INVALID_USERNAME.

Name	Description
password	The password to connect to the server.
	Note Within a session, the password identifier (GUID) that is returned by `GetServer` can be used in this request to indicate that the password should remain unchanged. The password identifier returned by `GetServer` must be used in the same session, otherwise an error will occur.
verify_server_ certificate	Set to "true" to ensure the Server certificate is trusted. As a rule, to reduce the chance of "man-in-the-middle" attacks, this option should always be set to "true".
	» When connecting directly to an Qlik Replicate replication server (default port 3552) with its automatically generated self-signed certificate, Qlik Enterprise Manager is able to validate the certificate without requiring any additional setup.
	» When connecting to a Replicate Server via the Replicate UI Server (typically using port 443) or to the Replicate replication server with a user-installed certificate, you must make sure that the SSL/TLS certificate used by the server is trusted by the Qlik Enterprise Manager machine. The same applies when connecting to a Compose Server with a user-installed certificate. You can easily verify whether the certificate is trusted by opening a Chrome browser window on the Qlik Enterprise Manager machine and connecting to Replicate. If there are no security warnings, the certificate is trusted.
	For information on the different ways of connecting to Qlik Replicate, see *Qlik Replicate Server Requirements* in the Qlik Enterprise Manager Help.
monitored	Whether to retrieve tasks and messages from this server or not. The default is true.

cURL Example

Request	```curl -i -k -X PUT --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 242" https://computer.network.net/attunityenterprisemanager/api /v1/servers/myrepsrv1/def -T "C:\myrepsrv1.json"```
Request Body (content of "C:\myrepsrv 1.json")	```{ "$type":"AemReplicateServer", "name":"myrepsrv1", "description":"replicate for business", "host":"rep2018r2gs7.qa.int", "port":"443", "username":"administrator", "password":"pass123", "verify_server_certificate":"true", "monitored":"true" }```
Response	```Headers: HTTP/1.1 200 OK Cache-Control: no-cache, no-store Content-Length: 38 Content-Type: application/json; charset=utf-8 Server: Microsoft-HTTPAPI/2.0 Date: Mon, 26 Dec 2016 13:18:27 GMT```

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	DESERIALIZE_ TO_TYPE	"Failed to deserialize json to type Server: {message}"	Returned when the JSON format is invalid format. For example, such an error will be returned if the JSON contains an unknown role.
500	AEM_PUT_ SERVER_INNER_ ERR	Failed to put server "{server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to PUT the server.
500	AEM_INVALID_ SERVER_TYPE	Server type {ServerType} for server "{ServerName}" is not valid.	Returned when the an invalid server type is specified.
500	AEM_NAME_URL_ MISMATCH	The name of the server in the request does not match the one that is specified in the URL.	Returned when the name of the server in the request does not match the one that is specified in the URL.
500	AEM_EMPTY_ HOST	The host is missing from the request.	Returned when the host is missing from the request.
500	AEM_EMPTY_ PORT	The port is missing from the request.	Returned when the port is missing from the request.
500	AEM_EMPTY_ USERNAME	The username is missing from the request.	Returned when the user name is missing from the request.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_EMPTY_ PASSWORD	The password is missing from the request.	Returned when the password is missing from the request.
500	AEM_INVALID_ PORT	The port is invalid.	Returned when the specified port is not valid.
500	AEM_INVALID_ USERNAME	The user name is invalid. User names cannot exceed 104 characters and can contain all Unicode characters except for the following characters: Forward slash (/), Left square bracket ([), Right square bracket (]), Colon (:), Semicolon (;), Vertical bar (|), Equal sign (=), Plus sign (+), Asterisk (*), Question mark (?), Left angle bracket (<), Right angle bracket (>), Double quote (\").	Returned when the specified user name is not valid.
500	AEM_INVALID_ DESC	The description is invalid. Descriptions cannot exceed 250 characters.	Returned when the description exceeds 250 characters.
500	AEM_INVALID_ HOST	The host is invalid. Hosts cannot exceed 64 characters and can only contain letters (a-z or A-Z), digits, spaces, dots (.), dashes (-), and underscores (_).	Returned when the server host name exceeds 64 characters or contains invalid characters.
500	AEM_INVALID_ NAME	The name of the server is invalid. Server names cannot exceed 64 characters and can only contain letters (a-z or A-Z), digits, spaces, dots (.), dashes (-), and underscores (_).	Returned when the server name exceeds 64 characters or contains invalid characters.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_HOST_ PORT_ALREADY_ EXIST	Host {name/IP} and port {number} are already in use by another server.	Returned when both the server host name/IP address and the server port are already in use by another server.
500			

PutServerAcl

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]?action=acl

Description	Puts an explicit ACL for a specific server in Qlik Enterprise Manager.
	The method will replace any existing explicit ACL with the ACL in the request.
	The request also includes a Boolean flag for specifying if the server should inherit ACLs from its ancestors (in addition to its explicitly defined ACLs) or not.
	The inherited ACLs (i.e. the ACLs of the server's ancestors) are not affected by this method.
	The `PutServerAcl` can be used together with the `GetServerAcl` method in order to update an existing server's ACL. First call `GetServerAcl`, then edit the returned roles as required, and finally, call `PutServerAcl`.
	Behavior when putting a partial request:
	When the request body includes only some of the roles (as opposed to all four of them), only the roles specifically defined in the request body will be set on the server; roles that are missing or empty will be inherited, but only if the following are true:
	» The `disable_inheritance` flag is set to "True".
	» The roles that are missing/empty in the request are defined for the ancestors.
	Behavior on conflicts:
	If the `disable_inheritance` flag is set to "False" and the explicit roles in the request conflict with existing inherited roles, then the explicit roles will take precedence. For example, if the request defines user A as a Viewer on **MyServer** and user A is also defined as an Admin on All Servers, then user A will be defined as an Admin on All Servers but as a Viewer on **MyServer**.
	Note The user permissions in Enterprise Manager are

completely independent of the user permissions in Replicate. Consequently, `PutServerAcl` will affect the server's Enterprise Manager user permissions, but will *not* affect Replicate's user permissions.

Moreover, when performing an operation via Enterprise Manager, the user permissions defined for the server entity in Enterprise Manager apply, whereas when performing an operation directly via the Replicate Console, the user permissions defined in Replicate apply.

Note Defining the same user/group in different roles is not allowed. However, if the same user or group is defined in different roles but with a different case (e.g. Mike vs. mike or Analysts vs. ANALYSTS), no error will be returned and the strongest role will take precedence.

HTTP Method	PUT
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Request Body

```
{

    "admin_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "designer_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "operator_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "viewer_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "disable_inheritance": "{bool}"

}
```

Request Parameters

Name			Description
admin_role			
	users		An array of users assigned as Admins on the server.
		name	A single Admin user.
	groups		An array of groups assigned as Admins on the server.
		name	A single Admin group.
designer_ role			
	users		An array of users assigned as Designers on the server.
		name	A single Designer user.
	groups		An array of groups assigned as Designers on the server.
		name	A single Designer group.
operator_ role			
	users		An array of users assigned as Operators on the server.
		name	A single Operator user.
	groups		An array of groups assigned as Operators on the server.
		name	A single Operator group.
viewer_role			
	users		An array of users assigned as Viewers on the server.
		name	A single Viewer user.
	groups		An array of groups assigned as Viewers on the server.
		name	A single Viewer group.
disable_ inheritance			Set to "true" if you do not want the server to inherit ACLs from its ancestors (in addition to its explicit ACL). If set to "false" (this is also the default when it is not set), ACLs will be inherited from ancestors in addition to any explicit ACLs.

cURL Example

Request	CURL.EXE -i -k -X PUT --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGr" --header "Content-Length: 638" https://computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsrv1?action=acl" -T "C:\myrepsrv1Acl.json"

Request Body

(defined in myrepsrv1Acl.jso n)

```
{
    "admin_role": {
        "users": [
            {"name": "QLIK\\Paul.Clarke"},
            {"name": "QLIK\\testAuth1"}

        ],

        "groups": [
            {"name": "QLIK\\At-
            tunityEnterpriseManagerAdmins"}
        ]
    },
    "designer_role": {
        "users": [
            {"name": "QLIK\\Marisa.Lewis"},
            {"name": "QLIK\\testAuth2"}
        ],
        "groups": [
            {"name": "QLIK\\At-
            tunityEnterpriseManagerDesigners"}
        ]
    },
    "operator_role": {
        "users": [
            {"name": "QLIK\\David.Foster"},
            {"name": "QLIK\\testAuth3"}
        ],
        "groups": [
            {"name": "QLIK\\At-
            tunityEnterpriseManagerOperators"}
        ]
    },
    "viewer_role": {
        "users": [
            {"name": "QLIK\\Laura.Todd"},
            {"name": "QLIK\\testAuth4"}
        ],
        "groups": [
            {"name": "QLIK\\At-
            tunityEnterpriseManagerViewers"}
        ]
    },

    "disable_inheritance": true

}
```

Response   `Header:`

```
HTTP/1.1 200 OK
Cache-Control: no-cache, no-store
Content-Length: 38
Content-Type: application/json; charset=utf-8
Server: Microsoft-HTTPAPI/2.0
Date: Mon, 26 Dec 2016 16:31:01 GMT
```

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	DESERIALIZE_ TO_TYPE	"Failed to deserialize json to type AemAuthorizationAcl: {message}"	Returned when the JSON format is invalid format. For example, such an error will be returned if the JSON contains an unknown role.
500	AEM_PUT_ SERVER_ACL_ INNER_ERR	Failed to put ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to put the server's ACL.
500	AEM_NO_ DOMAIN_IN_ USER	User "{userName}" must be preceded by a domain name, separated by a backslash. **Example:** domain_name\user_name.	Returned when the domain is missing from the user name.
500	AEM_NO_ DOMAIN_IN_ GROUP	Group "{groupName}" must be preceded by a domain name, separated by a backslash. **Example:** domain_name\group_name.	Returned when the domain is missing from the group name.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_NO_ADMIN_ ON_SERVER	Requested server "{serverName}" has no admin user. At least one user or group must be assigned to the "admin" role.	Returned when there is no admin on the server. Possible reasons: » The request JSON is set to `disable_ inheritance=tr ue` and the explicit admin role in the JSON is empty. » The JSON is set to `disable_ inheritance =true`, the explicit admin role in the JSON is empty, and the parent levels do not have an admin user to inherit.
500	AEM_USER_ ASSIGNED_TO_ MULTIPLE_ROLES	User "{userName}" is assigned to multiple roles. Users can only be assigned to a single role.	Returned when a user is assigned to multiple roles.
500	AEM_GROUP_ ASSIGNED_TO_ MULTIPLE_ROLES	Group "{groupName}" is assigned to multiple roles. Groups can only be assigned to a single role.	Returned when a group is assigned to multiple roles.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_USER_ GROUP_ MULTIPLE_ ASSIGNED	"{userName/groupName}" is assigned to multiple roles or to the same role twice. Users/groups can only be assigned once, and to a single role.	Returned either when the specified user already exists as a group in the same/another role, or the specified group already exists as a user in the same/another role.

GetServer

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]/def
Description	Retrieves the definition (Connection Properties) of the specified server. This method can be used together with `PutServer` in order to update the connection properties of an existing server. First call `GetServer`, then edit the returned properties as required, and finally, call `PutServer`.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

Body
```
{
        "$type": "{string}",
        "name": "{string}",
        "description": "{string}",
        "host": "{string}",
        "port": "{string}",
        "username": "{string}",
        "password": "{string}",
        "verify_server_certificate": "{bool}",
        "monitored": "{bool}"

}
```

Response Parameters

Name	Description
$type	The server's type. Can either be `AemReplicateServer` or `AemComposeServer`.
name	The name of the server.
description	The description of the server.
host	The host name or IP address of the server.
port	The port through which the server is accessed.
username	The user name to connect to the Replicate/Compose Server.
password	The password to connect to the Replicate/Compose Server. **Note** The password identifier (GUID) that is returned by `GetServer` is valid only for the session in which it was generated. Using it in another session (for example as input for `PutServer`) will result in exception.
verify_server_ certificate	When "true", Qlik Enterprise Manager verifies that the Server certificate is trusted, thereby reducing the chance of "man-in-the-middle" attacks. For details on setting this option, see PutServer.
monitored	Whether to retrieve tasks and messages from this server or not.

cURL Example

Request   CURL.EXE -i -k --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGr" https://computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsrv1/def

Response   Headers:

　HTTP/1.1 200 OK

　Cache-Control: no-cache, no-store

　Content-Length: 224

　Content-Type: application/json; charset=utf-8

　Server: Microsoft-HTTPAPI/2.0

　Date: Mon, 26 Dec 2016 13:18:27 GMT

Payload:

```
{

     "$type":"AemReplicateServer",

     "name":"myrepsrv1",

     "description":"replicate for business",

     "host":"rep2018r2gs7.qa.int",

     "port":"443",

     "username":"administrator",

     "password":"{S:98bdfd05-d16e-4afb-ad24-256c4dc6aae9}",

     "verify_server_certificate":"true",

     "monitored":"true"

}
```

Error Response

All of the general errors as well as the following error:

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_GET_ SERVER_INNER_ ERR	Failed to get server "{server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to get the server details.

GetServerAcl

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]?action=acl
Description	Retrieves the explicit ACL defined in Qlik Enterprise Manager for the specified server, including a Boolean indication if ACL inheritance is disabled or enabled for the server.
	The method returns the explicit ACL only. In other words, it does not return inherited ACLs.
	If all of the servers ACLs are inherited (i.e. no ACL was explicitly defined for the server), an error will be returned indicating that no ACL was found.
	This method can be used together with `PutServerAcl` in order to update an existing server's ACL. First call `GetServerAcl`, then edit the returned roles as required, and finally, call `PutServerAcl`.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	**Host** [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

```
{

    "admin_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "designer_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "operator_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "viewer_role": {

                "users": [ { "name": "{string}"}, { "name": "{string}"}, … ],

                "groups": [ { "name": "{string}"}, { "name": "{string}"}, … ]

                },

    "disable_inheritance": "{bool}"

}
```

Response Parameters

Name			Description
admin_role			
	users		An array of users assigned as Admins on the server.
		name	A single Admin user.
	groups		An array of groups assigned as Admins on the server.
		name	A single Admin group.
designer_ role			
	users		An array of users assigned as Designers on the server.
		name	A single Designer user.
	groups		An array of groups assigned as Designers on the server.
		name	A single Designer group.
operator_ role			
	users		An array of users assigned as Operators on the server.
		name	A single Operator user.
	groups		An array of groups assigned as Operators on the server.
		name	A single Operator group.
viewer_role			
	users		An array of users assigned as Viewers on the server.
		name	A single Viewer user.
	groups		An array of groups assigned as Viewers on the server.
		name	A single Viewer group.
disable_ inheritance			If set to "true", the server does not inherit ACLs from its ancestors (in addition to its explicit ACLs). If set to "false", the server inherits ACLs from its ancestors, in addition to any explicit ACLs.

cURL Example

Request `CURL.EXE -i -k --header "EnterpriseManager.APISessionID:`
`wCo0_KvjEUFROvfHF5KGr"`
`https://computer.network.net/attunityenterprisemanager/`
`api/v1/servers/myrepsrv1?action=acl"`

Response Headers:

```
HTTP/1.1 200 OK

Cache-Control: no-cache, no-store

Content-Length: 502

Content-Type: application/json; charset=utf-8

Server: Microsoft-HTTPAPI/2.0

Date: Mon, 26 Dec 2016 13:18:27 GMT
```

```
Payload:
{
    "admin_role": {
            "users": [
                    {"name": "QLIK\\Paul.Clarke"},
                    {"name": "QLIK\\testAuth1"}
            ],
            "groups": [
                    {"name": "QLIK\\At-
                    tunityEnterpriseManagerAdmins"}
            ]
    },
    "designer_role": {
            "users": [
                    {"name": "QLIK\\Marisa.Lewis"},
                    {"name": "QLIK\\testAuth2"}
            ],
            "groups": [
                    {"name": "QLIK\\At-
                    tunityEnterpriseManagerDesigners"}
            ]
    },
    operator_role": {
            "users": [
                    {"name": "QLIK\\David.Foster"},
                    {"name": "QLIK\\testAuth3"}
            ],
            "groups": [
                    {"name": "QLIK\\At-
                    tunityEnterpriseManagerOperators"}
            ]
    },
    "viewer_role": {
            "users": [
                    {"name": "QLIK\\Laura.Todd"},
                    {"name": "QLIK\\testAuth4"}
            ],
            "groups": [
```

```
                              {"name": "QLIK\\At-
                     tunityEnterpriseManagerViewers"}
                  ]
             },

          "disable_inheritance": true

       }
```

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_GET_ SERVER_ACL_ INNER_ERR	Failed to get ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to get the server ACL.
500	AEM_SERVER_ HAS_NO_ACL	ACL for server "{server}" could not be found.	Returned if no explicit ACL is defined for the server. **Note** A server that does not have its own explicit ACL inherits the ACL from its ancestors. Inherited ACLs are *not* returned by this method.

GetServerList

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers
Description	Retrieves a list of servers under Qlik Enterprise Manager management as well as each server's properties.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

```
Body        {

        "serverList": [{

                        "$type": "{string}",

                        "name": "{string}",

                        "description": "{string}",

                        "host": "{string}",

                        "port": "{string}",

                        "state": "{enum_server_state}",

                        "message": "{string}",

                        "platform": "{enum_server_platform}",

                        "version": "{string}",

                        "last_connection":"{string}"

                }, …


            ]

        }
```

Response Parameters

Name	Description
$type	The server's type, which can either be `ReplicateServerInfo` or `ComposeServerInfo`.
name	The name of the server.
description	The description of the server.
host	The host name or IP address of the server.
port	The port through which the server is accessed.
state	The current state of the server.
message	The error message if Qlik Enterprise Manager fails to connect and monitor the server.
platform	The operating system on which the server is installed.

Name	Description
version	The version of the server.
last_connection	The date and time of the last successful sync/retrieval of tasks and messages.

cURL Example

Request   CURL.EXE -i -k --header "EnterpriseManager.APISessionID:
wCo0_KvjEUFROvfHF5KGr
https://computer.network.net/attunityenterprisemanager/
api/v1/servers

Response

```
Headers:

    HTTP/1.1 200 OK

    Cache-Control: no-cache, no-store

    Content-Length: 1658

    Content-Type: application/json; charset=utf-8

    Server: Microsoft-HTTPAPI/2.0

Date: Mon, 26 Dec 2016 13:18:27 GMT

Payload:

{

   "serverList": [{

                "$type": "ReplicateServerInfo",

                "name": "RepBS",

                "description": "replicate for business",

                "host": "rep2008r2gs7.qa.int",

                "port": "443",

                "state": "MONITORED",

                "message": "",

                "platform": "WINDOWS",

                "version": "5.2.0.156",

                "last_connection": "2016-12-18T02:23:30",

        }, {

                "$type": "ReplicateServerInfo",

                "name": "RepDev",

                "description": "replicate for developers",

                "host": "rep2008r2gs8.qa.int",

                "port": "443",

                "state": "NOT_MONITORED",

                "message": "Server changed status to Not
                Monitored.",
```

```
                    "platform": "WINDOWS",

                    "version": "5.2.0.156",

                    "last_connection": "2016-11-16T05:30:00",

        }, {

                    "$type": "ReplicateServerInfo",

                    "name": "RepProd",

                    "description": "replicate for production",

                    "host": "rep2008r2gs9.qa.int",

                    "port": "443",

                    "state": "ERROR",

                    "message": "REPLICATE-E-REPSRVNFND, Replicate
                    server 'Rep 5003' not found. Last Connection:
                    12:21 PM",

                    "platform": "WINDOWS",

                    "version": "5.2.0.156",

                    "last_connection": "2016-11-16T05:30:00",

                    }

                ]

            }
```

DeleteServer

General

URL   https://[host]/attunityenterprisemanager/api/v1/servers/[server]/def

Description   When this method is called, Qlik Enterprise Manager will:

» Delete the specified server from Qlik Enterprise Manager

» Stop monitoring any tasks that were defined on the server

» Delete all messages related to the server from the Message Center

» Delete all user roles defined for the server, the server tasks, and the server endpoints

> **Note**   The above operations will be performed, regardless of whether the server is currently being monitored or in an error state.

HTTP Method	DELETE
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

cURL Example

Request	`curl -i -k -X DELETE --header` `"EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --` `header "Content-Length: 0"` `https://computer.network.net/attunityenterprisemanager/api/v` `1/` `servers/myrepsrv1/def`
Response	`Header:` `        HTTP/1.1 200 OK` `        Cache-Control: no-cache, no-store` `        Content-Length: 38` `        Content-Type: application/json; charset=utf-8` `        Server: Microsoft-HTTPAPI/2.0` `        Date: Mon, 26 Dec 2016 16:31:01 GMT`

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_SERVER_ NOT_FOUND	Requested server "{server}" could not be found.	The server name is unknown to Qlik Enterprise Manager.
500	AEM_DELETE_ SERVER_INNER_ ERR	Failed to delete requested server "{server}".	Qlik Enterprise Manager encountered an error/exception when trying to delete the server.

DeleteServerAcl

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]?action=acl

Description	Deletes the explicit ACL defined in Qlik Enterprise Manager for the specified server.
	Inherited ACLs are not affected by this method.
	Once the explicit ACL is deleted from the server, all ACLs will be automatically inherited from the server's ancestors.
HTTP Method	DELETE
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

cURL Example

Request	CURL.EXE -i -k -X DELETE --header
	"EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGr" --
	header
	https://computer.network.net/attunityenterprisemanager/
	api/v1/servers/myrepsrv1?action=acl"

Response	Header:
	HTTP/1.1 200 OK
	Cache-Control: no-cache, no-store
	Content-Length: 38
	Content-Type: application/json; charset=utf-8
	Server: Microsoft-HTTPAPI/2.0
	Date: Mon, 26 Dec 2016 16:31:01 GMT

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_DELETE_ SERVER_ACL_ INNER_ERR	Failed to delete ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to delete the server's ACL.
500	AEM_SERVER_ HAS_NO_ACL	ACL for server "{server}" could not be found.	Returned when the specified server has no explicit ACL defined.

GetTaskList

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/{ServerName}/tasks
Description	Receive a list of tasks per selected and authorized server. For each task, the API returns a few parameters.
Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

Body
```
{
    "taskList": [{
        "name": "{string}",
        "state": "{enum task_state}",
        "stop_reason": "{enum stop_reason}",
        "message": "{string}",
        "assigned_tags": ["string", "string", "string", …]
    }, {
        "name": "{string}",
        "state": "{enum task_state}",
        "stop_reason": "{enum stop_reason }",
        "message": "{string}",
        "assigned_tags": ["string", "string", "string", …]
    }, {
        "name": "{string}",
        "state": "{enum task_state}",
        "stop_reason": "{enum stop_reason}",
        "message": "{string}",
        "assigned_tags": ["string", "string", "string", …]
    }
    ]
}
```

Response Parameters

Name	Description
name	The name of the task.
state	The current state of the task.

Name	Description
stop_reason	The reason the task has stopped. For Compose tasks, this will always be `NONE`.
message	The message if the task stopped due to an error.
assigned_tags	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

cURL Example

Request	`curl -i -k --header "EnterpriseManager.APISessionID: wCo0_` `KvjEUFROvfHF5KGrw"` `https://computer.network.net/attunityenterprisemanager/` `api/v1/servers/myrepsrv1/tasks`

Response Headers:

```
HTTP/1.1 200 OK

Cache-Control: no-cache, no-store

Content-Length: 205

Content-Type: application/json; charset=utf-8

Server: Microsoft-HTTPAPI/2.0

Date: Mon, 26 Dec 2016 11:18:53 GMT
```

Payload:

```
{

  "taskList": [{

      "name": "Task1",

      "state": "RUNNING",

      "stop_reason": "NONE",

      "message": "NONE",

      "assigned_tags": ["MyTag1", "MyTag2", "MyTag3"]

    }, {

      "name": " Task2",

      "state": "STOPPED",

      "stop_reason": "FULL_LOAD_ONLY_FINISHED",

      "message": "NONE,

      "assigned_tags": ["MyTag5"]

    }, {

      "name": "Task3",

      "state": "RUNNING",

      "stop_reason": "NONE",

      "message": "NONE",

      "assigned_tags": []

    }

  ]

}
```

Errors

See general errors.

GetTaskDetails

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {ServerName}/tasks/{TaskName}
Description	Retrieves details about a selected and authorized task. The API returns full monitoring information related to the selected task.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myserver1
URL	TaskName [string]	Yes	SalesDBBackup
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body for a Replicate Task

```
{

    "task":{
        "type":"{string}",
        "name":"{string}",
        "description":"{string}",
        "state":"{enum task_state}",
        "message": "{string}",
        "source_endpoint":{
                "name":"{string}",
                "type":"{string}"
        },
        "target_endpoint":{
                "name":"{string}",
```

```
            "type":"{string}"
        },
        "cdc_event_counters":{
                "applied_insert_count":"{int64}",
                "applied_update_count":"{int64}",
                "applied_delete_count":"{int64}",
                "applied_ddl_count":"{int64}"
        },
        "full_load_counters":{
                "tables_completed_count":"{int64}",
                "tables_loading_count":"{int64}",
                "tables_queued_count":"{int64}",
                "tables_with_error_count":"{int64}",
                "records_completed_count":"{int64}",
                "estimated_records_for_all_tables_count":"{int64}"
                },
        {
        "full_load_completed":"{bool}",
        "full_load_start":"{string}",
        "full_load_end":"{string}",
        },{
        "full_load_throughput":{
                "source_throughput_records_count":"{int32}",
                "source_throughput_volume":"{int32}",
                "target_throughput_records_count":"{int32}",
                "target_throughput_volume":"{int32}"
                },{
        "cdc_throughput": {
                "source_throughput_records_count": {
                "current": "{int32}"
                },
                "source_throughput_volume": {
                "current": "{int32}"
                },
                "target_throughput_records_count": {
                "current": "{int32}"
                },
                "target_throughput_volume": {
                "current": "{int32}"
                }
        },{
        "cdc_transactions_counters":{
```

```
                "commit_change_records_count":"{int64",
                "rollback_transaction_count":"{int64}",
                "rollback_change_records_count":"{int64}",
                "rollback_change_volume_mb":"{int64}",
                "applied_transactions_in_progress_count":"{int64}",
                "applied_records_in_progress_count":"{int64}",
                "applied_comitted_transaction_count":"{int64}",
                "applied_records_comitted_count":"{int64}",
                "applied_volume_comitted_mb":"{int64}",
                "incoming_accumulated_changes_in_memory_count":"
    {int64}",
                "incoming_accumulated_changes_on_disk_count":"{int64}"
                "incoming_applying_changes_in_memory_count":"{int64}",
                "incoming_applying_changes_on_disk_count":"{int64}",
                },{
        "cdc_latency":{
                "source_latency":"{int32}",
                "total_latency":"{int32}",
                },{
        "replicate_profile":"{enum replicate_profile}",
        "task_stop_reason":"{enum task_stop_reason}",
        "memory_mb":{int64},
        "cpu_percentage":"{int32}",
        "disk_usage_mb":"{int64}",
        "data_error_count":"{int64}",
        "options":"full_load_enabled"":"{bool}","apply_changes_
enabled":"{bool}","store_changes_enabled":"{bool}","audit_
changes_enabled":"{bool}"},
        "log_stream_staging":"{string}",
        "assigned_tags": ["string", "string", "string", …]
        }
}
```

Response Parameters for Replicate Tasks

Name	Description
type	The task type: ReplicateTaskInfoDetailed
name	The name of the task.

Name	Description
description	The task description. If there is no description, an empty string will be returned.
State	The current state of the task.
message	The message returned if the task stopped due to error.
source_endpoint	
name	The name of the source endpoint.
type	The source endpoint type.
target_endpoint	
name	The name of the source endpoint.
type	The source endpoint type.
cdc_event_counters	All numeric data concerning CDC events
applied_insert_count	The number of records added in total for all tables
applied_update_count	The number of records updated in total for all tables
applied_delete_count	The number of records deleted in total for all tables
applied_ddl_count	The total number of metadata changes, such as add column
full_load_counters	All numeric data concerning Full Load events
tables_completed_count	The number of tables that have been loaded into the target endpoint
tables_loading count	The number of tables that are currently being loaded into the target endpoint
tables_queued_count	The number of tables that are waiting to be loaded due to an error
tables_with_error_count	The number of tables that could not be loaded due to an error
records_completed_count	The total number of records that have completed loading into the target endpoint

Name	Description
estimated_records_for_all_tables_count	The estimated number of records remaining to be loaded into the target endpoint
full_load_completed	Indicates whether the full load process has ended
full_load_start	The start time of the full load process Format: YYY MM DD Timezone: UTC
full_load_throughput	Indicates how fast the table records are being replicated to the target endpoint (by number or volume of records)
source_throughput_records_count	The current source throughput, in rec/sec
source_throughput_volume	The current source throughput, in kbyte/sec
target_throughput_records_count	The current target throughput, in rec/sec
target_throughput_volume	The current target throughput, in kbyte/sec
cdc_throughput	Indicates how fast the table records are being replicated to the target endpoint (by number or volume of records). Refers only to the current/last CDC.
source_throughput_records_count	The current source throughput, in rec/sec
source_throughput_volume	The current source throughput, in kbyte/sec
target_throughput_records_count	The current target throughput, in rec/sec
target_throughput_volume	The current target throughput, in kbyte/sec
cdc_transaction_counters	All numeric data concerning CDC transactions
commit_change_records_count	The number of COMMIT change records
rollback_tranaction_count	The number of ROLLBACK transactions
rollback_change_records_count	The number of ROLLBACK change records
rollback_change_volume_mb	The volume of ROLLBACK change, in MB

Name	Description
applied_transactions_in_ progress_count	The number of transactions in progress
applied_records_in_progress_ count	The sum of all records/events in all In-Progress transactions
applied_committed_transaction_ count	The number of transactions committed
applied_records_committed_ count	The sum of all records/events in all Completed transactions
applied_volume_committed_mb	The sum of all volume/events in all Completed transactions, in MB
incoming_accumulated_ changes_in_memory_count	The number of changes accumulated in memory until source commit
incoming_accumulated_ changes_on_disk_count	The number of changes accumulated on disk until source commit
incoming_applying_changes_in_ memory_count	The number of changes in memory during apply and until target commit
incoming_applying_changes_on_ disk_count	The number of changes on disk during apply and until target commit
cdc_latency	CDC latency information
source_latency	The time gap between the original change in the source endpoint and capturing it, in hh:mm:ss
total_latency	The overall latency (source latency + target latency + apply latency), in hh:mm:ss
replicate_profile	The replication type between endpoints (unidirectional or bidirectional)
task_stop_reason	The reason the task stopped
memory_mb	The current utilization of memory, in MB. A task's memory utilization is sampled every 10 seconds. When the task is not running, the value is set to zero (0).

Name	Description
cpu_percentage **Notes** Only available for Replicate tasks running on Replicate 6.2 and above. When not available, this parameter will be returned as -1.	The current CPU usage of the Replicate task process.
disk_usage_mb	The current utilization of disk space, in MB. A task's disk utilization is sampled every minute.
data_error_count	The total number of data errors in all tables involved in the task. The count is affected by data errors and the **Reset Data Errors** option available when you drill down to a task.
full_load_enabled	See Task Options.
apply_changes_enabled	See Task Options.
store_changes_enabled	See Task Options.
audit_changes_enabled	See Task Options.
log_stream_staging	If the task is writing to/reading from the Log Stream staging folder, the name of the associated Log Stream Staging task will be returned. Otherwise, an empty string will be returned.
assigned_tags	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

Response Body for a Compose Task

```
{
        "$type": "{string}",
        "project": "{string}",
        "loading_completed": "{bool}",
        "loading_start": "{string}",
        "loading_end": "{string}",
        "options": {
                "full_load_enabled": "{bool}",
                "apply_changes_enabled": "{bool}"
        },
        "loading_counters": {
                "tables_total_count": "{int64}",
                "tables_completed_count": "{int64}",
                "tables_loading_count": "{int64}",
                "tables_queued_count": "{int64}",
                "tables_with_error_count": "{int64}",
                "commands_total_count": "{int64}",
                "commands_completed_count": "{int64}"
        },
        "name": "{string}",
        "message": "{string}",
        "state": "{enum task_state}",
        "description": "{string}",
        "source_endpoint": {
                "name": "{string}",
                "type": "{string}"
        },
        "target_endpoint": {
                "name": "{string}"
                "type": "{string}"
        },
        "assigned_tags": ["string", "string", "string", …]
}
```

Response Parameters for Compose Tasks

Name	Description
type	The task type: ComposeTaskInfoDetailed

Name	Description
project	The name of the Compose project
name	The name of the task
description	The task description. If there is no description, an empty string will be returned.
state	The current task state
message	The message returned if the task stopped due to error.
options	
full_load_enabled	Indicates whether the Full Load option is enabled. Can be "true" or "false"
apply_changes_enabled	Indicates whether the Change Processing option is enabled. Can be "true" or "false"
source_endpoint	
name	The logical name of the landing database.
type	The landing database type.
target_endpoint	
name	The logical name of the storage database.
type	The storage database type.
loading_completed	Indicates whether the loading process has completed. Can be "true" or "false"
loading_start	The start time of the loading process Format: YYY MM DD Timezone: UTC
loading_end	The end time of the loading process Format: YYY MM DD Timezone: UTC
loading_counters	
tables_total_count	The total number of tables.

Name	Description
tables_completed_count	The number of tables that have been loaded into the target endpoint
tables_loading count	The number of tables that are currently being loaded into the target endpoint
tables_queued_count	The number of tables that are waiting to be loaded due to an error
tables_with_error_count	The number of tables that could not be loaded due to an error
commands_total_count	The total number of commands executed
commands_completed_count	The total number of commands completed
assigned_tags	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

cURL Example for Replicate Tasks

Request
```
CURL.EXE -i -k --header "EnterpriseManager.APISessionID:
{SessionID}" https://{host}/attunityservices/api/v1/servers/
myrepsrv1/tasks/SalesDBBackup
```

Response ```
Headers:

   HTTP/1.1 200 OK

   Cache-Control: no-cache, no-store

   Content-Length: 1658

   Content-Type: application/json; charset=utf-8

   Server: Microsoft-HTTPAPI/2.0

Date: Mon, 26 Dec 2016 13:18:27 GMT

Payload:

{

  "task":{

    "name":"SalesDBBackup",

    "description":"Backs up annual sales",

    "state":"RUNNING",

    "message":"NONE",

    "source_endpoint":{

        "name":"Customer Management",

        "type":"Oracle",

    },

    "target_endpoint":{

        "name":"Business Management",

        "type":"Microsoft SQL Server",

    },

  "cdc_event_counters":

    {"applied_insert_count":0,

    "applied_update_count":0,

    "applied_delete_count":0,

    "applied_ddl_count":0

  },{

  "full_load_counters":{
```

```
    "tables_completed_count":3,

    "tables_loading_count":0,

    "tables_queued_count":0,

    "tables_with_error_count":0,

    "records_completed_count":177446,

    "estimated_records_for_all_tables_count":177446,

    "full_load_completed":true,

    "full_load_start":"2016-12-18T02:23:30",

    "full_load_end":"2016-12-18T02:23:35",

},{

"full_load_throughput":{

  "source_throughput_records_count":0,

  "source_throughput_volume":0,

  "target_throughput_records_count":0,

  "target_throughput_volume":0},

},{

"cdc_throughput":{

  "source_throughput_records_count": {

    "current": 0

    },

    "source_throughput_volume": {

    "current": 0

    },

    "target_throughput_records_count": {

    "current": 0

    },

    "target_throughput_volume": {

    "current": 0

    }
```

```
          },{
            "cdc_transactions_counters":{
            "commit_change_records_count":0,
            "rollback_transaction_count":0,
            "rollback_change_records_count":0,
            "rollback_change_volume_mb":0,
            "applied_transactions_in_progress_count":0,
            "applied_records_in_progress_count":0,
            "applied_comitted_transacion_count":0,
            "applied_records_comitted_ count":0,
            "applied_volume_comitted_mb":0,
            "incoming_accumulated_changes_in_memory_count":0,
            "incoming_accumulated_changes_on_disk_count":0,
            "incoming_applying_changes_in_memory_count":0,
            "incoming_applying_changes_on_disk_count":0},
          },{
          "cdc_latency":{
            "source_latency":"00:00:00",
            "total_latency":"00:00:00"},
          },{
          "replicate_profile":"UNIDIRECTIONAL",
          "task_stop_reason":"NORMAL",
          "memory_mb":57,
          "cpu_percentage":30,
          "disk_usage_mb":0,
          "data_error_count":0,
          "options":{"full_load_enabled":true,"apply_changes_
          enabled":true,"store_changes_enabled":false,"audit_changes_
          enabled":false}
          "log_stream_staging":"MyLogStreamTask",
```

```
        "assigned_tags": ["MyTag1", "MyTag2", "MyTag3"]

    }

}
```

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Qlik Enterprise Manager Code	Text	Description
500	AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.

GetTableList

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {ServerName}/tasks/{TaskName}/tables?schema= {schema}&table={table}&includequeued= {includequeued}&includeloading= {includeloading}&includecompleted= {includecompleted}&includechangeprocessing= {includechangeprocessing}&includeerror={includeerror}
Description	Retrieves the list of tables of a specific Replicate task that match the specified state(s), table schema(s), and table name(s). This is useful for automation processes, for example, as it allows you to retrieve tables in a certain state (e.g. suspended) and then peform an operation on them (e.g. `ReloadTable`).
Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Description
URL	host [string]	Yes	The host name of the Qlik Enterprise Manager server. **Example:** computer.network.net
URL	ServerName [string]	Yes	The Replicate Server name as defined on Qlik Enterprise Manager. **Example:** myrepsrv1
URL	SchemaName [string]	No	The default is all source schemas. Specifying a specific schema name will retrieve all tables from the specified schema. Specifying a pattern or letters included in the schema name will retrieve all tables from schemas that match the pattern or that include the specified letters. For example, specifing "ad" will retrieve tables from the "**ad**venture" and "tr**ad**emark" schemas.

Location	Name	Required	Description
URL	TableName [string]	No	The default is all source tables. Specifying a specific table name will retrieve the specified table. Specifying a pattern or letters included in the table name will retrieve all tables that match the pattern or that include the specified letters. For example, specifing "em" will retrieve the "**em**ployees" and "t**em**p" tables.
URL	includequeued [boolean]	No	Whether to retrieve tables in a queued state. Default is false.
URL	includeloading [boolean]	No	Whether to retrieve tables in a loading state. Default is false.
URL	includecompleted [boolean]	No	Whether to retrieve tables in a completed state. Default is false.
URL	includechangeprocessing [boolean]	No	Whether to retrieve tables in a Change Processing state (i.e. that are having changes applied to them). Default is false.
URL	includeerror [boolean]	No	Whether to retrieve tables in an error state. Default is false.
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

```
{
    "tablelist":[
```

```
        {
            "schema":"{string}",
            "table":"{string}",
            "state":"{enum table_state}"
        },
        {
            "schema":"{string}",
            "table":"{string}",
            "state":"{enum table_state}"
        },
        {
            "schema":"{string}",
            "table":"{string}",
            "state":"{enum table_state}"
        },
        {
            "schema":"{string}",
            "table":"{string}",
            "state":"{enum table_state}"
        }
    ]
}
```

Response Parameters

Name	Description
schema	The name of the schema.
table	The name of the table.
state	The current state of the table.

cURL Example

Request	curl -i -k --header "EnterpriseManager.APISessionID: wCo0_ KvjEUFROvfHF5KGrw" https://computer.network.net/attunityenterprisemanager/api/v1/ servers/{server}/tasks/{task}/tables?

Response Headers:

```
HTTP/1.1 200 OK

Cache-Control: no-cache, no-store

Content-Length: 205

Content-Type: application/json; charset=utf-8

Server: Microsoft-HTTPAPI/2.0

Date: Mon, 26 Dec 2016 11:18:53 GMT
```

Payload:

```
{
   "tablelist":[
      {
         "schema":"MYSCHEMA",
         "table":"TABLE1",
         "state":"TABLE_CHANGE_PROCESSING"
      },
      {
         "schema":"MYSCHEMA",
         "table":"TABLE2",
         "state":"TABLE_LOADING"
      },
      {
         "schema":"MYSCHEMA",
         "table":"TABLE3",
         "state":"TABLE_QUEUED"
      },
      {
         "schema":"MYSCHEMA",
         "table":"TABLE4",
         "state":"TABLE_QUEUED"
      }
   ]
}
```

Errors

All of the general errors as well as the errors listed in the table below.

HTTP Code	Qlik Enterprise Manager Code	Text	Description
500	AEM_TABLE_ LIST_INNER_ ERR	Failed to retrieve table list for replication task "{task}" on server "{server}". Error: "{message}"	Returned when the table list cannot be retrieved.
500	AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.

GetTableStatuses

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/{server}/tasks/{task}/tables?action=getstatus&schema={schema}&table={table}&includequeued={includequeued}&includeloading={includeloading}&includecompleted={includecompleted}&includechangeprocessing={includechangeprocessing}&includeerror={includeerror}
Description	Retrieves the tables statuses of a specific Replicate task for all tables that match the specified state(s), table schema(s), and table name(s). This is useful for automation processes, for example, as it allows you to retrieve tables in a certain state (e.g. suspended) and then peform an operation on them (e.g. ReloadTable).
Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Description
URL	host [string]	Yes	The host name of the Qlik Enterprise Manager server. **Example:** computer.network.net
URL	server [string]	Yes	The Replicate Server name as defined on Qlik Enterprise Manager. **Example:** myrepsrv1
URL	task [string]	Yes	The Replicate task name.

Location	Name	Required	Description
URL	schema [string]	No	The default is all source schemas. Specifying a specific schema name will retrieve all tables from the specified schema. Specifying a pattern or letters included in the schema name will retrieve all tables from schemas that match the pattern or that include the specified letters. For example, specifing "ad" will retrieve tables from the "**ad**venture" and "tr**ad**emark" schemas.
URL	table [string]	No	The default is all source tables. Specifying a specific table name will retrieve the specified table. Specifying a pattern or letters included in the table name will retrieve all tables that match the pattern or that include the specified letters. For example, specifing "em" will retrieve the "**em**ployees" and "t**em**p" tables.
URL	includequeued [boolean]	No	Whether to retrieve tables in a queued state. Default is false.
URL	includeloading [boolean]	No	Whether to retrieve tables in a loading state. Default is false.

Location	Name	Required	Description
URL	includecompleted [boolean]	No	Whether to retrieve tables in a completed state. Default is false.
URL	includechangeprocessing [boolean]	No	Whether to retrieve tables in a Change Processing state (i.e. that are having changes applied to them). Default is false.
URL	includeerror [boolean]	No	Whether to retrieve tables in an error state. Default is false.
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

```
{
    "table_details":[

      {
          "schema_on_source":"{string}",
          "table_on_source":"{string}",
          "schema_on_target":"{string}",
          "table_on_target":"{string}",
          "state":"{enum}",
          "data_errors_count":"{int64}",
          "table_full_load_info":{
             "start_time":"{string}",
             "end_time":"{string}",
             "estimated_row_count":"{int64}",
             "estimated_end_time":"{string}",
             "transferred_row_count":"{int64}",
             "transferred_volume_mb":"{int64}"
          },
          "table_cdc_info":{
             "insert_count":"{int64}",
             "update_count":"{int64}",
             "delete_count":"{int64}",
             "ddl_count":"{int64}",
```

```
            "last_update_time":"{string}",
            "cached_insert_count":"{int64}",
            "cached_update_count":"{int64}",
            "cached_delete_count":"{int64}"
        }
      }
    ]
}
```

Response Parameters

Name	Description
schema_on_source	Source schema name.
table_on_source	Source table name.
schema_on_target	Target schema name. If this information not available, an empty string will be returned.
table_on_target	Target table name. If this information not available, an empty string will be returned.
state	An enum reflecting the table state. See Table state.
data_errors_count	The number of data errors encountered when replicating the table.
table_full_load_info	
start_time	Date-time of when the table full load started. Timezone: UTC ; Style: ISO8601 (consistent with GetTaskDetails).
end_time	Date-time of when the table full load started. Timezone: UTC ; Style: ISO8601 (consistent with GetTaskDetails).
estimated_row_count	Relevant only if table in certain states (loading/queued).
estimated_end_time	Relevant only if table in certain states (loading/queued). Timezone: UTC ; Style: ISO8601 (consistent with GetTaskDetails).
transferred_row_count	The number of rows transferred to the target, after the source filtering, but before the target filtering.
transferred_volume_mb	The amount of bytes transferred to the target, after the source filtering, but before the target filtering.
End of table_full_load_info	
table_cdc_info	

Name	Description
insert_count	The number of records inserted to the target table.
update_ count	The number of records updated in the target table.
delete_ count	The number of records deleted in the target table.
ddl_count	The number of DDL operations performed on the target table.
last_ update_time	The last time that the table was updated on target. Timezone: UTC ; Style: ISO8601 (consistent with GetTaskDetails).
cached_ insert_count	INSERT operations that were cached during Full Load.
cached_ update_ count	UPDATE operations that were cached during Full Load.
cached_ delete_ count	DELETE operations that were cached during Full Load.
End of table_ cdc_info	

cURL Example

Request   `curl -i -k --header "EnterpriseManager.APISessionID: wCo0_`
`KvjEUFROvfHF5KGrw"`
`https://computer.network.net/attunityenterprisemanager/api/v1/`
`servers/{server}/tasks/{task}/tables?`

Response

```
Headers:

    HTTP/1.1 200 OK

    Cache-Control: no-cache, no-store

    Content-Length: 205

    Content-Type: application/json; charset=utf-8

    Server: Microsoft-HTTPAPI/2.0

    Date: Mon, 26 Dec 2016 11:18:53 GMT

Payload:

{
  "table_details":[
     {
        "schema_on_source":"myschema1",
        "table_on_source":"mytable1",
        "schema_on_target":"",
        "table_on_target":"",
        "state":"TABLE_CHANGE_PROCESSING",
        "data_errors_count":0,
        "table_full_load_info":{
           "start_time":"2019-08-05T01:35:06",
           "end_time":"2019-08-05T01:35:06",
           "estimated_row_count":0,
           "estimated_end_time":null,
           "transferred_row_count":4,
           "transferred_volume_mb":1856
        },
        "table_cdc_info":{
           "insert_count":2,
           "update_count":0,
           "delete_count":0,
           "ddl_count":0,
           "last_update_time":null,
           "cached_insert_count":0,
           "cached_update_count":0,
           "cached_delete_count":0
        }
     },
     {
        "schema_on_source":"myschema2",
        "table_on_source":"mytable2",
        "schema_on_target":"",
        "table_on_target":"",
```

```
            "state":"TABLE_CHANGE_PROCESSING",
            "data_errors_count":0,
            "table_full_load_info":{
               "start_time":"2019-08-05T01:35:06",
               "end_time":"2019-08-05T01:35:31",
               "estimated_row_count":0,
               "estimated_end_time":null,
               "transferred_row_count":1000000,
               "transferred_volume_mb":464000000
            },
            "table_cdc_info":{
               "insert_count":0,
               "update_count":4,
               "delete_count":0,
               "ddl_count":0,
               "last_update_time":null,
               "cached_insert_count":0,
               "cached_update_count":0,
               "cached_delete_count":0

            }
         }
      ]
   }
```

Errors

All of the general errors as well as the errors listed in the table below.

HTTP Code	Qlik Enterprise Manager Code	Text	Description
500	AEM_SERVER_ NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.
500	AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.
500	AEM_TABLE_ STATUSES_ INNER_ERR	Failed to retrieve table statuses for replication task "{task}" on server " {server}". Error: "{message}"	Returned when the table statuses cannot be retrieved.

DeleteTask

General

URL	https[host]/attunityenterprisemanager/api/v1/servers/[server]/tasks/[task]?action=delete&deletetasklogs=[deletetasklogs]
Description	Deletes the specified task. The task's logs will be deleted only if `deletetasklogs=true` is specified in the URL.
HTTP Method	POST
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	TaskName [string]	Yes	SalesDBBackup
URL	deletetasklogs [bool]	Optional (default is false)	deletetasklogs=true
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw
Header	Content-Length:	Yes	"Content-Length: 0" Note: The specified value must be "0".

cURL Example

Request	`curl -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 0" https:// computer.network.net/attunityenterprisemanager/api/v1/ servers/myrepsrv1/tasks/ SalesDBBackup?action=delete&deletetasklogs=true`

Response	`Header:`
	
	 `HTTP/1.1 200 OK`
	
	 `Cache-Control: no-cache, no-store`
	
	 `Content-Length: 38`
	
	 `Content-Type: application/json; charset=utf-8`
	
	 `Server: Microsoft-HTTPAPI/2.0`
	
	 `Date: Mon, 26 Dec 2016 16:31:01 GMT`

Error response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_NOT_ FOUND	Replication task {task] on server {server} could not be found.	Returned if the task name is unknown to Qlik Enterprise Manager.
500	AEM_DELETE_ TASK_INNER_ERR	Replication task {task] on server {server} could not be deleted due to an error.	Returned if Enterprise Manager encounters an error/exception when trying to delete the task.
500	AEM_DELETE_ TASK_ERR	Replication task {task] on server {server} could not be deleted due to an error. {2}	Returned if Enterprise Manager encounters an error when trying to delete the task.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_NOT_ STOPPED	Replication task {task] on server {server} must be stopped before it can be deleted.	Returned if the replication task was running when `DeleteTask` attempted to delete it.

ExportTask

General

URL	https://{Host}/attunityenterprisemanager/api/v1/servers/ {ServerName}/tasks/{TaskName}?action=export&withendpoints= {withendpoints}
Description	Export definitions from the selected task on the selected server. The definitions always include task settings, tables/table patterns (include/exclude), table settings and global transformations. The endpoint definition is only exported along with the task definition if with endpoints=true is specified in the URL.
	Supported only from Replicate 5.2 and later.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	TaskName [string]	Yes	SalesDBBackup
URL	withendpoints [bool]	Yes	true/false

Location	Name	Required	Example
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response

JSON File (stream)

cURL Example

Request	CURL.EXE -i -k --header "EnterpriseManager.APISessionID: wCo0_ KvjEUFROvfHF5KGrw" https://-computer.network.net/attunityenterprisemanager/api/v1/servers/ myrepsrv1/tasks/SalesDBBackup?action=export&withendpoints=true
Response	JSON file (stream)

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500		ExportTask is only supported on Replicate 5.2 or above.	
500	AEM_ EXPORT_ TASK_NO_ PERMISSION_ ON_ ENDPOINT	Failed to export task {task} from Replicate server {server} as the logged in user does not have permission to access one or both of the task's endpoints.	Export all cannot be carried out because the user does not have permissions on one or more endpoints.

ImportTask

General

URL	https://{Host}/attunityenterprisemanager/api/v1/servers/{ServerName}/tasks/{task}?action=import
Description	Import a single task's JSON definitions provided in the request body into the requested server repository on the selected server.
	The ImportTask method enables importing all valid JSON definitions provided in the request body. This includes task settings, tables/table patterns (include/exclude), table settings and global transformations. Information about endpoints is included if it was included in the JSON file.
	When you import a task, Items that existed in the target server before the import and have no new JSON definition in the request body are not modified and not removed. This means that ImportTask provides no way of removing old definitions that are no longer needed.
	Supported only with Replicate 5.2 and later.
HTTP Method	POST
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	TaskName [string]	Yes	SalesDBBackup
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_KvjEUFROvfHF5KGrw

Location	Name	Required	Example
Header	Content-Length: This is the number of bytes in the content body. Note that the number of bytes that you specify must be exactly the same as the number of bytes in the JSON file. This number can be ascertained by copy-pasting the text into a text editor such as **Notepad ++** (which shows the number of bytes as "Length" at the bottom of its console).	Yes	"Content-Length: 3986"
Body	A JSON document to import [stream]	Yes	localServer1.json

Response

JSON File

cURL Example

cURL Example	CURL.EXE -i -k -X POST --header "Enter-priseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw " --header "Content-Length: 3986" --header "Content-Type: applic-ation/json" " https://-computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsrv1/tasks/SalesDBBackup?action=import" -T "C:\exports\SalesDBBackup.json"
Response	HTTP/1.1 100 Continue HTTP/1.1 200 OK Cache-Control: no-cache, no-store Content-Length: 0 Content-Type: application/json; charset=utf-8 Server: Microsoft-HTTPAPI/2.0 Date: Tue, 28 Feb 2017 17:45:41 GMT

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ IMPORT_ TASK_NO_ PERMISSION_ ON_ ENDPOINT	Failed to import task {task} to replication server {server} as the logged in user does not have permission to add or modify endpoints.	The task cannot be imported because it includes endpoint definitions, and the user does not have permissions to insert endpoints.
500	AEM_ IMPORT_ TASK_ CONTAIN_ ALIEN_ITEMS	Failed to import task {task} to replication server {server} as the JSON file contains unsupported objects.	The task cannot be imported because the stream contains items that cannot be imported (such as remote machines).
500	AEM_ IMPORT_ TASK_NAME_ DIFFER	Failed to import task {task} to replication server {server} as the JSON file contains conflicting tasks.	The task cannot be imported because the stream contains conflicting tasks.
500	AEM_ IMPORT_ TASK_ CONTAINS_ MULTIPLE_ TASKS	Failed to import task to replication server {server} as the JSON file contains multiple tasks. To import multiple tasks, use ImportAll instead.	The task cannot be imported since the stream contains multiple tasks, and the method can only import a single task.
500	AEM_TASK_ NOT_ IMPORTABLE	Failed to import task {task} as the task is running on server {server}. Stop the task and then try again.	Occurs when trying to import a running task.
500	AEM_ IMPORT_ TASK_ CONTENT_ EMPTY	Failed to import task {task} to replication server {server} as the JSON file is empty.	The task cannot be imported as the specified JSON file is empty.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ IMPORT_ TASK_ ENDPOINT_ DIFFER	Failed to import task {task} to server {server} as the endpoint names in the JSON file's "task" and "databases" sections are not the same.	The task cannot be imported as the endpoint names in the specified JSON file's "task" and "databases" sections are different.
500	AEM_ IMPORT_ TASK_NO_ ENDPOINT_ IN_SERVER	Failed to import task {task} to replication server {server} as the {role} endpoint {endpoint} does not exist on the target server.	The task cannot be imported as one of the endpoints specified in the exported JSON file does not exist on the target server.

StopTask

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {ServerName}/tasks/{TaskName}?action=stop&timeout={timeout}
Description	Stop the selected task
HTTP Method	POST
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	TaskName [string]	Yes	SalesDBBackup

Location	Name	Required	Example
URL	Timeout [int32]	Optional (default is 60 seconds)	60 (seconds)
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_KvjEUFROvfHF5KGrw
Header	Content-Length	Yes	Content-Length: 0 Note that the Content-Length value must be "0".

Response Body

Body	`{`
	
	    `"state":"{enum task_state}",`
	
	    `"error_message":""`
	
	`}`

Response Parameters

Name	Description
state [enum task_state]	The current state of the task
error_message	The description of the error

cURL Example

Request	`curl -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 0" https://computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsrv1/tasks/SalesDBBackup/?action=stop`

Response Header:

```
        HTTP/1.1 200 OK

         Cache-Control: no-cache, no-store

        Content-Length: 38

        Content-Type: application/json; charset=utf-8

        Server: Microsoft-HTTPAPI/2.0

        Date: Mon, 26 Dec 2016 16:31:01 GMT

      Payload:

   {

   "state":"STOPPED",

    "error_message":""

        }
```

Error response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_ ALREADY_ STOPPED	Replicate task {task} on server {server} is already stopped.	Cannot stop a task that is in Stopped state.
500	AEM_STOP_ TASK_INNER_ ERR	Failed to stop Replicate task {0} on server {1}: <{2}>	An error occurred while trying to stop the task.
500	AEM_STOP_ TASK_ TIMEOUT	A timeout occurred when trying to stop Replicate task {0} on server {1}	A timeout occurred while trying to stop the task.

RunTask

General

Replicate URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {ServerName}/tasks/{TaskName}?action=run&option= {option}&timeout={timeout}
Compose URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {ServerName}/tasks/{TaskName}?action=run&timeout={timeout}
Description	Run the selected task according to the specified option.
HTTP Method	POST
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	TaskName [string]	Yes	SalesDBBackup
URL	option [enum run_options]	This is required for Replicate tasks, but is not relevant for Compose tasks.	RELOAD_TARGET
URL	Timeout [int32]	Optional (default is 60 seconds)	60 (seconds)
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Location	Name	Required	Example
Header	Content-Type: [Type]	Yes if the run option = RESUME_ PROCESSING_ FROM_ TIMESTAMP or RECOVER_ USING_ CHECKPOINT_ STORED_ON_ TARGET	"Content-Type: application/json" You can either specify the `Content-Type` payload inline or by referencing a JSON file. The payload format differs slightly according to whether it is specified inline or by referencing a JSON file. For more information, see Body below.
Header	Content-Length: This is the number of bytes in the content body. Note that the number of bytes that you specify must be exactly the same as the number of bytes in the JSON file. This number can be ascertained by copy-pasting the text into a text editor such as **Notepad ++** (which shows the number of bytes as "Length" at the bottom of its console).	Yes if the option = RESUME_ PROCESSING_ FROM_ TIMESTAMP or RECOVER_ USING_ CHECKPOINT_ STORED_ON_ TARGET	"Content-Length: 37" For example commands, see cURL Resume Processing from Timestamp Examples.
Body	`cdcposition`	Yes	The `cdcposition` parameter can either be specified inline or in an external JSON file. The format for both is described in Request Body Format below.

Request Body Format

If the task option is RESUME_PROCESSING_FROM_TIMESTAMP, then the format should be:

JSON File Format:

```
{"cdcposition":"timestamp"}
```

Example:

```
{"cdcposition":"2017-03-07T11:19:03"}
```

Inline Format:

```
"{\"cdcposition\":\"timestamp\"}"
```

Example:

```
"{\"cdcposition\":\"2017-03-07T11:19:03\"}"
```

For example commands, see cURL Resume Processing from Timestamp Examples.

If the task option is RECOVER_USING_CHECKPOINT_STORED_ON_TARGET, then the format should be:

JSON File Format:

```
{"cdcposition":"target_checkpoint"}
```

Example:

```
{"cdcposition":"Checkpoint:V1#1#timestamp:2017-02-14T12:34:44#0#0#*#0#0"}
```

Inline Format:

```
"{\"cdcposition\":\"target_checkpoint\"}"
```

Example:

```
"{\"cdcposition\":\"Checkpoint:V1#1#timestamp:2017-02-
14T12:34:44#0#0#*#0#0\"}"
```

Response Body

| **Body** | ```
{
    "state":"{enum task_state}",
    "error_message":""
}
``` |

Response Parameters

Name	Description
state {enum task_state]	The current state of the task
error_message	The description of the error

cURL Reload Target Example

cURL	`curl -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 0" https://computer.network.net/attunityenterprisemanager/api/v1/server-s/myrepsrv1/tasks/SalesDBBackup?action=run&option=RELOAD_TARGET`
| **Respons e** | ```
Headers:
    HTTP/1.1 200 OK
    Cache-Control: no-cache, no-store
    Content-Length: 38
    Content-Type: application/json; charset=utf-8
    Server: Microsoft-HTTPAPI/2.0
    Date: Mon, 26 Dec 2016 16:28:25 GMT
Payload:
    {
    "state":"RUNNING",
    "error_message":""
    }
``` |

cURL Resume Processing from Timestamp Examples

cURL	When the payload content is in a JSON file:
	`curl -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Type: application/json" -T @"C:\exports\run.json" --header "Content-Length: 37" https://computer.network.net/attunityenterprisemanager/api/v1/servers/rep2008r2gs7.qa.int/tasks/SalesDBBackup?action=run&option=RESUME_PROCESSING_FROM_TIMESTAMP"`
cURL	When the payload content is inline.
	`curl -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 0" -d "{\"cdcposition\":\"2017-03-07T11:19:03\"} "https://computer.network.net/attunityenterprisemanager/api/v1/servers/rep2008r2gs7.qa.int/tasks/SalesDBBackup?action=run&option=RESUME_PROCESSING_FROM_TIMESTAMP`

Respon-se	Headers:
	
	  HTTP/1.1 200 OK
	
	  Cache-Control: no-cache, no-store
	
	  Content-Length: 38
	
	  Content-Type: application/json; charset=utf-8
	
	  Server: Microsoft-HTTPAPI/2.0
	
	  Date: Tue, 07 Mar 2017 16:57:27 GMT
	
	Payload:
	
	  {"state":"RUNNING","error_message":""}
	
	  {"error_code":"INVALID_SESSION_ID","error_message":"Session expired or invalid"}

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_ ALREADY_ RUNNING	Replicate task {task} on server {server} is already running.	The task cannot be run because it is already running.
500	AEM_TASK_ IN_RECOVERY	Replicate task {task} on server {server} cannot be run as it is in a recovery state.	The task cannot be run because it is in Recovery state.
500	AEM_ WRONG_ OPTION_FOR_ CDCPOSITION	Replicate task {task] on server {server} cannot be run with cdcposition {position} and option {option}. Change the option to RESUME_ PROCESSING_FROM_ TIMESTAMP or RECOVER_ USING_CHECKPOINT_ STORED_ON_TARGET.	When the option **Tables are already loaded. Start processing changes from Timestamp** is selected in the **Advanced Run Options** dialog box for a task, the option sent to the API must be RESUME_PROCESSING_FROM_ TIMESTAMP.
500	AEM_CDC_ POSITION_ ERR_FORMAT	The cdcposition parameter value for Replicate task {task} on server {server} is not in the correct format ('YYYY-MM-DDThh:mm:ssZ').	The cdcPosition parameter must follow this format: YYYY-MM-DDThh:mm:ssZ Parameters: task name and server name
500	AEM_RUN_ TASK_ TIMEOUT	Replicate task {task} on server {server} timed out when requested to "Run".	The task does not assume a Running state or any other steady state (error o stopped).
500	AEM_RUN_ TASK_INNER_ ERR	Replicate task {task} on server {server} encountered an error when requested to run.	Replicate experienced an error/exception when trying to run the task.
500	AEM_RUN_ TASK_NO_ SRC_NO_TRG	Replicate task {task} on server {server} has no source or target endpoints.	Task validation revealed that the task is missing a source and a target.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_RUN_ TASK_NO_ SRC	Replicate task {task} on server {server} has no source endpoint.	Task validation revealed that the task is missing a source.
500	AEM_RUN_ TASK_TRG	Replicate task {task} on server {server} has no target endpoint.	Task validation revealed that the task is missing a target
500	AEM_RUN_ TASK_NOT_ FL_NOR_CDC	Replicate task {task} on server {server} cannot be run without at least one of the replication options enabled (Full Load, Apply Changes, or Store Changes).	Task validation of a unidirectional task revealed that the replication option definition for the task is missing (Full Load, Apply Changes, or Store Changes).
500	AEM_RUN_ BIDI_TASK_ NO_FL_NOR_ CDC	Replicate task {task} on server {server} cannot be run without at least one of the replication options enabled (Full Load or Apply Changes).	Task validation of a unidirectional task revealed that the replication option definition for the task is missing (Full Load, Apply Changes, or Store Changes).

GetEndpointList

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]/endpoints
Description	Retrieves a list of endpoints and their properties for the specified server.
Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

Body

```
{
    "endpointList": [{
        "name": "{string}",
        "description": "{string}",
        "role": "{enum endpoint_role}",
        "type": "{string}",
        "is_licensed": "{bool}"
    },...
    ]
}
```

Response Parameters

Name	Description
name	The endpoint name.
description	The endpoint description.
role	The endpoint role: SOURCE or TARGET
type	The endpoint type - for example, Oracle.
is_licensed	Indicates whether the endpoint is licensed on this server.

cURL Example

Request
```
curl -i -k --header "EnterpriseManager.APISessionID: wCo0_
KvjEUFROvfHF5KGrw"
https://computer.network.net/attunityenterprisemanager/
api/v1/servers/myrepsrv1/endpoints
```

Response   Headers:

```
HTTP/1.1 200 OK

Cache-Control: no-cache, no-store

Content-Length: 205

Content-Type: application/json; charset=utf-8

Server: Microsoft-HTTPAPI/2.0

Date: Mon, 26 Dec 2016 11:18:53 GMT
```
Payload:
```
{

  "endpointList": [{

      "name": "Shopping",

      "description": "Customers and purchases",

      "role": "SOURCE"

      "type": "ORACLE"

      "is_licensed": true

    }, {

      "name": "Management",

      "description": "Managers and Employees",

      "role": "SOURCE"

      "type": "ORACLE"

      "is_licensed": true

    }, {

      "name": "Business Management",

      "description": "Shopping + Management",

      "role": "TARGET"

      "type": "HADOOP"

      "is_licensed": true

    }

  ]

}
```

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ ENDPOINT_ LIST_INNER_ ERR	Failed to retrieve end-points list from Replicate server {name}.	Replicate experienced an error/exception when trying to retrieve the endpoint list.
403	See Error Handling.		
440	See Error Handling.		

DeleteEndpoint

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ [server]/endpoints/[endpoint]?action=delete
Description	Deletes the specified endpoint. Note than an endpoint can only be deleted if it is not in use by any task.
HTTP Method	DELETE
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	EndpointName [string]	Yes	Shopping
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_KvjEUFROvfHF5KGrw

Location	Name	Required	Example
Header	Content-Length	Yes	Content-Length: 0
			Note that the Content-Length value must be "0".

cURL Example

Request	`curl -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 0"`
	`https://computer.network.net/attunityenterprisemanager/api/v 1/`
	`servers/myrepsrv1/endpoints/Shopping?action=delete`

Response	`Header:`
	`    HTTP/1.1 200 OK`
	`    Cache-Control: no-cache, no-store`
	`    Content-Length: 38`
	`    Content-Type: application/json; charset=utf-8`
	`    Server: Microsoft-HTTPAPI/2.0`
	`    Date: Mon, 26 Dec 2016 16:31:01 GMT`

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint {endpoint} on server {server} could not be found.	Endpoint name unknown to Qlik Enterprise Manager.
500	AEM_DELETE_ ENDPOINT_ INNER_ERR	Failed to delete Replicate endpoint {endpoint} from server {server}.	Replicate encountered an error/exception when trying to delete the endpoint.
500	AEM_ENDPOINT_ IS_IN_USE	Replicate endpoint {endpoint} on server {server} cannot be deleted as it is currently in use by one or more tasks.	The Replicate endpoint must be removed from its associated tasks before it can be deleted.
403	See Error Handling.		
440	See Error Handling.		

ReconfigureEndpointNoWait

Notes

» Supported with the Oracle source endpoint only.

» Using this method, requires you to set up relevant Qlik Replicate task(s) with *three* separate source endpoints - two *inactive* source endpoints defined with the primary and secondary database connection settings, and one active source endpoint (initially defined with the primary database connection settings).

For detailed instructions, see Reconfiguring Endpoints

General

URL	https://[host]/attunityenterprisemanager/api/v1/servers/ {server}/endpoints/ {endpoint}/?action=reconfigure&configuration= {configuration}&recycle={true|false}
Description	Call this method to override the source endpoint settings with settings from another endpoint *of the same type.* This method also supports automatically stopping and then resuming all tasks that are using the source endpoint (which is required for unplanned switchovers).
HTTP Method	PUT
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Description	Example
URL	Host [string]	Yes	The host name of the compter on which the Replicate Server is running.	computer.network.net
URL	ServerName [string]	Yes	The name of the Replicate server (as defined in Qlik Enterprise Manager) on which the task(s) are running.	myrepsrv1
URL	EndpointName [string]	Yes	The name of the source endpoint defined for the Replicate task(s).	MyOracle
URL	ConfigurationName [string]	Yes	The name of the secondary endpoint (or the primary endpoint when reverting the settings).	SecondaryOracle

Location	Name	Required	Description	Example
URL	Recycle [bool]	Optional (default is true)	Whether to stop and resume the Replicate task(s) automatically. The default is "true" i.e. when an unanticipated switchover occurs, tasks using the source endpoint will be automatically stopped and then resumed after the source endpoint is updated with the settings from the secondary endpoint. Set to "false" for planned switchovers (such as migrating to a production database or	true

Locatio n	Name	Require d	Description	Example
			switching back to the primary database).	
Header	EnterpriseManager.APISession ID [string]	Yes		wCo0_ KvjEUFROvfHF5KGr w

cURL Example

```
CURL.EXE -i -k --header "EnterpriseManager.APISessionID: wCo0_
KvjEUFROvfHF5KGrw"
"https://computer.network.net/attunityenterprisemanager/api/v1/servers/my
repsrv1/endpoints/MyOracle?action=reconfigure&configuration=SecondaryOrac
le&recycle=true"
```

Response

```
HTTP/1.1 200 OK

Cache-Control: no-cache, no-store

Content-Length: 0

Content-Type: application/json; charset=utf-8

Server: Microsoft-HTTPAPI/2.0

Application-Status: 200

Application-Message: OK

Date: Sun, 19 Feb 2019 16:42:11 GMT
```

Error Response

All of the general errors as well as the errors listed in the table below.

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ ENDPOINT_ NOT_FOUND	Replicate endpoint " {endpoint}" on server " {server}" could not be found.	The specified endpoint could not be found.
500	AEM_ RECONFIGURE_ ENDPOINT_ INNER_ERR	Failed to reconfigure endpoint "{endpoint}" on server "{server}". Error: " {message}"	Qlik Enterprise Manager failed to reconfigure the endpoint with the settings of the failover endpoint.

ExportAll

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {ServerName}?action=export
Description	Export all definitions from the requested server repository on the selected server (server settings, tasks, endpoints, and so on). The definitions are exported to a JSON file. Supported only with Replicate 5.2 and later.
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	URL Param Name	Required	Example
URL	Host [string]	Yes	computer.network.net

Location	URL Param Name	Required	Example
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response

JSON File

cURL Example

Request	CURL.EXE -i -k --header "EnterpriseManager.APISessionID: wCo0_ KvjEUFROvfHF5KGrw" https://computer.network.net/attunityenterprisemanager/api/v1/servers/ myrepsrv1?action=export
Response	JSON file (stream)

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ METHOD_ NOT_ SUPPORTED_ VERSION	ExportAll is only supported on Replicate 5.2 or above.	The method requires Repicate 5.2 or above.
500	AEM_ EXPORT_NO_ PERMISSION_ ON_TASK	Failed to export all tasks from Replicate server {server} as the logged in user does not have permission to export one or more of the defined tasks.	Export all cannot be carried out because the user does not have permissions on one or more tasks.
500	AEM_ EXPORT_NO_ PERMISSION_ ON_ ENDPOINT	Failed to export all tasks from server {server} as the logged in user does not have permission to export one or more of the defined endpoints.	Export all cannot be carried out because the user does not have permissions on one or more endpoints.

ImportAll

General

URL	https://{Host}/attunityenterprisemanager/api/v1/servers/ {ServerName}?action=import
Description	Import the JSON definitions provided in the request body into the requested server repository on the selected server.
	Supported only with replicate 5.2 and later.
	The ApiImportAll method uses "merge" semantics. In particular:
	» All valid JSON definitions provided in the request body will be imported. This includes server settings, task settings, endpoints, and other definitions.
	» Items that existed in the target server before the import and have no new JSON definition in the request body will not be modified and in particular will not be removed. This means that ApiImportAll provides no way of removing old definitions that are no longer needed.
HTTP Method	POST
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_KvjEUFROvfHF5KGrw

Location	Name	Required	Example
Header	Content-Length: This is the number of bytes in the content body. Note that the number of bytes that you specify must be exactly the same as the number of bytes in the JSON file. This number can be ascertained by copy-pasting the text into a text editor such as **Notepad ++** (which shows the number of bytes as "Length" at the bottom of its console).	Yes	"Content-Length: 110952"
Body	A JSON document to import [stream]	Yes	localServer1.json

Response

JSON File (stream)

cURL Example

cURL Example	CURL.EXE -i -k -X POST --header "EnterpriseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 110952" --header "Content-Type: application/json" " https://-computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsrv1?action=import" -T "C:\exports\localServer1.json"

Response	`HTTP/1.1 100 Continue`
	
	`HTTP/1.1 200 OK`
	
	`Cache-Control: no-cache, no-store`
	
	`Content-Length: 0`
	
	`Content-Type: application/json; charset=utf-8`
	
	`Server: Microsoft-HTTPAPI/2.0`
	
	`Date: Tue, 28 Feb 2017 19:05:12 GMT`

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ METHOD_ NOT_ SUPPORTED_ VERSION	ImportAll is only supported on Replicate 5.2 or above.	The method requires Replicate 5.2 or above.
500	AEM_ IMPORT_NO_ PERMISSION_ ON_TASK	Failed to import all tasks to replication server {server} as the logged in user does not have permission to add tasks.	Stream cannot be imported because the user does not have the permissions to add tasks.
500	AEM_ IMPORT_NO_ PERMISSION_ ON_ ENDPOINT	Failed to import all tasks to replication server {server} as the logged in user does not have permission to add endpoints.	Stream cannot be imported because the user does not have the permissions to add endpoints
500	AEM_ IMPORT_ CONTENT_ EMPTY	Failed to import all tasks to replication server {server} as the JSON file is empty.	Stream cannot be imported because it contains no content.
500	AEM_ IMPORT_ INVALID_ CONTENT	Failed to import all tasks to replication server {server} as the JSON file contains invalid content.	Stream cannot be imported because it contains invalid content.

ReloadTable

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/ {server}/tasks/{task}/tables?action=reload&schema= {schema}&table={table}
Description	Reload a specific table.

HTTP Method	POST
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net
URL	ServerName [string]	Yes	myrepsrv1
URL	TaskName [string]	Yes	SalesDBBackup
URL	Schema [string]	Yes	dbo
URL	Table [string]	Yes	employeelist
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_KvjEUFROvfHF5KGrw
Header	Content-Length	Yes	Content-Length: 0 **Note:** The specified value must be "0".

cURL Example

cURL Example	CURL.EXE -i -k -X POST --header "Enter-priseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" --header "Content-Length: 0" "https://-computer.network.net/attunityenterprisemanager/api/v1/servers/myrepsr-v1/tasks/SalesDBBackup/tables?action=reload&schema=dbo&table=employeelist"
Response	HTTP/1.1 200 OK Cache-Control: no-cache, no-store Content-Length: 0 Content-Type: application/json; charset=utf-8 Server: Microsoft-HTTPAPI/2.0 Date: Tue, 24 Jan 2017 13:34:38 GMT

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_ INVALID_ TASK_ NOT_FL	Failed to reload table {table} as Full Load is not enabled for task {task}.	The table could not be reloaded because the task's Full Load replication option is not enabled.
500	AEM_ INVALID_ TASK_NT_ NTSUPPEP	Failed to reload table as this operation is not supported with the File Channel source endpoint.	The table could not be reloaded because the task's source endpoint is File Channel.
500	AEM_ RELOAD_ TABLE_ERR	Failed to reload table {schema}. {table} for Replication task {task} on server {server}: {message}	An error was encountered while trying to reload the specified table.

TestEndpoint

General

URL	https://{host}/attunityenterprisemanager/api/v1/servers/{server} endpoints/{endpoint}?action=test&timeout={timeout}
Description	Contact an endpoint to test connectivity and configuration (permissions, CDC configuration).
HTTP Method	GET
Required User Role	See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Example
URL	Host [string]	Yes	computer.network.net

Location	Name	Required	Example
URL	ServerName [string]	Yes	myrepsrv1
URL	EndpointName [string]	Yes	TargetSQL1
URL	Timeout [int32]	Optional (default is 60 sec)	60 (seconds)
Header	EnterpriseManager.APISessionID [string]	Yes	wCo0_ KvjEUFROvfHF5KGrw

Response Body

Body	```{```
	``` "requeststate":"{enum requeststate_state}",```
	``` "message":""```
	``` "detailed_message":""```
	```}```

Response Parameters

Name	Description
state {enum endpoint_state]	The current state of the endpoint
message	Short description of the error
detailed message	Elaborate description of the error

cURL Example

cURL Example	```c:\Tools\curl>CURL.EXE -i -k --header "Enter-priseManager.APISessionID: wCo0_KvjEUFROvfHF5KGrw" "https://-computer.network.net /attunityenterprisemanager/api/v1/servers/ myrepsr-v1/endpoints/TargetSQL1c?action=test&timeout=60"```

Response

```
HTTP/1.1 200 OK

Cache-Control: no-cache, no-store

Content-Length: 61

Content-Type: application/json; charset=utf-8

Server: Microsoft-HTTPAPI/2.0

Date: Sun, 19 Feb 2017 16:42:11 GMT

Payload:

{

  "state":"CONNECTED",

  "error_message":""

}
```

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TEST_ ENDPOINT_ CONNECTION_ TIMEOUT	A timeout occurred while testing the connection for endpoint {endpoint} on Replicate server {server}.	Connection was not established within 60 seconds.
500	AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint {0} on server {1} could not be found.	The specified endpoint could not be found.

DeleteOldChangeData

General

Description

The method can be called on an ad-hoc basis to delete processed Change Data Partitions created on the target database by a Replicate task.

» Partitions will only be deleted if the Change Data Partitioning and Partition Retention options are enabled in the Replicate console.

For more information, refer to the *Qlik Replicate Setup and User Guide*.

» Partitions will only be deleted if the task is running. If the task is not running, the partitions will be deleted the next time the task runs.

» If a retention barrier is set, partitions will only be deleted up to the retention barrier or the earliest of all retention barriers (when set by multiple applications). For example, if Application A sets July 7th, 2020 as a barrier, Application B sets August 7th, 2020 as a barrier, and Application C sets September 7th, 2020 as a barrier, partitions will be deleted up to July 7th, 2020.

URL

https://{host:port}/attunityenterprisemanager/api/v1/servers/{server}/tasks/{task}?action=delete_old_change_data

HTTP Method

POST

Required User Role

See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Description/Example
URL	host [string]	Yes	The host name of the Enterprise Manager machine. **Example:** computer.network.net
URL	server [string]	Yes	The Replicate server name, as defined in Enterprise Manager. **Example:** myrepsrv1
URL	task [string]	Yes	The Replicate task name. **Example:** TargetAWSEMR

Request Body

The point in time after which partitions can be deleted, which can either be specified as a timestamp or as an offset. If a retention barrier is set, and the specified timestamp/offset is earlier than the barrier, an error will be returned.

Timestamp Format

[Date]

(yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z')

Example:

2020-06-30T16:15:00Z

Offset Format

[Period]

Format ISO 8601 duration

Example:

P1M3DT1H2M

cURL Example

Using timestamp:

```
curl -i --header "EnterpriseManager.APISessionID: {SessionID}" -X POST
https://computer.network.net/attunityenterprisemanager/api/v1/servers/myr
epsrv1/tasks/SalesDBBackup?action=delete_old_change_data --data
"{\"timestamp_or_offset\":\"2020-06-30T16:15:00Z\"}"
```

Using offset from current time:

```
curl -i --header "EnterpriseManager.APISessionID: {SessionID}" -X POST
https://computer.network.net/attunityenterprisemanager/api/v1/servers/myr
epsrv1/tasks/SalesDBBackup?action=delete_old_change_data --data
"{\"timestamp_or_offset\":\" P1M3DT1H2M\"}"
```

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
500	AEM_ INVALID_ TIMESTAMP_ OR_OFFSET_ FORMAT	The specified deletion age does not conform to the expected timestamp or offset format. Timestamp format should be yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'. Offset format should conform to ISO 8601 duration.	Returned when the specified deletion age does not conform to the expected timestamp or offset format.
500	AEM_ DELETE_ OLD_ CHANGE_ DATA_ INNER_ERR	Failed to request deletion of old change data for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered during partition deletion.

SetChangeDataRetentionBarrier

General

Description

The method can be used to:

» Set a retention barrier for deleting consumed partitions. Setting a retention barrier will initiate periodic deletion of consumed Change Data Partitions from the target database defined for the specified task. Partitions will be deleted according to the

When deletion is initiated by a consuming application, delete partitions every interval set on Replicate Server, and only up to the retention barrier or the earliest of all retention barriers (when set by multiple applications). For example, if Application A sets July 7th, 2020 as a barrier, Application B sets August 7th, 2020 as a barrier, and Application C sets September 7th, 2020 as a barrier, partitions will be deleted up to July 7th, 2020.

» Remove the retention barrier. Note that if there are multiple consuming applications, periodic deletion of consumed Change Data Partitions will only stop after *all* retention barriers have been removed.

» Partitions will only be deleted if the Change Data Partitioning and Partition Retention options are enabled in the Replicate console.

» Partitions will only be deleted if the task is running. If the task is not running, the partitions will be deleted the next time it runs.

URL

https://{host:port}/attunityenterprisemanager/api/v1/servers/{server}/tasks/{task}?action=set_change_data_retention_barrier

HTTP Method

PUT

Required Permission

See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Description/Example
URL	host [string]	Yes	The host name of the Enterprise Manager machine. **Example:** computer.network.net
URL	server [string]	Yes	The Replicate server name, as defined in Enterprise Manager. **Example:** myrepsrv1

Location	Name	Required	Description/Example
URL	task [string]	Yes	The Replicate task name. **Example:** TargetAWSEMR

Request Body

Body for Setting a Retention Barrier

retention_point=timestamp

application=application_name

Where:

» timestamp is the date up to which partitions can be deleted. The timestamp must be in the following format: (yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z').

» application_name is the name of the consuming application.

Example:

retention_point=2020-06-30T16:15:00Z

application=Compose

Body for Removing the Retention Barrier

retention_point=null

application=application_name

Where application_name is the name of the consuming application.

cURL Example for Setting a Retention Barrier

```
curl -i --header "EnterpriseManager.APISessionID: {SessionID}" -X PUT
https://computer.network.net/attunityenterprisemanager/api/v1/servers/myr
epsrv1/tasks/SalesDBBackup?action=set_change_data_retention_barrier --
data "{\"retention_point\":\"2020-06-30T16:15:00Z\",
\"application\":\"myapp\"}"
```

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
500	AEM_INVALID_TIMESTAMP_FORMAT	The specified partition retention barrier does not conform to the expected timestamp format. Timestamp format should be yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'.	Returned when the specified partition retention barrier does not conform to the expected timestamp format.
500	AEM_SET_CHANGE_DATA_RETENTION_BARRIER_INNER_ERR	Failed to set change data retention barrier for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered during partition deletion.

GetChangeDataRetentionBarrier

General

Description

Returns the date of the earliest partition retention barrier when multiple partition retention barriers have been set.

When different retention barriers have been set by multiple consuming applications, Replicate will delete old Change Data partitions up to the earliest partition retention barrier.

For information on setting a partition retention barrier, see SetChangeDataRetentionBarrier.

URL

https://{host:port}/attunityenterprisemanager/api/v1/servers/{server}/tasks/{task}?action=get_change_data_retention_barrier

HTTP Method

GET

Required User Role

See Required Enterprise Manager Permissions.

Request Parameters

Location	Name	Required	Description/Example
URL	host [string]	Yes	The host name of the Enterprise Manager machine. **Example:** computer.network.net
URL	server [string]	Yes	The Replicate server name, as defined in Enterprise Manager. **Example:** myrepsrv1
URL	task [string]	Yes	The Replicate task name. **Example:** TargetAWSEMR

Response Body

Name	Type	Description
application	string	The name of the consuming application that set the earliest partition retention barrier.
retention_ point	datetime Format: yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'	The date of the earliest partition retention barrier.

cURL Example

```
curl -i --header "EnterpriseManager.APISessionID: {SessionID}"
https://computer.network.net/attunityenterprisemanager/api/v1/servers/myr
epsrv1/tasks/SalesDBBackup?action=get_change_data_retention_barrier
```

Response

{"application":"xxx","retention_point":"2020-06-30T16:15:00Z"}

Error Response

HTTP Code	Enterprise Manager Code	Text	Description
500	AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
500	AEM_GET_ CHANGE_ DATA_ RETENTION_ BARRIER_ INNER_ERR	Failed to get change data retention barrier for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered while trying to get the retention barrier.

Parameters

The following table lists all enum parameters used in the response body, along with their values.

Parameter Name	Value	Description
Server State	MONITORED	The server is being monitored, the Qlik Enterprise Manager is connected and synchronized successfully.
	ERROR	Qlik Enterprise Manager fails to connect and monitor the server.
	NOT_MONITORED	The server is not being monitored.
Server Platform	» WINDOWS » LINUX	
License State	» LICENSE_VALID » LICENSE_INVALID_ CHECKSUM » LICENSE_EXPIRED NO_ LICENSE » MACHINE_NOT_LICENSED » INVALID_LICENSE	
Endpoint Role	SOURCE or TARGET	Specifies whether an endpoint is being used as a source or a target in a Replicate task.
Task State	RUNNING	The task is running.
	STOPPED	The task has not been run yet or has stopped running at some point during the replication.
	ERROR	The task has stopped due to a fatal error.
	RECOVERING	The task has detected an error and is trying to recover. After a limited number of attempts, the task either recovers and the state returns to RUNNING, or the task fails and the state turns to ERROR.

Parameter Name	Value	Description
Task options	full_load_enabled [bool]	Creates all files or tables at the target endpoint, automatically defines the metadata that is required at the target, and populates the tables with data from the source.
	apply_changes_enabled [bool]	Updates all changes made to files and tables that were created during the full load. Applied changes include inserts, updates, and removal of items.
	store_changes_enabled [bool]	Stores changes in Change tables. This value and the audit_changes_ enabled value are mutually exclusive.
	audit_changes_enabled [bool]	Stores changes in a single audit table. This value and the store_ changes_enabled_value are mutually exclusive.

Parameter Name	Value	Description
Task Stop reason	NONE	Indicates that a task is running and no Stop reason is prevalent.
	NORMAL	Indicates that the task was stopped by the user.
	RECOVERABLE_ERROR	Indicates that the task is still active, but that there is a temporary problem, such as a missing connection. As soon as the error state is resolved, Replicate restarts the task.
	FATAL ERROR	Indicates that the task stopped and the error must be resolved manually. The task cannot be started again until the error has been resolved.
	FULL_LOAD_ONLY_FINISHED	Indicates that the task only finished full load.
	STOPPED_AFTER_FULL_LOAD	Indicates that the task stopped after full load. Cached changes may or may not have been applied.
	STOPPED_AFTER_CACHED_EVENTS	Indicates that the task stopped after cached changes were applied.
	EXPRESS_LICENSE_LIMITS_REACHED	The task definition includes actions that are not included with Express license privileges.
	STOPPED AFTER_DDL_APPLY	Indicates that the task stopped after DDL statements were applied.
	STOPPED_LOW_MEMORY	Indicates that the task stopped due to low memory.

Parameter Name	Value	Description
	STOPPED_LOW_DISK	Indicates that the task stopped due to low disk space.
Replication profile	UNIDIRECTIONAL	Data is replicated from a source to a target.
	BIDIRECTIONAL	Changes to the source are replicated to the target, and vice versa.
	LOG_STREAM_STAGING	Changes are captured from a single source and stored on Replicate Server for replication to one or more targets.
Source type Target type	Source and target endpoint types should be specified in the same format that they appear in the **Type** drop-down list (when adding a new endpoint in Enterprise Manager). For information on how to add an endpoint in Enterprise Manager, refer to the *Enterprise Manager Setup and User Guide*.	

Parameter Name	Value	Description
Run options	RESUME_PROCESSING	Resumes task execution from the point that it was stopped.
	RELOAD_TARGET	Re-starts the full-load replication process if the task was previously run.
	RESUME_PROCESSING_FROM_TIMESTAMP	Starts the CDC replication task from a specific point.
	RECOVER_USING_LOCALLY_STORED_CHECKPOINT	Recovers a task using the recovery state stored locally in the task folder (located under the Data folder).
	RECOVER_USING_CHECKPOINT_STORED_ON_TARGET	Recovers a task using the CHECKPOINT value from the attrep_txn_state table (created in the target database). **Note** This option is only available if the **Store task recovery data in target database** option is enabled in the **Changes Processing Tuning** tab of the **Task Settings** dialog box.
	METADATA_ONLY_RECREATE_ALL_TABLES	Recreates the target tables defined for full load.
	METADATA_ONLY_CREATE_MISSING_TABLES	Creates missing target tables, including Change Tables.
Request state	SUCCESS	Connection to endpoint is valid
	FAILURE	Connection to endpoint is not valid

Parameter Name	Value	Description
state	Represented as enum values: » TABLE_QUEUED » TABLE_LOADING » TABLE_COMPLETED » TABLE_CHANGE_PROCESSING » TABLE_ERROR	**TABLE_QUEUED** - A table awaiting loading. **TABLE_LOADING** - A table being loaded to the target. **TABLE_COMPLETED** - A table that has been loaded to the target. **TABLE_CHANGE_PROCESSING** - A table that has been loaded to the target and is being updated according to changes on the source. **TABLE_ERROR** - An error occurred while processing the table.

3 Enterprise Manager .NET SDK

This chapter explains how to use the Enterprise Manager .NET SDK and the lists the available methods.

In this chapter:

- ▸ Prerequisites
- ▸ Getting Started - Login
- ▸ Authentication and Authorization
- ▸ Error Handling
- ▸ PutServerLicense
- ▸ GetServerDetails
- ▸ PutServer
- ▸ PutServerAcl
- ▸ GetServer
- ▸ GetServerAcl
- ▸ GetServerList
- ▸ DeleteServer
- ▸ Syntax
- ▸ DeleteServerAcl
- ▸ GetTaskList
- ▸ GetTaskDetails
- ▸ GetTableList
- ▸ GetTableStatuses
- ▸ DeleteTask
- ▸ ExportTask
- ▸ ImportTask
- ▸ StopTask
- ▸ RunTask
- ▸ GetEndpointList
- ▸ DeleteEndpoint
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> ▸ ReloadTable
>
> ▸ TestEndpoint
>
> ▸ DeleteOldChangeData
>
> ▸ SetChangeDataRetentionBarrier
>
> ▸ GetChangeDataRetentionBarrier
>
> ▸ Parameters

Prerequisites

General Prerequisites

Before using the Enterprise Manager .NET SDK, make sure that:

» Qlik Enterprise Manager has been installed.

» The Qlik Enterprise Manager service is active.

» The relevant permissions have been granted.

.NET SDK Prerequisites

The *<Enterprise Manager_*Installation_Folder>/clients/dotnet/ folder contains the following required files:

» **AemRestClient.dll**

» **Newtonsoft.Json.dll**

Getting Started - Login

This section describes how to get started with the Enterprise Manager .NET SDK. To help you better understand how to implement the available methods, a code sample and a readme file that describes the code are located in the ***<Enterprise Manager_ Installation_Folder>/clients/dotnet*** folder.

To be able to use the Enterprise Manager .NET SDK:

1. Create a project which references the **AemRestClient.dll** and **Newtonsoft.Json.dll** files

2. Create the AemRestClient object using one of the following constructors:

» `public AemRestClient(ICredentials credentials, string url = "https://localhost/attunityenterprisemanager", bool verifyCertificate = true);`

    » credentials – See below.

    » url – The URL to the Qlik Enterprise Manager server. The URL must begin with "https".

    » verifyCertificate – See below.

» `public AemRestClient(ICredentials credentials, string host, int port, string urlSuffix = "attunityenterprisemanager", bool verifyCertificate = true);`

    » credentials – See below.

    » host – The machine on which Enterprise Manager is installed.

    » port – The Enterprise Manager server port (usually 443).

    » urlSuffix – The part of the Enterprise Manager URL that follows the host and port (usually `attunityenterprisemanager`).

    » verifyCertificate – See below.

> **Note** When `verifyCertificate` is set to **true** there must be valid certificate on the Enterprise Manager machine. When set to **false**, Enterprise Manager client will not validate the server certificate.

Connecting to Enterprise Manager using Active Directory

```
var credentials = new NetworkCredential
                  {
                  UserName = "USERNAME",
                  Password = "PASSWORD",
                  Domain = "DOMAIN"
          };

_client = new AemRestClient(credentials, "localhost", 443, false);
```

Connecting to Enterprise Manager using SAML

This must be specified without a username.

```
          var credentials = new NetworkCredential
              {
              Password=<saml_assertion>
              };


_client = new AemRestClient(credentials, "localhost", 443, false);
```

Where `<saml_assertion>` is the SAML assertion from a SAML IDP. This must be a URL encoded string containing the `SAMLResponse` parameter with a base64 encoded SAML assertion as its value. The string may also contain other parameters (e.g. RelayState), but these parameters are ignored.

Example:

"SAMLResponse=<long_base_64_string>"

Using Client Methods to Get/Set Data on Qlik Enterprise Manager

After creating credentials and a client object, you can call the client methods to get/set data from Enterprise Manager using the public APIs.

For example:

`_client.GetServerList()`

`_client.GetServerDetails(serverName)`

`_client.ExportTask(serverName, taskName);`

Authentication and Authorization

The AemRestClient user and password need to be the user and password that are defined in users or groups in Qlik Enterprise Manager ACLs in at least one level (e.g Qlik Enterprise Manager level, All Servers level, etc,) with at least Viewer role.

Error Handling

When a REST request fails, the HTTP response code is set to an error code. Information about the error is returned in the payload as an error response.

An error response has the following structure:

Class: AemClientException that inherits from Exception class and has the following fields:

`ErrorCode`

`Message`

This section lists the generic messages that apply to most of the API functions. Errors that are specific to a particular API function appear in the section for that API function.

Error	Message	Description
UNAUTHORIZED_ REQUEST	Unauthorized Request.	The user is not authorized to perform the requested action (e.g. deleting a task).
INVALID_ SESSION_ID	The session has expired or the session ID is not valid.	Session expired or invalid.
DESERIALIZE_ TO_TYPE	Failed to deserialize json to type {type}: {message}	Returned when the JSON format is invalid.
AEM_SERVER_ NOT_FOUND	The requested server {server} could not be found.	The requested server cannot be found.
AEM_SERVER_ NOT_ MONITORED	The requested server {server} is not monitored.	The requested server is not being monitored and thus the information is not accessible.
AEM_SERVER_ NOT_ CONNECTED	The requested server "{server}" cannot be reached at this time. Message: {message}	The desired information cannot be retrieved as the requested server is not connected.
AEM_SERVER_ LICENSE_ EXPIRED	The license for requested server {server} has expired.	The requested server license has expired.
AEM_SERVER_ INVALID_ LICENSE	The license for requested server {server} is not valid.	The requested server license is not valid.
LICENSE_NOT_ FOUND	You need to register a Replication Management license in order to use Qlik Enterprise Manager. To register or obtain a license, open the Qlik Enterprise Manager console and follow the instructions.	Replication Management license was not found. For a user who is permitted to Register Qlik Enterprise Manager license.

Error	Message	Description
LICENSE_NOT_ FOUND_ CONTACT_ADMIN	An Enterprise Manager Admin needs to register a Replication Management license before you can use the product. To obtain a license, contact your Qlik Sales Representative with the Enterprise Manager machine name (which is displayed when you open the Enterprise Manager console).	Replication Management license was not found. For a user who is NOT permitted to Register Qlik Enterprise Manager license.
LICENSE_ EVALUATION_ EXPIRED	{Module} evaluation license has expired.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_TERM_ EXPIRED	{Module} license has expired.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_ INVALID_ SIGNATURE	The {Module} license signature is invalid.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_HOST_ MISMATCH	The host name in the {Module} license does not match the Enterprise Manager machine name.	{Module} is one of the following: » Replication Management » Replication Analytics
AEM_MISSING_ FIELD	The "{fieldName}" field is missing from the request.	When a mandatory field is missing from the request or appears empty

PutServerLicense

Registers a license on a specific server via Qlik Enterprise Manager.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void PutServerLicense(

      string payload,

      string server

);
```

Parameters

Parameter	Type	Description
payload	string	The license to register on the server [stream]. This is the license that was provided by your Qlik Sales Representative. **Expected format:** Text or JSON. Currently refers to the Replicate license only.
server	string	The name of the server.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_PUT_SRV_ LIC_INNER_ERR	Failed to put license for server " {server}". Error: "{message}"	Returned if Qlik Enterprise Manager encounters an error/exception when trying to register the license on the specified server.
AEM_SRV_LIC_ INVALID_FORMAT	The license file format is corrupt.	Returned when the contents of the license file are invalid.

GetServerDetails

Retrieves details about the specified server.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemGetServerDetailsResp GetServerDetails(

     string server

);
```

Parameters

Parameter	Type	Description
server	string	The specified server name in Qlik Enterprise Manager.

Return Values

AemGetServerDetailsResp

Parameter	Type	Description
ServerDetails	AemServerDetails	ReplicateServerDetails or ComposeServerDetails that are inherited from AemServerDetails
Configuration		
Host	string	The host name or IP address of the Replicate/Compose Server machine.

Parameter	Type	Description

Platform	AemPlatform
	
	{
	
	    UNKNOWN = 0,
	
	    WINDOWS = 1,
	
	    LINUX = 2
	
	}
		The platform on which the Replicate/Compose Server machine is installed.

Port	string	The port through which the Rep-licate/Compose Server machine is accessed.
UserName	string	The user name for con-necting to the Rep-licate/Compose Server machine.
Description	string	The server descrip-tion.
LastConnection	string	The date and time of the last successful syn-c/retrieval of tasks and messages.
License	ApiLicense	
DaysToExpiration	int	The number of days left before the license expires.
Expiration	string	The expiration date of the server license.
IssueDate	string	When the license was issued.

Parameter	Type	Description

State	AemLicenseState
	
	{
	
	VALID_LICENSE
	= 0,
	
	INVALID_
	LICENSE_
	CHECKSUM = 1,
	
	EXPIRED_
	LICENSE = 2,
	
	NO_LICENSE = 3,
	
	MACHINE_NOT_
	LICENSED = 4,
	
	INVALID_
	LICENSE = 5
	
	}
		The current license state (e.g. valid, expired, etc.).

Message	string	The error message if Qlik Enterprise Manager fails to connect to the Replicate/Compose Server machine.
Name	string	The name of the server in Qlik Enterprise Manager.
ResourceUtilization	AemServerUtilization	
AttunityCpuPercentage	int	The sum of CPU percentage of Replicate server and all running tasks processes.

Parameter	Type	Description
DiskUsageMb	long	The amount of disk space that the server is currently consuming, in MB. This is the sum of disk usage for all tasks on this server.
MachineCpuPercentage	int	The CPU percentage of the machine where Replicate is installed.
MemoryMb	long	The amount of memory that the server is currently consuming, in MB. This is the sum of memory usage for all active tasks on this server, excluding stopped tasks.
State	AemServerState { NOT_MONITORED = 0, MONITORED = 1, ERROR = 2 }	The state of the server.
AemTasksSummary	TaskSummary	
Error	int	The number of tasks that encountered a fatal error.
Recovering	int	The number of recovering tasks

Parameter	Type	Description
Running	int	The number of running tasks.
Stopped	int	The number of stopped tasks.
Total	int	The total number of tasks, regardless of state.
Version	string	The Replicate/Compose Server version.

Notes

» The return value -1 means N/A.

» Parameters related to Disk, Memory, Qlik CPU, and Machine CPU usage are not available for Compose servers. For Compose servers, these parameters will be returned as -1.

» Parameters related to Qlik CPU and Machine CPU usage are only available for Replicate 6.2 and above. For earlier Replicate versions, these parameters will be returned as -1.

» For servers that are in an error state or not monitored, parameters related to Disk and Memory usage will be returned as -1.

Errors

Error	Message	Description
AEM_SERVER_NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.

See Error Handling.

PutServer

Adds a new Replicate/Compose Server or updates the server definition (Connection Properties) if the specified server already exists. This method can be used together with AemGetServer in order to update the connection properties of an existing server.

First call AemGetServer, then edit the returned properties as required, and finally, call AemPutServer.

Required User Role: See Required Enterprise Manager Permissions**.**

Syntax

```
public void PutServer(

      AemServer payload,

      string server

);
```

Parameters

Parameter	Type	Description
payload	AemServer	AemReplicateServer or AemComposeServer that is inherited from AemServer.
Name	string	The name of the server.
Description	string	The server description.
Host	string	The host name or IP address of the server.
Port	string	The port through which the server is accessed.
Username	string	The user name to connect to the Replicate/Compose Server.
Password	string	The password to connect to the Replicate/Compose Server.Note The password identifier (GUID) that is returned by GetServer is valid only for the session in which it was generated. Using it in another session (for example as input for PutServer) will result in exception.

Parameter	Type	Description
VerifyServerCertificate	bool	Set to "true" to ensure the Server certificate is trusted. As a rule, to reduce the chance of "man-in-the-middle" attacks, this option should always be set to "true".

> » When connecting directly to an Qlik Replicate replication server (default port 3552) with its automatically generated self-signed certificate, Qlik Enterprise Manager is able to validate the certificate without requiring any additional setup.

> » When connecting to a Replicate Server via the Replicate UI Server (typically using port 443) or to the Replicate replication server with a user-installed certificate, you must make sure that the SSL/TLS certificate used by the server is trusted by the Qlik Enterprise Manager machine. The same applies when connecting to a Compose Server with a user-installed certificate. You can easily verify whether the certificate is trusted by opening a Chrome browser window on the Qlik Enterprise Manager machine and connecting to Replicate. If there are no security warnings, the certificate is trusted.

For information on the different ways of connecting to Qlik Replicate, see *Qlik Replicate Server Requirements* in the Qlik Enterprise Manager Help.

Parameter	Type	Description
Monitored	bool	Whether to retrieve tasks and messages from this server or not.
server	string	The name of the server.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
DESERIALIZE_TO_TYPE	"Failed to deserialize json to type AemServer: {message}"	Returned when the JSON format is invalid format. For example, such an error will be returned if the JSON contains an unknown role.
AEM_PUT_SERVER_INNER_ERR	Failed to put server "{server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to PUT the server.
AEM_INVALID_SERVER_TYPE	Server type {ServerType} for server "{ServerName}" is not valid.	Returned when the an invalid server type is specified.
AEM_NAME_URL_MISMATCH	The name of the server in the request does not match the one that is specified in the URL.	Returned when the name of the server in the request does not match the one that is specified in the URL.
AEM_EMPTY_HOST	The host is missing from the request.	Returned when the host is missing from the request.
AEM_EMPTY_PORT	The port is missing from the request.	Returned when the port is missing from the request.

Error	Message	Description
AEM_EMPTY_ USERNAME	The username is missing from the request.	Returned when the user name is missing from the request.
AEM_EMPTY_ PASSWORD	The password is missing from the request.	Returned when the password is missing from the request.
AEM_INVALID_ PORT	The port is invalid.	Returned when the specified port is not valid.
AEM_INVALID_ USERNAME	The user name is invalid. User names cannot exceed 104 characters and can contain all Unicode characters except for the following characters: Forward slash (/), Left square bracket ([), Right square bracket (]), Colon (:), Semicolon (;), Vertical bar (|), Equal sign (=), Plus sign (+), Asterisk (*), Question mark (?), Left angle bracket (<), Right angle bracket (>), Double quote (\").	Returned when the specified user name is not valid.
AEM_INVALID_ DESC	The description is invalid. Descriptions cannot exceed 250 characters.	Returned when the description exceeds 250 characters.
AEM_INVALID_ HOST	The host is invalid. Hosts cannot exceed 64 characters and can only contain letters (a-z or A-Z), digits, spaces, dots (.), dashes (-), and underscores (_).	Returned when the server host name exceeds 64 characters or contains invalid characters.
AEM_INVALID_ NAME	The name of the server is invalid. Server names cannot exceed 64 characters and can only contain letters (a-z or A-Z), digits, spaces, dots (.), dashes (-), and underscores (_).	Returned when the server name exceeds 64 characters or contains invalid characters.

Error	Message	Description
AEM_HOST_ PORT_ALREADY_ EXIST	Host {name/IP} and port {number} are already in use by another server.	Returned when both the server host name/IP address and the server port are already in use by another server.

PutServerAcl

Puts an explicit ACL for a specific server in Qlik Enterprise Manager. The method will replace any existing explicit ACL with the ACL in the request. The request also includes a Boolean flag for specifying whether or not the server should inherit ACLs from its ancestors (in addition to its explicitly defined ACLs).

The inherited ACLs (i.e., the ACLs of the server's ancestors) are not affected by this method.

The `AemPutServerAcl` can be used together with the `AemGetServerAcl` method in order to update an existing server's ACL. First call `AemGetServerAcl`, then edit the returned roles as required, and finally, call `AemPutServerAcl`.

Behavior when putting a partial request:

When the request body includes only some of the roles (as opposed to all four of them), only the roles specifically defined in the request body will be set on the server; roles that are missing or empty will be inherited, but only if the following are true:

» The `disable_inheritance` flag is set to "True".

» The roles that are missing/empty in the request are defined for the ancestors.

Behavior on conflicts:

If the `disable_inheritance` flag is set to "False" and the explicit roles in the request conflict with existing inherited roles, then the explicit roles will take precedence. For example, if the request defines user A as a Viewer on **MyServer** and user A is also defined as an Admin on All Servers, then user A will be defined as an Admin on All Servers but as a Viewer on **MyServer**.

> **Note** The user permissions in Enterprise Manager are completely independent of the user permissions in Replicate. Consequently, `AemPutServerAcl` will affect the server's Enterprise Manager user permissions, but will *not* affect Replicate's user permissions.
>
> Moreover, when performing an operation via Enterprise Manager, the user permissions defined for the server entity in Enterprise Manager apply, whereas when performing an operation directly via the Replicate Console, the user permissions defined in Replicate apply.

> **Note** Defining the same user/group in different roles is not allowed. However, if the same user or group is defined in different roles but with a different case (e.g. Mike vs. mike or Analysts vs. ANALYSTS), no error will be returned and the strongest role will take precedence.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void PutServerAcl(

      AemAuthorizationAcl payload,

      string server

);
```

Parameters

Parameter	Type	Description
payload	AemAuthorizationAcl	
DisableInheritance	bool	If set to "true", the server does not inherit ACLs from its ancestors (in addition to its explicit ACLs). If set to "false", the server inherits ACLs from its ancestors, in addition to any explicit ACLs

Parameter	Type	Description
AdminRole	AemRoleDef	Users and/or groups assigned as Admin role
DesignerRole	AemRoleDef	Users and/or groups assigned as Designer role
OperatorRole	AemRoleDef	Users and/or groups assigned as Operator role
ViewerRole	AemRoleDef	Users and/or groups assigned as Viewer role
Groups	List<AemGroupRef>	Groups assigned as the role
Name	string	The group name
Users	List<AemUserRef>	Users assigned as the role
Name	string	The user name
server	string	The name of the server

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
DESERIALIZE_ TO_TYPE	"Failed to deserialize json to type AemAuthorizationAcl: {message}"	Returned when the JSON format is invalid format. For example, such an error will be returned if the JSON contains an unknown role.
AEM_PUT_ SERVER_ACL_ INNER_ERR	Failed to put ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to put the server's ACL.

Error	Message	Description
AEM_NO_DOMAIN_IN_USER	User "{userName}" must be preceded by a domain name, separated by a backslash. **Example:** domain_name\user_name.	Returned when the domain is missing from the user name.
AEM_NO_DOMAIN_IN_GROUP	Group "{groupName}" must be preceded by a domain name, separated by a backslash. **Example:** domain_name\group_name.	Returned when the domain is missing from the group name.
AEM_NO_ADMIN_ON_SERVER	Requested server "{serverName}" has no admin user. At least one user or group must be assigned to the "admin" role.	Returned when there is no admin on the server. Possible reasons: » The request JSON is set to `disable_inheritance=true` and the explicit admin role in the JSON is empty. » The JSON is set to `disable_inheritance=true`, the explicit admin role in the JSON is empty, and the parent levels do not have an admin user to inherit.
AEM_USER_ASSIGNED_TO_MULTIPLE_ROLES	User "{userName}" is assigned to multiple roles. Users can only be assigned to a single role.	Returned when a user is assigned to multiple roles.
AEM_GROUP_ASSIGNED_TO_MULTIPLE_ROLES	Group "{groupName}" is assigned to multiple roles. Groups can only be assigned to a single role.	Returned when a group is assigned to multiple roles.

Error	Message	Description
AEM_USER_ GROUP_ MULTIPLE_ ASSIGNED	"{userName/groupName}" is assigned to multiple roles or to the same role twice. Users/groups can only be assigned once, and to a single role.	Returned either when the specified user already exists as a group in the same/another role, or the specified group already exists as a user in the same/another role.

GetServer

Retrieves the definition (Connection Properties) of the specified server. This method can be used together with PutServer in order to update the connection properties of an existing server. First call GetServer, then edit the returned properties as required, and finally, call PutServer.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemServer GetServer(

      string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server to retrieve.

Return Values

AemServer (AemReplicateServer or AemComposeServer that inherited from AemServer)

Parameter	Type	Description
Host	string	The host name or IP address of the server.

Parameter	Type	Description
Port	string	The port through which the server is accessed.
Name	string	The name of the server.
Description	string	The server description.
Username	string	The user name to connect to the Replicate/Compose Server.
Password	string	The password to connect to the Replicate/Compose Server.Note The password identifier (GUID) that is returned by GetServer is valid only for the session in which it was generated. Using it in another session (for example as input for PutServer) will result in exception.
VerifyServerCertificate	bool	When "true", Qlik Enterprise Manager verifies that the Server certificate is trusted, thereby reducing the chance of "man-in-the-middle" attacks. For details on setting this option, see PutServer.
Monitored	bool	Whether to retrieve tasks and messages from this server or not.

Errors

See general errors.

GetServerAcl

Retrieves the explicit ACL defined in Qlik Enterprise Manager for the specified server, including a Boolean indication if ACL inheritance is disabled or enabled for the server.

The method returns the explicit ACL only. In other words, it does not return inherited ACLs.

If all of the servers ACLs are inherited (i.e. no ACL was explicitly defined for the server), an error will be returned indicating that no ACL was found.

This method can be used together with `AemPutServerAcl` in order to update an existing server's ACL. First call `AemGetServerAcl`, then edit the returned roles as required, and finally, call `AemPutServerAcl`.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemAuthorizationAcl GetServerAcl(

       string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server where the ACL is located.

Return Values

AemAuthorizationAcl

Parameter	Type	Description
DisableInheritance	bool	If set to "true", the server does not inherit ACLs from its ancestors (in addition to its explicit ACLs). If set to "false", the server inherits ACLs from its ancestors, in addition to any explicit ACLs
AdminRole	AemRoleDef	Users and/or groups assigned as Admin role
DesignerRole	AemRoleDef	Users and/or groups assigned as Designer role
OperatorRole	AemRoleDef	Users and/or groups assigned as Operator role
ViewerRole	AemRoleDef	Users and/or groups assigned as Viewer role

Parameter	Type	Description
Groups	List<AemGroupRef>	Groups assigned as the role
Name	string	The group name
Users	List<AemUserRef>	Users assigned as the role
Name	string	The user name

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_GET_ SERVER_ACL_ INNER_ERR	Failed to get ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to get the server ACL.
AEM_SERVER_ HAS_NO_ACL	ACL for server "{server}" could not be found.	Returned if no explicit ACL is defined for the server. **Note** A server that does not have its own explicit ACL inherits the ACL from its ancestors. Inherited ACLs are *not* returned by this method.

GetServerList

Retrieves a list of servers under Qlik Enterprise Manager management as well as each server's properties.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemGetServerListResp GetServerList(

);
```

Parameters

N/A

Return Values

AemGetServerListResp

Value	Type	Description
ServerList	List<AemServerInfo>	ReplicateServerInfo or ComposeServerInfo that inherit from AemServerInfo.
Description	string	The description of the server
Host	string	The host name or IP address of the server.
LastConnection	string	The date and time of the last successful sync/retrieval of tasks and messages.
Message	string	The error message if Qlik Enterprise Manager fails to connect to the server.
Name	string	The name of the server.

Platform	AemPlatform
	
	{
	
	UNKNOWN = 0,
	WINDOWS = 1,
	LINUX = 2
	
	}
		AemPlatform

Port	string	The port through which the server is accessed.

Value	Type	Description

State	AemServerState
	
	{
	
	NOT_MONITORED = 0,
	
	MONITORED = 1,
	
	ERROR = 2
	
	}
		AemServerState

Version	string	The Replicate/Compose Server version

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_SERVER_ NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.

DeleteServer

Description

When this method is called, Qlik Enterprise Manager will:

» Delete the specified server from Qlik Enterprise Manager

» Stop monitoring any tasks that were defined on the server

» Delete all messages related to the server from the Message Center

» Delete all user roles defined for the server, the server tasks, and the server endpoints

> **Note** The above operations will be performed, regardless of whether the server is currently being monitored or in an error state.

Required User Role: See Required Enterprise Manager Permissions**.**

Syntax

```
public void DeleteServer(

      string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server to be deleted.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Text	Description
AEM_SERVER_ NOT_FOUND	Requested server "{server}" could not be found.	The server name is unknown to Qlik Enterprise Manager.
AEM_DELETE_ SERVER_INNER_ ERR	Failed to delete requested server "{server}".	Qlik Enterprise Manager encountered an error/exception when trying to delete the server.

DeleteServerAcl

Deletes the explicit ACL defined in Qlik Enterprise Manager for the specified server. Inherited ACLs are not affected by this method. Once the explicit ACL is deleted from the server, all ACLs will be automatically inherited from the server's ancestors.

Required User Role: See Required Enterprise Manager Permissions**.**

Syntax

```
public void DeleteServerAcl(
```

```
        string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server whose ACL needs to be deleted.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_DELETE_ SERVER_ACL_ INNER_ERR	Failed to delete ACL of server "{server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to delete the server's ACL.
AEM_SERVER_ HAS_NO_ACL	ACL for server "{server}" could not be found.	Returned when the specified server has no explicit ACL defined.

GetTaskList

Receive a list of tasks per selected and authorized server. For each task, the API returns a few values.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemGetTaskListResp GetTaskList(

        string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the tasks reside.

Return Values

AemGetTaskListResp

Value	Type	Description
TaskList	List<AemTaskInfo>	An array of Endpoint objects.
Name	string	The name of the task
State	AemTaskState	
	{	
	STOPPED = 0,	
	RUNNING = 1,	
	ERROR = 2,	
	RECOVERY = 3	
	}	

Value	Type	Description

StopReason	AemTaskStopReason
	
	{
	
	NONE = 0,
	
	NORMAL = 1,
	
	RECOVERABLE_
	ERROR = 2,
	
	FATAL_ERROR =
	3,
	
	FULL_LOAD_
	ONLY_FINISHED
	= 4,
	
	STOPPED_
	AFTER_FULL_
	LOAD = 5,
	
	STOPPED_
	AFTER_CACHED_
	EVENTS = 6,
	
	EXPRESS_
	LICENSE_
	LIMITS_
	REACHED = 7,
	
	STOPPED_
	AFTER_DDL_
	APPLY = 8,
	
	STOPPED_LOW_
	MEMORY = 9,
	
	STOPPED_LOW_
	DISK_SPACE =
	10
	
	}
		The reason the task stopped. For Compose tasks, this will always be NONE.

Message	string	The message if the task stopped due to an error.

Value	Type	Description
AssignedTags	array	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

Errors

See general errors.

GetTaskDetails

Retrieves details about a selected and authorized task. The API returns full monitoring information related to the selected task.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemGetTaskDetailsResp GetTaskDetails(

    string server,

    string task

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server.
task	string	The name of the task.

Return Values for Replicate Tasks

AemGetTaskDetailsResp

Value	Type	Description
Task	AemTaskInfoDetailed	
Type	string	The task type: AemTaskInfoDetailed
Name	string	The name of the task.
Description	string	The task description. If there is no description, an empty string will be returned.
CdcEventCounters	AemTaskCdcEventCounters	All numeric data concerning CDC events
AppliedDdlCount	long	The total number of metadata changes, such as add column
AppliedDeleteCount	long	The number of records deleted in total for all tables
AppliedInsertCount	long	The number of records added in total for all tables
AppliedUpdateCount	long	The number of records updated in total for all tables
CdcLatency	AemCdcLatency	CDC latency information

Value	Type	Description
SourceLatency	string	The time gap between the original change in the source endpoint and capturing it, in hh:mm:ss
TotalLatency	string	The overall latency (source latency + target latency + apply latency), in hh:mm:ss
CdcThroughput	AemCdcThroughput	Indicates how fast the table records are being replicated to the target endpoint (by number or volume of records). Refers only to the current/last CDC.
SourceThroughputRecordsCount	AemCdcThroughputItem	The current source throughput, in rec/sec
SourceThroughputVolume	AemCdcThroughputItem	The current source throughput, in kbyte/sec
TargetThroughputRecordsCount	AemCdcThroughputItem	The current target throughput, in rec/sec
TargetThroughputVolume	AemCdcThroughputItem	The current target throughput, in kbyte/sec
Current	long	

Value	Type	Description
CdcTransactionsCounters	AemCdcTransactionsCounters	All numeric data concerning CDC transactions
AppliedComittedTransactionCount	long	The number of transactions committed.
AppliedRecordsComittedCount	long	The sum of all records/events in all Completed transactions
AppliedRecordsInProgressCount	long	The sum of all records/events in all In-Progress transactions
AppliedTransactionsInProgressCount	long	The number of transactions in progress.
AppliedVolumeComittedMb	long	The sum of all volume/events in all Completed transactions, in MB.
CommitChangeRecordsCount	long	The number of COMMIT change records.
IncomingAccumulatedChangesOnDiskCount	long	The number of changes accumulated on disk until source commit
IncomingAccumulatedChangesInMemoryCount	long	The number of changes accumulated in memory until source commit.

Value	Type	Description
IncomingApplyingChangesInMemoryCount	long	The number of changes in memory during apply and until target commit.
IncomingApplyingChangesOnDiskCount	long	The number of changes on disk during apply and until target commit.
RollbackChangeRecordsCount	long	The number of ROLLBACK change records.
RollbackChangeVolumeMb	long	The volume of ROLLBACK changes, in MB.
RollbackTransactionCount	long	The number of changes in memory during apply and until target commit.
FullLoadCompleted	bool	
FullLoadCounters	AemTaskFullLoadCounters	All numeric data concerning Full Load events.
EstimatedRecordsForAllTablesCount	long	The estimated number of records remaining to be loaded into the target endpoint.
RecordsCompletedCount	long	The total number of records that have completed loading into the target endpoint.

Value	Type	Description
TablesCompletedCount	int	The number of tables that have been loaded into the target endpoint.
TablesLoadingCount	int	The number of tables that are currently being loaded into the target endpoint.
TablesQueuedCount	int	The number of tables that are waiting to be loaded due to an error.
TablesWithErrorCount	int	The number of tables that could not be loaded due to an error.
FullLoadEnd	string	Indicates whether the full load process has ended.
FullLoadStart	string	The start time of the full load process. Format: YYY MM DD Timezone: UTC
FullLoadThroughput	AemFullLoadThroughput	
SourceThroughputRecordsCount	int	The current source throughput, in rec/sec.
SourceThroughputVolume	int	The current source throughput, in kbyte/sec.

Value	Type	Description
TargetThroughputRecordsCount	int	The current target throughput, in rec/sec.
TargetThroughputVolume	int	The current target throughput, in kbyte/sec.
MemoryMb	long	The current utilization of memory, in MB. A task's memory utilization is sampled every 10 seconds. When the task is not running, the value is set to zero (0).
CpuPercentage		The current CPU usage of the Replicate task process.

> **Notes**
>
> Only available for Replicate tasks running on Replicate 6.2 and above. When not available, this parameter will be returned as -1.

Value	Type	Description
DiskUsageMb	long	The current utilization of disk space, in MB. A task's disk utilization is sampled every minute.
DataErrorCount	long	The total number of data errors in all tables involved in the task. The count is affected by data errors and the **Reset Data Errors** option available when you drill down to a task.
Options	AemCommonSettings	
ApplyChangesEnabled	bool	See Task Options.
AuditChangesEnabled	bool	See Task Options.
FullLoadEnabled	bool	See Task Options.
StoreChangesEnabled	bool	See Task Options.

ReplicateProfile	AemReplicateTaskProfile
	
	{
	
	UNIDIRECTIONAL = 1,
	
	BIDIRECTIONAL = 2,
	
	LOGSTREAM = 3
	
	}
		AemReplicateTaskProfile

SourceEndpoint	TaskEndpoint	

Value	Type	Description
Name	string	The name of the source endpoint.
Type	string	The source endpoint type.
TargetEndpoint	TaskEndpoint	
Name	string	The name of the target endpoint.
Type	string	The target endpoint type.

State	AemTaskState
	
	{
	
	STOPPED = 0,
	
	RUNNING = 1,
	
	ERROR = 2,
	
	RECOVERY = 3
	
	}
		The current state of the task.

Value	Type	Description

TaskStopReason	AemTaskStopReason
	
	{
	
	NONE = 0,
	
	NORMAL = 1,
	
	RECOVERABLE_
	ERROR = 2,
	
	FATAL_ERROR = 3,
	
	FULL_LOAD_ONLY_
	FINISHED = 4,
	
	STOPPED_AFTER_
	FULL_LOAD = 5,
	
	STOPPED_AFTER_
	CACHED_EVENTS =
	6,
	
	EXPRESS_LICENSE_
	LIMITS_REACHED =
	7,
	
	STOPPED_AFTER_
	DDL_APPLY = 8,
	
	STOPPED_LOW_
	MEMORY = 9,
	
	STOPPED_LOW_
	DISK_SPACE = 10
	
	}
		The reason the task stopped.

Value	Type	Description
LogStreamStaging	string	If the task is writing to/reading from the Log Stream staging folder, the name of the associated Log Stream Staging task will be returned. Otherwise, an empty string will be returned.
Message	string	The message if the task stopped due to an error.
AssignedTags	array	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

Return Values for Compose Tasks

Name	Type	Description
type	string	The task type: AemComposeTaskInfoDetailed
project	string	The name of the Compose project
name	string	The name of the task
description	string	The task description. If there is no description, an empty string will be returned.
state	string	The current task state
message	string	The message shown in the event that the task ends with an error.
options	AemCommonSettings	
FullLoadEnabled	bool	Indicates whether the Full Load option is enabled. Can be "true" or "false"
ApplyChangesEnabled	bool	Indicates whether the Change Processing option is enabled. Can be "true" or "false"
source_endpoint	TaskEndpoint	
name	string	The logical name of the landing database.
type	string	The landing database type.
target_endpoint	TaskEndpoint	
name	string	The logical name of the storage database.
type	string	The storage database type.

Name	Type	Description
LoadingCompleted	bool	Indicates whether the loading process has completed. Can be "true" or "false"
LoadingStart	string	The start time of the loading process Format: YYY MM DD Timezone: UTC
LoadingEnd	string	The end time of the loading process Format: YYY MM DD Timezone: UTC
LoadingCounters	AemTaskFullLoadCounters	
TablesTotalCount	int	The total number of tables.
TablesCompletedCount	int	The number of tables that have been loaded into the target endpoint
TablesLoadingCount	int	The number of tables that are currently being loaded into the target endpoint
TablesQueuedCount	int	The number of tables that are waiting to be loaded due to an error
TablesWithErrorCount	int	The number of tables that could not be loaded due to an error
CommandsTotalCount	int	The total number of commands executed
CommandsCompletedCount	int	The total number of commands completed

Name	Type	Description
AssignedTags	array	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_TASK_NOT_ FOUND	Replication task{task} on server {server} could not be found.	The task name is unknown to Qlik Enterprise Manager.

GetTableList

Retrieves the list of tables of a specific Replicate task that match the specified state(s), table schema(s), and table name(s). This is useful for automation processes, for example, as it allows you to retrieve tables in a certain state (e.g. suspended) and then peform an operation on them (e.g. ReloadTable).

Required User Role: See Required Enterprise Manager Permissions**.**

Syntax

```
AemGetTableListResp GetTableList(

        string server,

        string task,

        string schema = null,

        string table = null,

        bool includequeued = false,

        bool includeloading = false,

        bool includecompleted = false,

        bool includechangeprocessing = false,

        bool includeerror = false
```

)

Request Parameters

Value	Type	Description
server	string	The Replicate Server name as defined on Qlik Enterprise Manager. **Example:** myrepsrv1
schema	string	The default is all source schemas. Specifying a specific schema name will retrieve all tables from the specified schema. Specifying a pattern or letters included in the schema name will retrieve all tables from schemas that match the pattern or that include the specified letters. For example, specifing "ad" will retrieve tables from the "**ad**venture" and "tr**ad**emark" schemas.
table	string	The default is all source tables. Specifying a specific table name will retrieve the specified table. Specifying a pattern or letters included in the table name will retrieve all tables that match the pattern or that include the specified letters. For example, specifing "em" will retrieve the "**em**ployees" and "t**em**p" tables.
includequeued	boolean	Whether to retrieve tables in a queued state. Default is false.
includeloading	boolean	Whether to retrieve tables in a loading state. Default is false.
includecompleted	boolean	Whether to retrieve tables in a completed state. Default is false.

Value	Type	Description
includechangeprocessing	boolean	Whether to retrieve tables in a Change Processing state (i.e. that are having changes applied to them). Default is false.
includeerror	boolean	Whether to retrieve tables in an error state. Default is false.

Return Values

AemGetTableListResp

Value	Type	Description
TableList	List	List of tables that match the specified input parameters.
schema	string	The name of the schema.
table	string	The name of the table.
state	enum	The current state of the table.

Errors

All of the general errors as well as the errors listed in the table below.

HTTP Code	Qlik Enterprise Manager Code	Text	Description
500	AEM_TABLE_ LIST_INNER_ ERR	Failed to retrieve table list for replication task "{task}" on server "{server}". Error: "{message}"	Returned when the table list cannot be retrieved.
500	AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.

GetTableStatuses

Retrieves the tables statuses of a specific Replicate task for all tables that match the specified state(s), table schema(s), and table name(s). This is useful for automation processes, for example, as it allows you to retrieve tables in a certain state (e.g. suspended) and then peform an operation on them (e.g. ReloadTable).

Required User Role: See Required Enterprise Manager Permissions**.**

Syntax

```
AemGetTableStatusesResp GetTableStatuses(

     string server,

     string task,

     string schema = null,

     string table = null,

     bool includequeued = false,

     bool includeloading = false,

     bool includecompleted = false,

     bool includechangeprocessing = false,
```

```
       bool includeerror = false
)
```

Request Parameters

Value	Type	Description
Server	string	The Replicate Server name as defined on Qlik Enterprise Manager. **Example:** myrepsrv1
Task	string	The Replicate task name.
Schema	string	The default is all source schemas. Specifying a specific schema name will retrieve all tables from the specified schema. Specifying a pattern or letters included in the schema name will retrieve all tables from schemas that match the pattern or that include the specified letters. For example, specifing "ad" will retrieve tables from the "**ad**venture" and "tr**ad**emark" schemas.
Table	string	The default is all source tables. Specifying a specific table name will retrieve the specified table. Specifying a pattern or letters included in the table name will retrieve all tables that match the pattern or that include the spe-cified letters. For example, spe-cifing "em" will retrieve the "**em**ployees" and "t**em**p" tables.
IncludeQueued	boolean	Whether to retrieve tables in a queued state. Default is false.
IncludeLoading	boolean	Whether to retrieve tables in a loading state. Default is false.

Value	Type	Description
IncludeCompleted	boolean	Whether to retrieve tables in a completed state. Default is false.
IncludeChangeProcessing	boolean	Whether to retrieve tables in a Change Processing state (i.e. that are having changes applied to them). Default is false.
IncludeError	boolean	Whether to retrieve tables in an error state. Default is false.

Return Values

AemGetTableStatusesResp

Name	Type	Description
TableDetails	List	List of table statuses that match the specified request parameters.
SchemaOnSource	string	Source schema name.
TableOnSource	string	Source table name.
SchemaOnTarget	string	Target schema name. If this information not available, an empty string will be returned.
TableOnTarget	string	Target table name. If this information not available, an empty string will be returned.
State	enum	An enum reflecting the table state. See Table state.
DataErrorsCount	int64	The number of data errors encountered when replicating the table.
table_full_load_info		
StartTime	string	Date-time of when the table full load started. Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).
EndTime	string	Date-time of when the table full load started. Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).

Name	Type	Description
EstimatedRowCount	int64	Relevant only if table in certain states (loading/queued).
EstimatedEndTime	string	Relevant only if table in certain states (loading/queued). Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).
TransferredRowCount	int64	The number of rows transferred to the target, after the source filtering, but before the target filtering.
TransferredVolumeMb	int64	The amount of bytes transferred to the target, after the source filtering, but before the target filtering.

End of TableFullLoadInfo

TableCdcInfo

Name	Type	Description
InsertCount	int64	The number of records inserted to the target table.
UpdateCount	int64	The number of records updated in the target table.
DeleteCount	int64	The number of records deleted in the target table.
DdlCount	int64	The number of DDL operations performed on the target table.
LastUpdateTime	string	The last time that the table was updated on target. Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).
CachedInsertCount	int64	INSERT operations that were cached during Full Load.
CachedUpdateCount	int64	UPDATE operations that were cached during Full Load.
CachedDeleteCount	int64	DELETE operations that were cached during Full Load.

End of TableCdcInfo

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_SERVER_ NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.
AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.
AEM_TABLE_ STATUSES_ INNER_ERR	Failed to retrieve table statuses for replication task "{task}" on server " {server}". Error: "{message}"	Returned when the table statuses cannot be retrieved.

DeleteTask

Deletes the specified task. The task's logs will be deleted only if `deletetasklogs=true` is set.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void DeleteTask(

     string server,

     string task,

     bool deletetasklogs = false

);
```

Parameters

Parameter	Type	Description
server	string	The server where the task is defined.
task	string	The task to be deleted.
deletetasklogs	bool	Whether to delete the task logs or not.

Errors

Error	Message	Description
AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned if the task name is unknown to Qlik Enterprise Manager.
AEM_DELETE_ TASK_INNER_ ERR	Replication task {task] on server {server} could not be deleted due to an error.	Returned if Enterprise Manager encounters an error/exception when trying to delete the task.
AEM_DELETE_ TASK_ERR	Replication task {task] on server {server} could not be deleted due to an error. {2}	Returned if Enterprise Manager encounters an error when trying to delete the task.
AEM_TASK_ NOT_STOPPED	Replication task {task] on server {server} must be stopped before it can be deleted.	Returned if the replication task was running when `AemDeleteTask` attempted to delete it.

ExportTask

Export definitions from the selected task on the selected server. The definitions always include task settings, tables/table patterns (include/exclude), table settings and global transformations. The endpoint definition is only exported along with the task definition if with endpoints=true is set.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public string ExportTask(

    string server,

    string task,

    bool withendpoints = false

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the task is defined.
task	string	The task to be exported.
withendpoints	bool	Whether or not to export the endpoint definitions as well.

Return Values

Exported task JSON file as a string

Errors

Error	Message	Description
AEM_METHOD_ NOT_ SUPPORTED_ VERSION	AemExportTask is only supported on Replicate 5.5 or above.	AemExportTask is only supported on Replicate 5.5 or above.
AEM_EXPORT_ TASK_NO_ PERMISSION_ ON_ENDPOINT	Failed to export task {task} from Replicate server {server} as the logged in user does not have permission to access one or both of the task's endpoints.	Export all cannot be carried out because the user does not have permissions on one or more endpoints.

ImportTask

Import a single task's JSON definitions provided in the request body into the requested server repository on the selected server.

The ImportTask method enables importing all valid JSON definitions provided in the request body.

This includes task settings, tables/table patterns (include/exclude), table settings and global transformations.

Information about endpoints is included if it was included in the JSON file.

When you import a task, Items that existed in the target server before the import and have no new JSON definition in the request body are not modified and not removed. This means that ImportTask provides no way of removing old definitions that are no longer needed.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void ImportTask(

      string payload,

      string server,

      string task

);
```

Parameters

Parameter	Type	Description
payload	string	A JSON document to import
server	string	The name of the server to import to.
task	string	Name of the task to import

Return Values

N/A

Errors

Error	Message	Description
AEM_ IMPORT_ TASK_NO_ PERMISSION_ ON_ ENDPOINT	Failed to import task {task} to replication server {server} as the logged in user does not have permission to add or modify endpoints.	The task cannot be imported because it includes endpoint definitions, and the user does not have permissions to insert endpoints.
AEM_ IMPORT_ TASK_ CONTAIN_ ALIEN_ITEMS	Failed to import task {task} to replication server {server} as the JSON file contains unsupported objects.	The task cannot be imported because the stream contains items that cannot be imported (such as remote machines).
AEM_ IMPORT_ TASK_NAME_ DIFFER	Failed to import task {task} to replication server {server} as the JSON file contains conflicting tasks.	The task cannot be imported because the stream contains conflicting tasks.
AEM_ IMPORT_ TASK_ CONTAINS_ MULTIPLE_ TASKS	Failed to import task to replication server {server} as the JSON file contains multiple tasks. To import multiple tasks, use AemImportAll instead.	The task cannot be imported since the stream contains multiple tasks, and the method can only import a single task.
AEM_TASK_ NOT_ IMPORTABLE	Failed to import task {task} as the task is running on server {server}. Stop the task and then try again.	Occurs when trying to import a running task.
AEM_ IMPORT_ TASK_ CONTENT_ EMPTY	Failed to import task {task} to replication server {server} as the JSON file is empty.	The task cannot be imported as the specified JSON file is empty.
AEM_ IMPORT_ TASK_ ENDPOINT_ DIFFER	Failed to import task {task} to server {server} as the endpoint names in the JSON file's "task" and "databases" sections are not the same.	The task cannot be imported as the endpoint names in the specified JSON file's "task" and "databases" sections are different.

Error	Message	Description
AEM_ IMPORT_ TASK_NO_ ENDPOINT_ IN_SERVER	Failed to import task {task} to replication server {server} as the {role} endpoint {endpoint} does not exist on the target server.	The task cannot be imported as one of the endpoints specified in the exported JSON file does not exist on the target server.

StopTask

Stop the selected task.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemStopTaskResp StopTask(

    string server,

    string task,

    int timeout = 30

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server.
task	string	The name of the task.
timeout	int	Time in seconds to wait until getting a response.

Return Values

AemStopTaskResp

Parameter	Type	Description

State	AemTaskState
	
	{
	
	STOPPED = 0,
	
	RUNNING = 1,
	
	ERROR = 2,
	
	RECOVERY = 3
	
	}
		The current state of the task.

ErrorMessage	string	The description of the error

Errors

Error	Message	Description
AEM_TASK_ ALREADY_ STOPPED	Replicate task {task} on server {server} is already stopped.	Cannot stop a task that is in Stopped state.
AEM_STOP_ TASK_INNER_ ERR	Failed to stop Replicate task {0} on server {1}: <{2}>	An error occurred while trying to stop the task.
AEM_STOP_ TASK_TIMEOUT	A timeout occurred when trying to stop Replicate task {0} on server {1}	A timeout occurred while trying to stop the task.

RunTask

Run the selected task according to the specified option.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemRunTaskResp RunTask(

    AemRunTaskReq payload,

    string server,
```

```
        string task,

        AemRunTaskOptions option = AemRunTaskOptions.RESUME_PROCESSING,

        int timeout = 30

);
```

Parameters

Parameter	Type	Description
payload	AemRunTaskReq	
Cdcposition	string	The `cdcposition` parameter can either be specified inline or in an external JSON file. The format for both is described in below. Mandatory for all AemRunTask options.
server	string	The name of the server on which to run the task.
task	string	The name of the task to run.

Parameter	Type	Description

option	AemRunTaskOptions
	
	{
	
	NONE = 0,
	RESUME_
	PROCESSING
	= 1,
	
	RELOAD_
	TARGET = 2,
	
	RESUME_
	PROCESSING_
	FROM_
	TIMESTAMP =
	3,
	
	METADATA_
	ONLY_
	RECREATE_
	ALL_TABLES
	= 4,
	
	METADATA_
	ONLY_
	CREATE_
	MISSING_
	TABLES = 5,
	
	RECOVER_
	USING_
	LOCALLY_
	STORED_
	CHECKPOINT
	= 6,
	
	RECOVER_
	USING_
	CHECKPOINT_
	STORED_ON_
	TARGET = 7
	
	}
		For replication tasks, any of the options (except NONE) can be specified. For Compose tasks, only NONE can be specified.

Parameter	Type	Description
timeout	int	The time in seconds to wait for a response.

Return Value

AemRunTaskResp

Parameter	Type	Description
ErrorMessage	string	The description of the error.

State	AemTaskState
	
	{
	STOPPED = 0,
	RUNNING = 1,
	ERROR = 2,
	RECOVERY = 3
	}
		The current state of the task.

Errors

Error	Message	Description
AEM_TASK_ ALREADY_ RUNNING	Replicate task {task} on server {server} is already running.	The task cannot be run because it is already running.
AEM_TASK_ IN_RECOVERY	Replicate task {task} on server {server} cannot be run as it is in a recovery state.	The task cannot be run because it is in Recovery state.

Error	Message	Description
AEM_ WRONG_ OPTION_FOR_ CDCPOSITION	Replicate task {task] on server {server} cannot be run with cdcposition {position} and option {option}. Change the option to RESUME_ PROCESSING_FROM_ TIMESTAMP or RECOVER_ USING_CHECKPOINT_STORED_ ON_TARGET.	When the option **Tables are already loaded. Start processing changes from Timestamp** is selected in the **Advanced Run Options** dialog box for a task, the option sent to the API must be `RESUME_ PROCESSING_FROM_TIMESTAMP`.
AEM_CDC_ POSITION_ ERR_FORMAT	The cdcposition parameter value for Replicate task {task} on server {server} is not in the correct format ('YYYY-MM-DDThh:mm:ssZ').	The cdcPosition parameter must follow this format: YYYY-MM-DDThh:mm:ssZ Parameters: task name and server name
AEM_RUN_ TASK_ TIMEOUT	Replicate task {task} on server {server} timed out when requested to "Run".	The task does not assume a Running state or any other steady state (error o stopped).
AEM_RUN_ TASK_INNER_ ERR	Replicate task {task} on server {server} encountered an error when requested to run.	Replicate experienced an error/exception when trying to run the task.
AEM_RUN_ TASK_NO_ SRC_NO_TRG	Replicate task {task} on server {server} has no source or target endpoints.	Task validation revealed that the task is missing a source and a target.
AEM_RUN_ TASK_NO_ SRC	Replicate task {task} on server {server} has no source endpoint.	Task validation revealed that the task is missing a source.
AEM_RUN_ TASK_TRG	Replicate task {task} on server {server} has no target endpoint.	Task validation revealed that the task is missing a target
AEM_RUN_ TASK_NOT_ FL_NOR_CDC	Replicate task {task} on server {server} cannot be run without at least one of the replication options enabled (Full Load, Apply Changes, or Store Changes).	Task validation of a unidirectional task revealed that the replication option definition for the task is missing (Full Load, Apply Changes, or Store Changes).

Error	Message	Description
AEM_RUN_ BIDI_TASK_ NO_FL_NOR_ CDC	Replicate task {task} on server {server} cannot be run without at least one of the replication options enabled (Full Load or Apply Changes).	Task validation of a unidirectional task revealed that the replication option definition for the task is missing (Full Load, Apply Changes, or Store Changes).

GetEndpointList

Retrieves a list of endpoints and their properties for the specified server.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemGetEndpointListResp GetEndpointList(

     string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the endpoints are defined.

Return Values

AemGetEndpointListResp

Parameter	Type	Description
EndpointList	List<Endpoint>	An array of Endpoint objects.
Description	string	The endpoint description
IsLicensed	bool	Indicates whether the endpoint is licensed on this server.
Name	string	The endpoint name.

Parameter	Type	Description

Role	EndpointRole
	
	`{`
	
	`ALL = 0,`
	
	`SOURCE = 1,`
	
	`TARGET = 2,`
	
	`BOTH = 3`
	
	`}`
		The endpoint role: SOURCE or TARGET.

Type	string	The endpoint type - for example, Oracle.

Errors

Error	Message	Description
AEM_ ENDPOINT_ LIST_INNER_ ERR	Failed to retrieve endpoints list from Replicate server {name}.	Replicate experienced an error/exception when trying to retrieve the endpoint list.

DeleteEndpoint

Description

Deletes the specified endpoint. Note that an endpoint can only be deleted if it is not in use by any task.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void DeleteEndpoint(

     string server,

     string endpoint

);
```

Parameters

Parameter	Type	Description
server		The server where the endpoint is defined.
endpoint		The name of the endpoint to be deleted.

Return Values

N/A

Errors

Error	Message	Description
AEM_ENDPOINT_NOT_FOUND	Replicate endpoint {endpoint} on server {server} could not be found.	Endpoint name unknown to Qlik Enterprise Manager.
AEM_DELETE_ENDPOINT_INNER_ERR	Failed to delete Replicate endpoint {endpoint} from server {server}.	Replicate encountered an error/exception when trying to delete the endpoint.
AEM_ENDPOINT_IS_IN_USE	Replicate endpoint {endpoint} on server {server} cannot be deleted as it is currently in use by one or more tasks.	The Replicate endpoint must be removed from its associated tasks before it can be deleted.

ReconfigureEndpointNoWait

Call this method to override the source endpoint settings with settings from another endpoint *of the same type.* This method also supports automatically stopping and then resuming all tasks that are using the source endpoint (which is required for unplanned switchovers).

> **Notes**
>
> » Supported with the Oracle source endpoint only.
>
> » Using this method, requires you to set up relevant Qlik Replicate task(s) with *three* separate source endpoints - two *inactive* source endpoints defined with the primary and secondary database connection settings, and one active source endpoint (initially defined with the primary database connection settings).
>
> For detailed instructions, see Reconfiguring Endpoints

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void ReconfigureEndpointNoWait(

    string server,

    string endpoint,

    string configuration = null,

    bool recycle = true

);
```

Parameters

Parameter	Type	Description
server	string	The name of the Replicate server (as defined in Qlik Enterprise Manager) on which the task(s) are running.
endpoint	string	The name of the source endpoint defined for the Replicate task(s).
configuration	string	The name of the secondary endpoint (or the primary endpoint when reverting the settings).

Parameter	Type	Description
recycle	bool	Whether to stop and resume the Replicate task(s) automatically. The default is "true" i.e. when an unanticipated switchover occurs, tasks using the source endpoint will be automatically stopped and then resumed after the source endpoint is updated with the settings from the secondary endpoint.
		Set to "false" for planned switchovers (such as migrating to a production database or switching back to the primary database).

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint "{endpoint}" on server "{server}" could not be found.	The specified endpoint could not be found.
AEM_ RECONFIGURE_ ENDPOINT_ INNER_ERR	Failed to reconfigure endpoint " {endpoint}" on server "{server}". Error: "{message}"	Qlik Enterprise Manager failed to reconfigure the endpoint with the settings of the secondary endpoint.

ExportAll

Export all definitions from the requested server repository on the selected server (server settings, tasks, endpoints, and so on). The definitions are exported to a JSON file.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public string ExportAll(
```

```
    string server

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server containing the repository to be exported.

Return Values

Export JSON file as a string.

Errors

Error	Message	Description
AEM_METHOD_ NOT_ SUPPORTED_ VERSION	AemExportAll is only supported on Replicate 5.5 or above.	The method requires Replicate 5.5 or above.
AEM_EXPORT_ NO_ PERMISSION_ ON_TASK	Failed to export all tasks from Replicate server {server} as the logged in user does not have permission to export one or more of the defined tasks.	Export all cannot be carried out because the user does not have permissions on one or more tasks.
AEM_EXPORT_ NO_ PERMISSION_ ON_ENDPOINT	Failed to export all tasks from server {server} as the logged in user does not have permission to export one or more of the defined endpoints.	Export all cannot be carried out because the user does not have permissions on one or more endpoints.

ImportAll

Import the JSON definitions provided in the request body into the requested server repository on the selected server. The ApiImportAll method uses "merge" semantics. In particular: All valid JSON definitions provided in the request body will be imported.

This includes server settings, task settings, endpoints, and other definitions.

Items that existed in the target server before the import and have no new JSON definition in the request body will not be modified and in particular will not be removed.

This means that ApiImportAll provides no way of removing old definitions that are no longer needed.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void ImportAll(

      string payload,

      string server

);
```

Parameters

Parameter	Type	Description
payload	string	A JSON document to import
server	string	The name of the server to import to.

Return Values

N/A

Errors

Error	Message	Description
AEM_METHOD_ NOT_ SUPPORTED_ VERSION	AemImportAll is only supported on Replicate 5.2 or above.	The method requires Replicate 5.2 or above.
AEM_IMPORT_ NO_ PERMISSION_ ON_TASK	Failed to import all tasks to replication server {server} as the logged in user does not have permission to add tasks.	Stream cannot be imported because the user does not have the permissions to add tasks.

Error	Message	Description
AEM_IMPORT_ NO_ PERMISSION_ ON_ENDPOINT	Failed to import all tasks to replication server {server} as the logged in user does not have permission to add endpoints.	Stream cannot be imported because the user does not have the permissions to add endpoints
AEM_IMPORT_ CONTENT_ EMPTY	Failed to import all tasks to replication server {server} as the JSON file is empty.	Stream cannot be imported because it contains no content.
AEM_IMPORT_ INVALID_ CONTENT	Failed to import all tasks to replication server {server} as the JSON file contains invalid content.	Stream cannot be imported because it contains invalid content.

ReloadTable

Reload a specific table.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void ReloadTable(

    string server,

    string task,

    string schema = null,

    string table = null

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server
task	string	The name of the task
schema	string	The name of the table schema to reload
table	string	The name of the table to reload

Return Values

N/A

Errors

Error	Message	Description
AEM_ INVALID_ TASK_NOT_ FL	Failed to reload table {table} as Full Load is not enabled for task {task}.	The table could not be reloaded because the task's Full Load replication option is not enabled.
AEM_ INVALID_ TASK_NT_ NTSUPPEP	Failed to reload table as this operation is not supported with the File Channel source endpoint.	The table could not be reloaded because the task's source endpoint is File Channel.
AEM_ RELOAD_ TABLE_ERR	Failed to reload table {schema}. {table} for Replication task {task} on server {server}: {message}	An error was encountered while trying to reload the specified table.

TestEndpoint

Connect to an endpoint to test connectivity and configuration (permissions, CDC configuration. etc.).

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemTestEndpointResp TestEndpoint(

    string server,

    string endpoint,

    int timeout = 60

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the endpoint is defined.
endpoint	string	The name of the endpoint.
timeout	int	Time in seconds to wait until getting a response.

Return Values

AemTestEndpointResp

Parameter	Type	Description
Status	AemEndpointState { UNKNOWN = 0, CONNECTED = 1, ERROR = 2 }	
Message	string	Short description of the error.
DetailedMessage	string	Detailed description of the error.

Errors

Error	Message	Description
AEM_TEST_ ENDPOINT_ CONNECTION_ TIMEOUT	A timeout occurred while testing the connection for endpoint {endpoint} on Replicate server {server}.	Connection was not established within 60 seconds.
AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint {0} on server {1} could not be found.	The specified endpoint could not be found.

DeleteOldChangeData

The method can be called on an ad-hoc basis to delete processed Change Data Partitions created on the target database by a Replicate task.

> » Partitions will only be deleted if the Change Data Partitioning and Partition Retention options are enabled in the Replicate console.
>
>   For more information, refer to the *Qlik Replicate Setup and User Guide*.
>
> » Partitions will only be deleted if the task is running. If the task is not running, the partitions will be deleted the next time the task runs.
>
> » If a retention barrier is set, partitions will only be deleted up to the retention barrier or the earliest of all retention barriers (when set by multiple applications). For example, if Application A sets July 7th, 2020 as a barrier, Application B sets August 7th, 2020 as a barrier, and Application C sets September 7th, 2020 as a barrier, partitions will be deleted up to July 7th, 2020.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public void DeleteOldChangeData(

AemDeleteOldChangeDataReq payload,

string server,

string task

);
```

Parameters

Parameter	Type	Description
payload	AemDeleteOldChangeDataReq	**Payload Parameter for Deleting Old Change Data Partitions:** **Name:** `TimestampOrOffset` **Type:** `String` The point in time after which partitions can be deleted. The parameter can either be specified as a timestamp or as an offset. If a retention barrier is set, partitions will be deleted up to the retention barrier date. If the specified timestamp/offset is earlier than the retention barrier, an error will be returned. **Timestamp Format:** [Date] (yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z') **Example:** 2020-06-30T16:15:00Z **Offset Format :** [Period] Format ISO 8601 duration **Example:** P1M3DT1H2M
server	string	The name of the server on which the task is running.
task	string	The name of the task.

Error Response

Message	Text	Description
AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
AEM_INVALID_ TIMESTAMP_ OR_OFFSET_ FORMAT	The specified deletion age does not conform to the expected timestamp or offset format. Timestamp format should be yyyy'-'MM'- 'dd'T'HH':'mm':'ss'Z'. Offset format should conform to ISO 8601 duration.	Returned when the specified deletion age does not conform to the expected timestamp or offset format.
AEM_DELETE_ OLD_CHANGE_ DATA_INNER_ ERR	Failed to request deletion of old change data for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered during partition deletion.

SetChangeDataRetentionBarrier

The method can be used to:

» Set a retention barrier for deleting consumed partitions. Setting a retention barrier will initiate periodic deletion of consumed Change Data Partitions from the target database defined for the specified task. Partitions will be deleted according to the **When deletion is initiated by a consuming application, delete partitions every** interval set on Replicate Server, and only up to the retention barrier or the earliest of all retention barriers (when set by multiple applications). For example, if Application A sets July 7th, 2020 as a barrier, Application B sets August 7th, 2020 as a barrier, and Application C sets September 7th, 2020 as a barrier, partitions will be deleted up to July 7th, 2020.

» Remove the retention barrier. Note that if there are multiple consuming applications, periodic deletion of consumed Change Data Partitions will only stop after *all* retention barriers have been removed.

» Partitions will only be deleted if the Change Data Partitioning and Partition Retention options are enabled in the Replicate console.

» Partitions will only be deleted if the task is running. If the task is not running, the partitions will be deleted the next time it runs.

Required permission: See Required Enterprise Manager Permissions.

Syntax

```
public void SetChangeDataRetentionBarrier(

AemSetChangeDataRetentionBarrierReq payload,

string server,

string task

);
```

Parameters

Parameter	Type	Description
AemSetChangeDataRetentionBarrierReq	payload	**Payload Parameters for Setting a Retention Barrier:**

Note The parameter type must be STRING.

`RetentionPoint=`*`timestamp`*

`Application=`*`application_name`*

> » *`timestamp`* is the date up to which partitions can be deleted. The timestamp must be in the following format: (yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z').
>
> » *`application_name`* is the name of the consuming application.

Example:

`RetentionPoint=2020-06-30T16:15:00Z`

`Application=Compose`

Payload Parameters for Removing the Retention Barrier (of type STRING):

`RetentionPoint=null`

`Application=`*`application_name`*

Where `application_name` is the name of the consuming application whose barrier you wish to remove.

Parameter	Type	Description
server	string	The name of the server on which the task is running.
task	string	The name of the task.

Error Response

Error	Message	Description
AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
AEM_INVALID_ TIMESTAMP_ FORMAT	The specified partition retention barrier does not conform to the expected timestamp format. Timestamp format should be yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'.	Returned when the specified partition retention barrier does not conform to the expected timestamp format.
AEM_SET_ CHANGE_ DATA_ RETENTION_ BARRIER_ INNER_ERR	Failed to set change data retention barrier for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered when trying to set the retention barrier.

GetChangeDataRetentionBarrier

Returns the date of the earliest partition retention barrier when multiple partition retention barriers have been set.

When different retention barriers have been set by multiple consuming applications, Replicate will delete old Change Data partitions up to the earliest partition retention barrier.

For information on setting a partition retention barrier, see SetChangeDataRetentionBarrier.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
public AemGetChangeDataRetentionBarrierResp GetChangeDataRetentionBarrier
(

string server,
```

```
string task

);
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the task is running.
task	string	The name of the task.

Response

Name	Type	Description
Application	string	The name of the consuming application that set the earliest partition retention barrier.
RetentionPoint	string Format: yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'	The date of the earliest partition retention barrier.

Error Response

Error	Message	Description
AEM_TASK_NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.

Error	Message	Description
AEM_GET_CHANGE_DATA_RETENTION_ BARRIER_INNER_ERR	Failed to get change data retention barrier for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered while attempting to get the earliest partition retention barrier.

Parameters

The following table lists all enum parameters that appear in the return values, along with their values.

Parameter Name	Value	Description
Server State	MONITORED	The server is being monitored, the Qlik Enterprise Manager is connected and synchronized successfully.
	ERROR	Qlik Enterprise Manager fails to connect and monitor the server.
	NOT_MONITORED	The server is not being monitored.
Server Platform	» WINDOWS » LINUX	

Parameter Name	Value	Description
License State	» LICENSE_VALID » LICENSE_INVALID_ CHECKSUM » LICENSE_EXPIRED NO_ LICENSE » MACHINE_NOT_LICENSED » INVALID_LICENSE	
Endpoint Role	SOURCE or TARGET	Specifies whether an endpoint is being used as a source or a target in a Replicate task.
Task State	RUNNING	The task is running.
	STOPPED	The task has not been run yet or has stopped running at some point during the replication.
	ERROR	The task has stopped due to a fatal error.
	RECOVERING	The task has detected an error and is trying to recover. After a limited number of attempts, the task either recovers and the state returns to RUNNING, or the task fails and the state turns to ERROR.

Parameter Name	Value	Description
Task options	full_load_enabled [bool]	Creates all files or tables at the target endpoint, automatically defines the metadata that is required at the target, and populates the tables with data from the source.
	apply_changes_enabled [bool]	Updates all changes made to files and tables that were created during the full load. Applied changes include inserts, updates, and removal of items.
	store_changes_enabled [bool]	Stores changes in Change tables. This value and the audit_changes_ enabled value are mutually exclusive.
	audit_changes_enabled [bool]	Stores changes in a single audit table. This value and the store_ changes_enabled_value are mutually exclusive.

Parameter Name	Value	Description
Task Stop reason	NONE	Indicates that a task is running and no Stop reason is prevalentt.
	NORMAL	Indicates that the task was stopped by the user.
	RECOVERABLE_ERROR	Indicates that the task is still active, but that there is a temporary problem, such as a missing connection. As soon as the error state is resolved, Replicate restarts the task.
	FATAL ERROR	Indicates that the task stopped and the error must be resolved manually. The task cannot be started again until the error has been resolved.
	FULL_LOAD_ONLY_FINISHED	Indicates that the task only finished full load.
	STOPPED_AFTER_FULL_LOAD	Indicates that the task stopped after full load. Cached changes may or may not have been applied.
	STOPPED_AFTER_CACHED_ EVENTS	Indicates that the task stopped after cached changes were applied.
	EXPRESS_LICENSE_LIMITS_ REACHED	The task definition includes actions that are not included with Express license privileges.
	STOPPED AFTER_DDL_APPLY	Indicates that the task stopped after DDL statements were applied.
	STOPPED_LOW_MEMORY	Indicates that the task stopped due to low memory.

Parameter Name	Value	Description
	STOPPED_LOW_DISK	Indicates that the task stopped due to low disk space.
Replication profile	UNIDIRECTIONAL	Data is replicated from a source to a target.
	BIDIRECTIONAL	Changes to the source are replicated to the target, and vice versa.
	LOG_STREAM_STAGING	Changes are captured from a single source and stored on Replicate Server for replication to one or more targets.
Source type Target type	Source and target endpoint types should be specified in the same format that they appear in the **Type** drop-down list (when adding a new endpoint in Enterprise Manager). For information on how to add an endpoint in Enterprise Manager, refer to the *Enterprise Manager Setup and User Guide*.	

Parameter Name	Value	Description
Run options	RESUME_PROCESSING	Resumes task execution from the point that it was stopped.
	RELOAD_TARGET	Re-starts the full-load replication process if the task was previously run.
	RESUME_PROCESSING_FROM_ TIMESTAMP	Starts the CDC replication task from a specific point.
	RECOVER_USING_LOCALLY_ STORED_CHECKPOINT	Recover a task using the recovery state stored locally in the task folder (located under the Data folder).
	RECOVER_USING_CHECKPOINT_ STORED_ON_TARGET	Recover a task using the CHECKPOINT value from the attrep_txn_state table (created in the target database). **Note** This option is only available if the **Store task recovery data in target database** option is enabled in the **Changes Processing Tuning** tab of the **Task Settings** dialog box.
	METADATA_ONLY_RECREATE_ALL_ TABLES	Recreates the target tables defined for full load.
	METADATA_ONLY_CREATE_ MISSING_TABLES	Creates missing target tables, including Change Tables.
Request state	SUCCESS	Connection to endpoint is valid
	FAILURE	Connection to endpoint is not valid

Parameter Name	Value	Description
Table state	Represented as enum values: » TABLE_QUEUED = 0 » TABLE_LOADING = 1 » TABLE_COMPLETED = 2 » TABLE_CHANGE_PROCESSING = 3 » TABLE_ERROR = 4	**TABLE_QUEUED** - A table awaiting loading. **TABLE_LOADING** - A table being loaded to the target. **TABLE_COMPLETED** - A table that has been loaded to the target. **TABLE_CHANGE_PROCESSING** - A table that has been loaded to the target and is being updated according to changes on the source. **TABLE_ERROR** - An error occurred while processing the table.

4   Enterprise Manager Python SDK

This chapter explains how to use the Enterprise Manager .Python SDK and the lists the available methods.

In this chapter:

- ▶ Prerequisites
- ▶ Getting Started - Login
- ▶ Authentication and Authorization
- ▶ Error Handling
- ▶ put_server_license
- ▶ get_server_details
- ▶ put_server
- ▶ put_server_acl
- ▶ get_server
- ▶ get_server_acl
- ▶ get_server_list
- ▶ delete_server
- ▶ delete_server_acl
- ▶ get_task_list
- ▶ get_task_details
- ▶ get_table_list
- ▶ get_table_statuses
- ▶ delete_task
- ▶ export_task
- ▶ import_task
- ▶ stop_task
- ▶ run_task
- ▶ get_endpoint_list
- ▶ delete_endpoint
- ▶ reconfigure_endpoint_no_wait
- ▶ export_all
- ▶ import_all
- ▶ reload_table

▶ test_endpoint

▶ delete_old_change_data

▶ set_change_data_retention_barrier

▶ get_change_data_retention_barrier

▶ Parameters

Prerequisites

General Prerequisites

Before using the Enterprise Manager Python SDK, make sure that:

» Qlik Enterprise Manager has been installed.

» The Qlik Enterprise Manager service is active.

» The relevant permissions have been granted.

Python 2.7 Prerequisites

1. Add the following files to the **Environment Variables** folder:

   » **C:\python27**

   » **C:\python27\Scripts**

2. Open a command prompt and type the following:

   ```
   pip -v
   ```

   If an error is returned, it means there is an issue with the "Environment Variables"

   If the command is successful, type the following:

   ```
   pip install enum34
   ```

Python 3.7 Prerequisites

Add the following files to **Environment Variables**:

» **..\appdata\Local\Programs\Python\Python37'**

» **..\appdata\Local\Programs\Python\Python37\Scripts**

Getting Started - Login

This section describes how to get started with the Enterprise Manager Python SDK. To help you better understand how to implement the available methods, a code sample and a readme file that describes the code are located in the ***<Enterprise Manager_ Installation_Folder>/clients/python*** folder.

To be able to use the Qlik Enterprise Manager.Python API:

1. Import the Qlik Enterprise Manager-Client by adding the following code:

   ```
   from aem_client import *
   ```

2. Create an aem_client object using the following constructors: `(self, b64_username_password, machine_name, port=443, url="https://{0}/attunityenterprisemanager", verify_certificate=True,authentication_method=AuthenticationMethod.ACTIVE_DIRECTORY|SAML):`

   » `b64_username_password`
     For authentication using Active Directory:
     You need to create a base64 encoding of "domain\\user:password":

     » `domain_username = '{0}\\{1}'.format(domain, username)`

     » `username_password_str = str.encode('{0}:{1}'.format(username, password))`

     » `b64_username_password = b64.b64encode(username_password_ str).decode('ascii')`

     For authentication using SAML:

     » The SAML assertion from an IDP. This should be a string in the following format:

       ```
       'SAMLResponse=<long_base_64_string>'
       ```

       Where `<long_base_64_string>` is the SAML assertion from a SAML IDP. This must be a URL encoded string containing the `SAMLResponse` parameter with a base64 encoded SAML assertion as its value. The string may also contain other parameters (e.g. RelayState), but these parameters are ignored.

   » `machine_name` - The machine on which Qlik Enterprise Manager is installed.

   » `port` – The Qlik Enterprise Manager server port (usually 443).

   » `url` – The URL to the Qlik Enterprise Manager server. If not set then

https://{0}/attunityenterprisemanager is used where {0} is the machine name.

» `verify_certificate` – When verify_certificate is set to **true**, there must be a valid certificate in the Qlik Enterprise Manager machine. When set to **false**, Qlik Enterprise Manager client will not validate the server certificate. The default is **true**.

Example:

```
aem_client = AemClient(b64_username_password, machine_name,
verify_certificate=False)
```

» `authentication_method` – The authentication method used by the Enterprise Manager server.

For Active Directory, specify `AuthenticationMethod.ACTIVE_DIRECTORY`

For SAML, specify `AuthenticationMethod.SAML`

The user can now use the client methods to get/set data from Qlik Enterprise Manager using the public APIs. For example:

» aem_client. get_server_list()

» aem_client. get_server_list()

» aem_client. export_task(server_name, task_name)

Authentication and Authorization

The aem_client user and password need to be the user and password that are defined in users or groups in Qlik Enterprise Manager ACLs in at least one level (e.g Qlik Enterprise Manager level, All Servers level, etc,) with at least Viewer role.

Error Handling

When a REST request fails, the HTTP response code is set to an error code. Information about the error is returned in the payload as an error response.

An error response has the following structure:

Class: AemClientException that inherits from Exception class and has the following fields:

`error_code`

`message`

This section lists the generic messages that apply to most of the API functions. Errors that are specific to a particular API function appear in the section for that API function.

Error	Message	Description
UNAUTHORIZED_ REQUEST	Unauthorized Request.	The user is not authorized to perform the requested action (e.g. deleting a task).
INVALID_ SESSION_ID	The session has expired or the session ID is not valid.	Session expired or invalid.
DESERIALIZE_ TO_TYPE	Failed to deserialize json to type {type}: {message}	Returned when the JSON format is invalid.
AEM_SERVER_ NOT_FOUND	The requested server {server} could not be found.	The requested server cannot be found.
AEM_SERVER_ NOT_ MONITORED	The requested server {server} is not monitored.	The requested server is not being monitored and thus the information is not accessible.
AEM_SERVER_ NOT_ CONNECTED	The requested server "{server}" cannot be reached at this time. Message: {message}	The desired information cannot be retrieved as the requested server is not connected.
AEM_SERVER_ LICENSE_ EXPIRED	The license for requested server {server} has expired.	The requested server license has expired.
AEM_SERVER_ INVALID_ LICENSE	The license for requested server {server} is not valid.	The requested server license is not valid.
LICENSE_NOT_ FOUND	You need to register a Replication Management license in order to use Qlik Enterprise Manager. To register or obtain a license, open the Qlik Enterprise Manager console and follow the instructions.	Replication Management license was not found. For a user who is permitted to Register Qlik Enterprise Manager license.

Error	Message	Description
LICENSE_NOT_ FOUND_ CONTACT_ADMIN	An Enterprise Manager Admin needs to register a Replication Management license before you can use the product. To obtain a license, contact your Qlik Sales Representative with the Enterprise Manager machine name (which is displayed when you open the Enterprise Manager console).	Replication Management license was not found. For a user who is NOT permitted to Register Qlik Enterprise Manager license.
LICENSE_ EVALUATION_ EXPIRED	{Module} evaluation license has expired.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_TERM_ EXPIRED	{Module} license has expired.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_ INVALID_ SIGNATURE	The {Module} license signature is invalid.	{Module} is one of the following: » Replication Management » Replication Analytics
LICENSE_HOST_ MISMATCH	The host name in the {Module} license does not match the Enterprise Manager machine name.	{Module} is one of the following: » Replication Management » Replication Analytics
AEM_MISSING_ FIELD	The "{fieldName}" field is missing from the request.	When a mandatory field is missing from the request or appears empty

put_server_license

Registers a license on a specific server via Qlik Enterprise Manager.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def put_server_license(

    self,

    payload,

    server

)
```

Parameters

Parameter	Type	Description
payload	string	The license to register on the server [stream]. This is the license that was provided by your Qlik Sales Representative. **Expected format:** Text or JSON. Currently refers to the Replicate license only.
server	string	The name of the server.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_PUT_SRV_ LIC_INNER_ERR	Failed to put license for server " {server}". Error: "{message}"	Returned if Qlik Enterprise Manager encounters an error/exception when trying to register the license on the specified server.
AEM_SRV_LIC_ INVALID_FORMAT	The license file format is corrupt.	Returned when the contents of the license file are invalid.

get_server_details

Retrieves details about the specified server.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_server_details(

        self,

        server

)
```

Parameters

Parameter	Type	Description
server	string	The specified server name in Qlik Enter-prise Manager.

Return Values

AemGetServerDetailsResp

Value	Type	Description
server_details	AemServerDetails	ReplicateServerDetails or ComposeServerDetails that are inherited from AemServerDetails
configuration		
host	string	The host name or IP address of the Rep-licate/Compose Server machine.

Value	Type	Description

platform	AemPlatform
	
	`{`
	
	`        UNKNOWN =`
	`0,`
	
	`        WINDOWS =`
	`1,`
	
	`        LINUX = 2`
	
	`}`
		The platform on which the Replicate/Compose Server machine is installed.

port	string	The port through which the Replicate/Compose Server machine is accessed.
user_name	string	The user name for connecting to the Replicate/Compose Server machine.
description	string	The server description.
last_connection	string	The date and time of the last successful sync/retrieval of tasks and messages.
license	ApiLicense	
days_to_expiration	int	The number of days left before the license expires.
expiration	string	The expiration date of the server license.
issue_date	string	When the license was issued.

Value	Type	Description

state	AemLicenseState
	
	{
	
	VALID_LICENSE = 0,
	
	INVALID_ LICENSE_ CHECKSUM = 1,
	
	EXPIRED_ LICENSE = 2,
	
	NO_LICENSE = 3,
	
	MACHINE_NOT_ LICENSED = 4,
	
	INVALID_ LICENSE = 5
	
	}
		The current license state (e.g. valid, expired, etc.).

message	string	The error message if Qlik Enterprise Manager fails to connect to the Replicate/Compose Server machine.
name	string	The name of the server in Qlik Enterprise Manager.
resource_utilization	AemServerUtilization	
attunity_cpu_ percentage	int	The sum of CPU percentage of Replicate server and all running tasks processes.

Value	Type	Description
disk_usage_mb	long	The amount of disk space that the server is currently consuming, in MB. This is the sum of disk usage for all tasks on this server.
machine_cpu_ percentage	int	The CPU percentage of the machine where Replicate is installed.
memory_mb	long	The amount of memory that the server is currently consuming, in MB. This is the sum of memory usage for all active tasks on this server, excluding stopped tasks.

state	AemServerState
	`{`
	    `NOT_`
	    `MONITORED =`
	    `0,`
	    `MONITORED =`
	    `1,`
	    `ERROR = 2`
	`}`
		The state of the server.

aem_tasks_ summary	TaskSummary	
error	int	The number of tasks that encountered a fatal error.

Value	Type	Description
recovering	int	The number of recovering tasks
running	int	The number of running tasks.
stopped	int	The number of stopped tasks.
total	int	The total number of tasks, regardless of state.
version	string	The Replicate/Compose Server version.

Notes

» The return value -1 means N/A.

» Parameters related to Disk, Memory, Qlik CPU, and Machine CPU usage are not available for Compose servers. For Compose servers, these parameters will be returned as -1.

» Parameters related to Qlik CPU and Machine CPU usage are only available for Replicate 6.2 and above. For earlier Replicate versions, these parameters will be returned as -1.

» For servers that are in an error state or not monitored, parameters related to Disk and Memory usage will be returned as -1.

Errors

Error	Message	Description
AEM_SERVER_NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.
See Error Handling.		

put_server

Adds a new Replicate/Compose Server or updates the server definition (Connection Properties) if the specified server already exists. This method can be used together with AemGetServer in order to update the connection properties of an existing server.

First call AemGetServer, then edit the returned properties as required, and finally, call AemPutServer.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def put_server(

    self,

    payload,

    server

)
```

Parameters

Parameter	Type	Description
payload	AemServer	AemReplicateServer or AemComposeServer that is inherited from AemServer
host	string	The host name or IP address of the server.
name	string	The name of the server.
description	string	The server description.
port	string	The port through which the server is accessed.
username	string	The user name to connect to the Replicate/Compose Server.
password	string	The password to connect to the Replicate/Compose Server.Note The password identifier (GUID) that is returned by GetServer is valid only for the session in which it was generated. Using it in another session (for example as input for PutServer) will result in exception.

Parameter	Type	Description
verify_ server_ certificate	bool	Set to "true" to ensure the Server certificate is trusted. As a rule, to reduce the chance of "man-in-the-middle" attacks, this option should always be set to "true". » When connecting directly to an Qlik Replicate replication server (default port 3552) with its automatically generated self-signed certificate, Qlik Enterprise Manager is able to validate the certificate without requiring any additional setup. » When connecting to a Replicate Server via the Replicate UI Server (typically using port 443) or to the Replicate replication server with a user-installed certificate, you must make sure that the SSL/TLS certificate used by the server is trusted by the Qlik Enterprise Manager machine. The same applies when connecting to a Compose Server with a user-installed certificate. You can easily verify whether the certificate is trusted by opening a Chrome browser window on the Qlik Enterprise Manager machine and connecting to Replicate. If there are no security warnings, the certificate is trusted. For information on the different ways of connecting to Qlik Replicate, see *Qlik Replicate Server Requirements* in the Qlik Enterprise Manager Help.
monitored	bool	Whether to retrieve tasks and messages from this server or not.
server	string	The name of the server.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
DESERIALIZE_ TO_TYPE	"Failed to deserialize json to type AemServer: {message}"	Returned when the JSON format is invalid format. For example, such an error will be returned if the JSON contains an unknown role.
AEM_PUT_ SERVER_INNER_ ERR	Failed to put server "{server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to PUT the server.
AEM_INVALID_ SERVER_TYPE	Server type {ServerType} for server "{ServerName}" is not valid.	Returned when the an invalid server type is specified.
AEM_NAME_URL_ MISMATCH	The name of the server in the request does not match the one that is specified in the URL.	Returned when the name of the server in the request does not match the one that is specified in the URL.
AEM_EMPTY_ HOST	The host is missing from the request.	Returned when the host is missing from the request.
AEM_EMPTY_ PORT	The port is missing from the request.	Returned when the port is missing from the request.
AEM_EMPTY_ USERNAME	The username is missing from the request.	Returned when the user name is missing from the request.
AEM_EMPTY_ PASSWORD	The password is missing from the request.	Returned when the password is missing from the request.
AEM_INVALID_ PORT	The port is invalid.	Returned when the specified port is not valid.

Error	Message	Description
AEM_INVALID_ USERNAME	The user name is invalid. User names cannot exceed 104 characters and can contain all Unicode characters except for the following characters: Forward slash (/), Left square bracket ([), Right square bracket (]), Colon (:), Semicolon (;), Vertical bar (|), Equal sign (=), Plus sign (+), Asterisk (*), Question mark (?), Left angle bracket (<), Right angle bracket (>), Double quote (\").	Returned when the specified user name is not valid.
AEM_INVALID_ DESC	The description is invalid. Descriptions cannot exceed 250 characters.	Returned when the description exceeds 250 characters.
AEM_INVALID_ HOST	The host is invalid. Hosts cannot exceed 64 characters and can only contain letters (a-z or A-Z), digits, spaces, dots (.), dashes (-), and underscores (_).	Returned when the server host name exceeds 64 characters or contains invalid characters.
AEM_INVALID_ NAME	The name of the server is invalid. Server names cannot exceed 64 characters and can only contain letters (a-z or A-Z), digits, spaces, dots (.), dashes (-), and underscores (_).	Returned when the server name exceeds 64 characters or contains invalid characters.
AEM_HOST_ PORT_ALREADY_ EXIST	Host {name/IP} and port {number} are already in use by another server.	Returned when both the server host name/IP address and the server port are already in use by another server.

put_server_acl

Puts an explicit ACL for a specific server in Qlik Enterprise Manager. The method will replace any existing explicit ACL with the ACL in the request. The request also includes a

Boolean flag for specifying whether or not the server should inherit ACLs from its ancestors (in addition to its explicitly defined ACLs).

The inherited ACLs (i.e., the ACLs of the server's ancestors) are not affected by this method.

The `AemPutServerAcl` can be used together with the `AemGetServerAcl` method in order to update an existing server's ACL. First call `AemGetServerAcl`, then edit the returned roles as required, and finally, call `AemPutServerAcl`.

Behavior when putting a partial request:

When the request body includes only some of the roles (as opposed to all four of them), only the roles specifically defined in the request body will be set on the server; roles that are missing or empty will be inherited, but only if the following are true:

» The `disable_inheritance` flag is set to "True".

» The roles that are missing/empty in the request are defined for the ancestors.

Behavior on conflicts:

If the `disable_inheritance` flag is set to "False" and the explicit roles in the request conflict with existing inherited roles, then the explicit roles will take precedence. For example, if the request defines user A as a Viewer on **MyServer** and user A is also defined as an Admin on All Servers, then user A will be defined as an Admin on All Servers but as a Viewer on **MyServer**.

> **Note** The user permissions in Enterprise Manager are completely independent of the user permissions in Replicate. Consequently, `AemPutServerAcl` will affect the server's Enterprise Manager user permissions, but will *not* affect Replicate's user permissions.
>
> Moreover, when performing an operation via Enterprise Manager, the user permissions defined for the server entity in Enterprise Manager apply, whereas when performing an operation directly via the Replicate Console, the user permissions defined in Replicate apply.

> **Note** Defining the same user/group in different roles is not allowed. However, if the same user or group is defined in different roles but with a different case (e.g. Mike vs. mike or Analysts vs. ANALYSTS), no error will be returned and the strongest role will take precedence.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def put_server_acl(

    self,

    payload,

    server

)
```

Parameters

Parameter	Type	Description
payload	AemAuthorizationAcl	
disable_inheritance	bool	If set to "true", the server does not inherit ACLs from its ancestors (in addition to its explicit ACLs). If set to "false", the server inherits ACLs from its ancestors, in addition to any explicit ACLs
admin_role	AemRoleDef	Users and/or groups assigned as Admin role
designer_role	AemRoleDef	Users and/or groups assigned as Designer role
operator_role	AemRoleDef	Users and/or groups assigned as Operator role
viewer_role	AemRoleDef	Users and/or groups assigned as Viewer role
groups	List<AemGroupRef>	Groups assigned as the role
name	string	The group name
users	List<AemUserRef>	Users assigned as the role
name	string	The user name
server	string	The name of the server

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
DESERIALIZE_ TO_TYPE	"Failed to deserialize json to type AemAuthorizationAcl: {message}"	Returned when the JSON format is invalid format. For example, such an error will be returned if the JSON contains an unknown role.
AEM_PUT_ SERVER_ACL_ INNER_ERR	Failed to put ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to put the server's ACL.
AEM_NO_ DOMAIN_IN_ USER	User "{userName}" must be preceded by a domain name, separated by a backslash. **Example:** domain_name\user_name.	Returned when the domain is missing from the user name.
AEM_NO_ DOMAIN_IN_ GROUP	Group "{groupName}" must be preceded by a domain name, separated by a backslash. **Example:** domain_name\group_name.	Returned when the domain is missing from the group name.

Error	Message	Description
AEM_NO_ADMIN_ ON_SERVER	Requested server "{serverName}" has no admin user. At least one user or group must be assigned to the "admin" role.	Returned when there is no admin on the server. Possible reasons: » The request JSON is set to `disable_ inheritance=true` and the explicit admin role in the JSON is empty. » The JSON is set to `disable_inheritance =true`, the explicit admin role in the JSON is empty, and the parent levels do not have an admin user to inherit.
AEM_USER_ ASSIGNED_TO_ MULTIPLE_ROLES	User "{userName}" is assigned to multiple roles. Users can only be assigned to a single role.	Returned when a user is assigned to multiple roles.
AEM_GROUP_ ASSIGNED_TO_ MULTIPLE_ROLES	Group "{groupName}" is assigned to multiple roles. Groups can only be assigned to a single role.	Returned when a group is assigned to multiple roles.
AEM_USER_ GROUP_ MULTIPLE_ ASSIGNED	"{userName/groupName}" is assigned to multiple roles or to the same role twice. Users/groups can only be assigned once, and to a single role.	Returned either when the specified user already exists as a group in the same/another role, or the specified group already exists as a user in the same/another role.

get_server

Retrieves the definition (Connection Properties) of the specified server. This method can be used together with PutServer in order to update the connection properties of an existing server. First call GetServer, then edit the returned properties as required, and finally, call PutServer.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_server(

    self,

    server

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server to retrieve.

Return Values

AemServer (AemReplicateServer or AemComposeServer that are inherited from AemServer)

Value	Type	Description
host	string	The host name or IP address of the server.
name	string	The name of the server.
description	string	The server description.
port	string	The port through which the server is accessed.
username	string	The user name to connect to the Replicate/Compose Server.
password	string	The password to connect to the Replicate/Compose Server.Note The password identifier (GUID) that is returned by GetServer is valid only for the session in which it was generated. Using it in another session (for example as input for PutServer) will result in exception.

Value	Type	Description
verify_server_certificate	bool	When "true", Qlik Enterprise Manager verifies that the Server certificate is trusted, thereby reducing the chance of "man-in-the-middle" attacks. For details on setting this option, see put_server.
monitored	bool	Whether to retrieve tasks and messages from this server or not.

Errors

See general errors.

get_server_acl

Retrieves the explicit ACL defined in Qlik Enterprise Manager for the specified server, including a Boolean indication if ACL inheritance is disabled or enabled for the server.

The method returns the explicit ACL only. In other words, it does not return inherited ACLs.

If all of the servers ACLs are inherited (i.e. no ACL was explicitly defined for the server), an error will be returned indicating that no ACL was found.

This method can be used together with `AemPutServerAcl` in order to update an existing server's ACL. First call `AemGetServerAcl`, then edit the returned roles as required, and finally, call `AemPutServerAcl`.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_server_acl(

    self,

    server

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server where the ACL is located.

Return Values

AemAuthorizationAcl

Value	Type	Description
disable_inheritance	bool	If set to "true", the server does not inherit ACLs from its ancestors (in addition to its explicit ACLs). If set to "false", the server inherits ACLs from its ancestors, in addition to any explicit ACLs.
admin_role	AemRoleDef	Users and/or groups assigned as Admin role.
designer_role	AemRoleDef	Users and/or groups assigned as Designer role.
operator_role	AemRoleDef	Users and/or groups assigned as Operator role.
viewer_role	AemRoleDef	Users and/or groups assigned as Viewer role.
groups	List<AemGroupRef>	Groups assigned as the role.
name	string	The group name.
users	List<AemUserRef>	Users assigned as the role.
name	string	The user name.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_GET_ SERVER_ACL_ INNER_ERR	Failed to get ACL of server " {server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to get the server ACL.
AEM_SERVER_ HAS_NO_ACL	ACL for server "{server}" could not be found.	Returned if no explicit ACL is defined for the server. **Note** A server that does not have its own explicit ACL inherits the ACL from its ancestors. Inherited ACLs are *not* returned by this method.

get_server_list

Retrieves a list of servers under Qlik Enterprise Manager management as well as each server's properties.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_server_list(
      self
)
```

Parameters

N/A

Return Values

AemGetServerListResp

Value	Type	Description
serverList	List<AemServerInfo>	ReplicateServerInfo or ComposeServerInfo that inherit from AemServerInfo.
description	string	The description of the server
host	string	The host name or IP address of the server.
last_connection	string	The date and time of the last successful sync/retrieval of tasks and messages.
message	string	The error message if Qlik Enterprise Manager fails to connect to the server.
name	string	The name of the server.

platform	AemPlatform
	
	{
	
	UNKNOWN = 0,
	WINDOWS = 1,
	LINUX = 2
	
	}
		AemPlatform

port	string	The port through which the server is accessed.

Value	Type	Description
state	AemServerState { NOT_MONITORED = 0, MONITORED = 1, ERROR = 2 }	AemServerState
version	string	The Replicate/Compose Server version

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_SERVER_ NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.

delete_server

Description

When this method is called, Qlik Enterprise Manager will:

» Delete the specified server from Qlik Enterprise Manager

» Stop monitoring any tasks that were defined on the server

» Delete all messages related to the server from the Message Center

» Delete all user roles defined for the server, the server tasks, and the server endpoints

> **Note** The above operations will be performed, regardless of whether the server is currently being monitored or in an error state.
> **Note**

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def delete_server(

    self,

    server

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server to be deleted.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Text	Description
AEM_SERVER_ NOT_FOUND	Requested server "{server}" could not be found.	The server name is unknown to Qlik Enterprise Manager.
AEM_DELETE_ SERVER_INNER_ ERR	Failed to delete requested server "{server}".	Qlik Enterprise Manager encountered an error/exception when trying to delete the server.

delete_server_acl

Deletes the explicit ACL defined in Qlik Enterprise Manager for the specified server. Inherited ACLs are not affected by this method. Once the explicit ACL is deleted from the server, all ACLs will be automatically inherited from the server's ancestors.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def delete_server_acl(
```

```
        self,

        server

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server whose ACL needs to be deleted.

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_DELETE_ SERVER_ACL_ INNER_ERR	Failed to delete ACL of server "{server}". Error: "{message}".	Returned if Qlik Enterprise Manager encounters an error/exception when trying to delete the server's ACL.
AEM_SERVER_ HAS_NO_ACL	ACL for server "{server}" could not be found.	Returned when the specified server has no explicit ACL defined.

get_task_list

Retrieve a list of tasks per selected and authorized server. For each task, the API returns a few values.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_task_list(

        self,
```

```
    server
)
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the tasks reside.

Return Values

AemGetTaskListResp

Value	Type	Description
taskList	List<AemTaskInfo>	An array of Endpoint objects.
name	string	The name of the task

state	AemTaskState
	
	{
	
	    STOPPED = 0,
	
	    RUNNING = 1,
	
	    ERROR = 2,
	
	    RECOVERY = 3
	
	}	

Value	Type	Description

stop_reason	AemTaskStopReason {
	
	NONE = 0,
	
	NORMAL = 1,
	
	RECOVERABLE_ ERROR = 2,
	
	FATAL_ERROR = 3,
	
	FULL_LOAD_ ONLY_FINISHED = 4,
	
	STOPPED_ AFTER_FULL_ LOAD = 5,
	
	STOPPED_ AFTER_CACHED_ EVENTS = 6,
	
	EXPRESS_ LICENSE_ LIMITS_ REACHED = 7,
	
	STOPPED_ AFTER_DDL_ APPLY = 8,
	
	STOPPED_LOW_ MEMORY = 9,
	
	STOPPED_LOW_ DISK_SPACE = 10
	
	}
		The reason the task stopped. For Compose tasks, this will always be NONE.

message	string	The message if the task stopped due to an error.

Value	Type	Description
assigned_tags	array	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

Errors

See general errors.

get_task_details

Retrieves details about a selected and authorized task. The API returns full monitoring information related to the selected task.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_task_details(

    self,

    server,

    task

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server.
task	string	The name of the task.

Return Values for Replicate Tasks

AemGetTaskDetailsResp

Value	Type	Description
task	AemTaskInfoDetailed	
type	string	AemTaskInfoDetailed
name	string	The task name.
description	string	The task description. If there is no description, an empty string will be returned.
cdc_event_counters	AemTaskCdcEventCounters	All numeric data concerning CDC events
applied_ddl_count	long	The total number of metadata changes, such as add column
applied_delete_count	long	The number of records deleted in total for all tables
applied_insert_count	long	The number of records added in total for all tables
applied_update_count	long	The number of records updated in total for all tables
cdc_latency	AemCdcLatency	CDC latency information
source_latency	string	The time gap between the original change in the source endpoint and capturing it, in hh:mm:ss
total_latency	string	The overall latency (source latency + target latency + apply latency), in hh:mm:ss

Value	Type	Description
cdc_throughput	AemCdcThroughput	Indicates how fast the table records are being replicated to the target endpoint (by number or volume of records). Refers only to the current/last CDC.
source_throughput_records_ count	AemCdcThroughputItem	The current source throughput, in rec/sec
source_throughput_volume	AemCdcThroughputItem	The current source throughput, in kbyte/sec
target_throughput_records_ count	AemCdcThroughputItem	The current target throughput, in rec/sec
target_throughput_volume	AemCdcThroughputItem	The current target throughput, in kbyte/sec
current	long	
cdc_transactions_counters	AemCdcTransactionsCounters	All numeric data concerning CDC transactions
applied_comitted_ transaction_count	long	The number of transactions committed.
applied_records_comitted_ count	long	The sum of all records/events in all Completed transactions
applied_records_in_ progress_count	long	The sum of all records/events in all In-Progress transactions
applied_transactions_in_ progress_count	long	The number of transactions in progress.
applied_volume_comitted_ mb	long	The sum of all volume/events in all Completed transactions, in MB.

Value	Type	Description
commit_change_records_ count	long	The number of COMMIT change records.
incoming_accumulated_ changes_on_disk_count	long	The number of changes accumulated on disk until source commit
incoming_accumulated_ changes_in_memory_count	long	The number of changes accumulated in memory until source commit.
incoming_applying_changes_ in_memory_count	long	The number of changes in memory during apply and until target commit.
incoming_applying_changes_ on_disk_count	long	The number of changes on disk during apply and until target commit.
rollback_change_records_ count	long	The number of ROLLBACK change records.
rollback_change_volume_mb	long	The volume of ROLLBACK changes, in MB.
rollback_transaction_count	long	The number of changes in memory during apply and until target commit.
full_load_completed	bool	
full_load_counters	AemTaskFullLoadCounters	All numeric data concerning Full Load events.
estimated_records_for_all_ tables_count	long	The estimated number of records remaining to be loaded into the target endpoint.

Value	Type	Description
records_completed_count	long	The total number of records that have completed loading into the target endpoint.
tables_completed_count	int	The number of tables that have been loaded into the target endpoint.
tables_loading_count	int	The number of tables that are currently being loaded into the target endpoint.
tables_queued_count	int	The number of tables that are waiting to be loaded due to an error.
tables_with_error_count	int	The number of tables that could not be loaded due to an error.
full_load_end	string	Indicates whether the full load process has ended.
full_load_start	string	The start time of the full load process. Format: YYY MM DD Timezone: UTC
full_load_throughput	AemFullLoadThroughput	
source_throughput_records_count	int	The current source throughput, in rec/sec.
source_throughput_volume	int	The current source throughput, in kbyte/sec.
target_throughput_records_count	int	The current target throughput, in rec/sec.

Value	Type	Description
target_throughput_volume	int	The current target throughput, in kbyte/sec.
memory_mb	long	The current utilization of memory, in MB. A task's memory utilization is sampled every 10 seconds. When the task is not running, the value is set to zero (0).
cpu_percentage		The current CPU usage of the Replicate task process. **Notes** Only available for Replicate tasks running on Replicate 6.2 and above. When not available, this parameter will be returned as -1.
disk_usage_mb	long	The current utilization of disk space, in MB. A task's disk utilization is sampled every minute.
data_error_count	long	The total number of data errors in all tables involved in the task. The count is affected by data errors and the **Reset Data Errors** option available when you drill down to a task.

Value	Type	Description
options	AemCommonSettings	
apply_changes_enabled	bool	See Task Options.
audit_changes_enabled	bool	See Task Options.
full_load_enabled	bool	See Task Options.
store_changes_enabled	bool	See Task Options.

replicate_profile	AemReplicateTaskProfile
	
	{
	
	    UNIDIRECTIONAL = 1,
	
	    BIDIRECTIONAL = 2
	
	    LOGSTREAM = 3
	
	}
		AemReplicateTaskProfile

source_endpoint	TaskEndpoint	
name	string	The name of the source endpoint.
type	string	The source endpoint type.
target_endpoint	TaskEndpoint	
name	string	The name of the target endpoint.
type	string	The target endpoint type.

state	AemTaskState
	
	{
	
	        STOPPED = 0,
	
	        RUNNING = 1,
	
	        ERROR = 2,
	
	        RECOVERY = 3
	
	}
		The current state of the task.

Value	Type	Description

task_stop_reason	AemTaskStopReason
	
	{
	
	NONE = 0,
	
	NORMAL = 1,
	
	RECOVERABLE_ERROR = 2,
	
	FATAL_ERROR = 3,
	
	FULL_LOAD_ONLY_
	FINISHED = 4,
	
	STOPPED_AFTER_FULL_
	LOAD = 5,
	
	STOPPED_AFTER_
	CACHED_EVENTS = 6,
	
	EXPRESS_LICENSE_
	LIMITS_REACHED = 7,
	
	STOPPED_AFTER_DDL_
	APPLY = 8,
	
	STOPPED_LOW_MEMORY
	= 9,
	
	STOPPED_LOW_DISK_
	SPACE = 10
	
	}
		The reason the task stopped.

log_stream_staging	string	If the task is writing to/reading from the Log Stream staging folder, the name of the associated Log Stream Staging task will be returned. Otherwise, an empty string will be returned.

Value	Type	Description
assigned_tags	array	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.
message	string	The message if the task stopped due to an error.

Return Values for Compose Tasks

AemGetTaskDetailsResp

Name	Type	Description
type	string	The task type: AemComposeTaskInfoDetailed
project	string	The name of the Compose project
name	string	The name of the task
description	string	The task description. If there is no description, an empty string will be returned.
state	string	The current task state
message	string	The message shown in the event that the task ends with an error.
options	AemCommonSettings	
full_load_enabled	bool	Indicates whether the Full Load option is enabled. Can be "true" or "false"
apply_changes_ enabled	bool	Indicates whether the Change Processing option is enabled. Can be "true" or "false"
source_endpoint	TaskEndpoint	

Name	Type	Description
name	string	The logical name of the landing database.
type	string	The landing database type.
target_endpoint	TaskEndpoint	
name	string	The logical name of the storage database.
type	string	The storage database type.
loading_completed	bool	Indicates whether the loading process has completed. Can be "true" or "false"
loading_start	string	The start time of the loading process Format: YYY MM DD Timezone: UTC
loading_end	string	The end time of the loading process Format: YYY MM DD Timezone: UTC
loading_counters	AemTaskFullLoadCounters	
tables_total_count	int	The total number of tables.
tables_completed_ count	int	The number of tables that have been loaded into the target endpoint
tables_loading count	int	The number of tables that are currently being loaded into the target endpoint
tables_queued_count	int	The number of tables that are waiting to be loaded due to an error

Name	Type	Description
tables_with_error_ count	int	The number of tables that could not be loaded due to an error
commands_total_ count	int	The total number of commands executed
commands_ completed_count	int	The total number of commands completed
assigned_tags	array	Returns the custom tags assigned to the task. If no tags are assigned to the task, an empty array will be returned.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_TASK_NOT_FOUND	Replication task {task} on server {server} could not be found.	The task name is unknown to Qlik Enterprise Manager.

get_table_list

Retrieves the list of tables of a specific Replicate task that match the specified state(s), table schema(s), and table name(s). This is useful for automation processes, for example, as it allows you to retrieve tables in a certain state (e.g. suspended) and then peform an operation on them (e.g. ReloadTable).

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_table_list(

    self,

    server,

    task,

    schema = None,

    table = None,

    includequeued = False,

    includeloading = False,

    includecompleted = False,

    includechangeprocessing = False,

    includeerror = False):
""" response payload: AemGetTableListResp
```

Parameters

Value	Type	Description
server	string	The Replicate Server name as defined on Qlik Enterprise Manager. **Example:** myrepsrv1
schema	string	The default is all source schemas. Specifying a specific schema name will retrieve all tables from the specified schema. Specifying a pattern or letters included in the schema name will retrieve all tables from schemas that match the pattern or that include the specified letters. For example, specifing "ad" will retrieve tables from the "**ad**venture" and "tr**ad**emark" schemas.
table	string	The default is all source tables. Specifying a specific table name will retrieve the specified table. Specifying a pattern or letters included in the table name will retrieve all tables that match the pattern or that include the specified letters. For example, specifing "em" will retrieve the "**em**ployees" and "t**em**p" tables.
includequeued	boolean	Whether to retrieve tables in a queued state. Default is false.
includeloading	boolean	Whether to retrieve tables in a loading state. Default is false.
includecompleted	boolean	Whether to retrieve tables in a completed state. Default is false.

Value	Type	Description
includechangeprocessing	boolean	Whether to retrieve tables in a Change Processing state (i.e. that are having changes applied to them). Default is false.
includeerror	boolean	Whether to retrieve tables in an error state. Default is false.

Return Values

AemGetTableListResp

Value	Type	Description
TableList	List	List of tables that match the specified input parameters.
schema	string	The name of the schema.
table	string	The name of the table.
state	enum	The current state of the table.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_TABLE_ LIST_INNER_ ERR	Failed to retrieve table list for replication task "{task}" on server "{server}". Error: " {message}"	Returned when the table list cannot be retrieved.
AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.

get_table_statuses

Retrieves the tables statuses of a specific Replicate task for all tables that match the specified state(s), table schema(s), and table name(s). This is useful for automation processes, for example, as it allows you to retrieve tables in a certain state (e.g. suspended) and then peform an operation on them (e.g. ReloadTable).

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_table_statuses(

    self,

    server,

    task,

    schema = None,

    table = None,

    includequeued = False,

    includeloading = False,

    includecompleted = False,

    includechangeprocessing = False,

    includeerror = False):

    """

response payload: AemGetTableStatusesResp
```

Request Parameters

Value	Type	Description
server	string	The Replicate Server name as defined on Qlik Enterprise Manager. **Example:** myrepsrv1
task	string	The Replicate task name.
schema	string	The default is all source schemas. Specifying a specific schema name will retrieve all tables from the specified schema. Specifying a pattern or letters included in the schema name will retrieve all tables from schemas that match the pattern or that include the specified letters. For example, specifing "ad" will retrieve tables from the "**ad**venture" and "tr**ad**emark" schemas.
table	string	The default is all source tables. Specifying a specific table name will retrieve the specified table. Specifying a pattern or letters included in the table name will retrieve all tables that match the pattern or that include the specified letters. For example, specifing "em" will retrieve the "**em**ployees" and "t**em**p" tables.
includequeued	boolean	Whether to retrieve tables in a queued state. Default is false.
includeloading	boolean	Whether to retrieve tables in a loading state. Default is false.
includecompleted	boolean	Whether to retrieve tables in a completed state. Default is false.

Value	Type	Description
includechangeProcessing	boolean	Whether to retrieve tables in a Change Processing state (i.e. that are having changes applied to them). Default is false.
includeerror	boolean	Whether to retrieve tables in an error state. Default is false.

Return Values

AemGetTableStatusesResp

Name	Type	Description
TableDetails	List	List of table statuses that match the specified request parameters.
schema_on_ source	string	Source schema name.
table_on_ source	string	Source table name.
schema_on_ target	string	Target schema name. If this information not available, an empty string will be returned.
table_on_ target	string	Target table name. If this information not available, an empty string will be returned.
state	enum	An enum reflecting the table state. See Table state.
data_ errors_ count	int64	The number of data errors encountered when replicating the table.
table_full_ load_info		
start_time	string	Date-time of when the table full load started. Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).

Name	Type	Description
end_time	string	Date-time of when the table full load started. Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).
estimated_ row_count	int64	Relevant only if table in certain states (loading/queued).
estimated_ end_time	string	Relevant only if table in certain states (loading/queued). Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).
transferred_ row_count	int64	The number of rows transferred to the target, after the source filtering, but before the target filtering.
transferred_ volume_mb	int64	The amount of bytes transferred to the target, after the source filtering, but before the target filtering.
End of table_ full_load_info		
table_cdc_ info		
insert_count	int64	The number of records inserted to the target table.
update_ count	int64	The number of records updated in the target table.
delete_ count	int64	The number of records deleted in the target table.
ddl_count	int64	The number of DDL operations performed on the target table.
last_ update_time	string	The last time that the table was updated on target. Timezone: UTC ; Style: ISO8601 (consistent with AemGetTaskDetails).
cached_ insert_count	int64	INSERT operations that were cached during Full Load.
cached_ update_ count	int64	UPDATE operations that were cached during Full Load.

Name	Type	Description
cached_ delete_ count	int64	DELETE operations that were cached during Full Load.
End of table_ cdc_info		

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_SERVER_ NOT_FOUND	Replicate server {server} could not be found.	Server name unknown to Qlik Enterprise Manager.
AEM_TASK_ NOT_FOUND	Replicate task {task} on server {server} could not be found.	The task name is unknown to Enterprise Manager.
AEM_TABLE_ STATUSES_ INNER_ERR	Failed to retrieve table statuses for replication task "{task}" on server " {server}". Error: "{message}"	Returned when the table statuses cannot be retrieved.

delete_task

Deletes the specified task. The task's logs will be deleted only if `deletetasklogs=true` is specified in the URL.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def delete_task(

     self,

     server,

     task,

     deletetasklogs = False

)
```

Parameters

Parameter	Type	Description
server	string	The server where the task is defined.
task	string	The task to be deleted.
deletetasklogs	bool	Whether to delete the task logs or not.

Return Values

N/A

Errors

Error	Message	Description
AEM_TASK_NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned if the task name is unknown to Qlik Enterprise Manager.
AEM_DELETE_TASK_INNER_ERR	Replication task {task] on server {server} could not be deleted due to an error.	Returned if Enterprise Manager encounters an error/exception when trying to delete the task.
AEM_DELETE_TASK_ERR	Replication task {task] on server {server} could not be deleted due to an error. {2}	Returned if Enterprise Manager encounters an error when trying to delete the task.
AEM_TASK_NOT_STOPPED	Replication task {task] on server {server} must be stopped before it can be deleted.	Returned if the replication task was running when `AemDeleteTask` attempted to delete it.

export_task

Export definitions from the selected task on the selected server. The definitions always include task settings, tables/table patterns (include/exclude), table settings and global transformations. The endpoint definition is only exported along with the task definition if with endpoints=true is set.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def export_task(

    self,

    server,

    task,

    withendpoints = False
```

)

Parameters

Parameter	Type	Description
server	string	The name of the server on which the task is defined.
task	string	The task to be exported.
withendpoints	bool	Whether or not to export the endpoint definitions as well.

Return Values

Exported task JSON file as a string.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_METHOD_ NOT_ SUPPORTED_ VERSION	AemExportTask is only supported on Replicate 5.5 or above.	AemExportTask is only supported on Replicate 5.5 or above.
AEM_EXPORT_ TASK_NO_ PERMISSION_ ON_ENDPOINT	Failed to export task {task} from Replicate server {server} as the logged in user does not have permission to access one or both of the task's endpoints.	Export all cannot be carried out because the user does not have permissions on one or more endpoints.

import_task

Import a single task's JSON definitions provided in the request body into the requested server repository on the selected server.

The ImportTask method enables importing all valid JSON definitions provided in the request body.

This includes task settings, tables/table patterns (include/exclude), table settings and global transformations.

Information about endpoints is included if it was included in the JSON file.

When you import a task, Items that existed in the target server before the import and have no new JSON definition in the request body are not modified and not removed. This means that ImportTask provides no way of removing old definitions that are no longer needed.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def import_task(

    self,

    payload,

    server,

    task

)
```

Parameters

Parameter	Type	Description
payload	string	A JSON document to import
server	string	The name of the server to import to.
task	string	Name of the task to import

Return Values

N/A

Errors

Error	Message	Description
AEM_ IMPORT_ TASK_NO_ PERMISSION_ ON_ ENDPOINT	Failed to import task {task} to replication server {server} as the logged in user does not have permission to add or modify endpoints.	The task cannot be imported because it includes endpoint definitions, and the user does not have permissions to insert endpoints.
AEM_ IMPORT_ TASK_ CONTAIN_ ALIEN_ITEMS	Failed to import task {task} to replication server {server} as the JSON file contains unsupported objects.	The task cannot be imported because the stream contains items that cannot be imported (such as remote machines).
AEM_ IMPORT_ TASK_NAME_ DIFFER	Failed to import task {task} to replication server {server} as the JSON file contains conflicting tasks.	The task cannot be imported because the stream contains conflicting tasks.
AEM_ IMPORT_ TASK_ CONTAINS_ MULTIPLE_ TASKS	Failed to import task to replication server {server} as the JSON file contains multiple tasks. To import multiple tasks, use AemImportAll instead.	The task cannot be imported since the stream contains multiple tasks, and the method can only import a single task.
AEM_TASK_ NOT_ IMPORTABLE	Failed to import task {task} as the task is running on server {server}. Stop the task and then try again.	Occurs when trying to import a running task.
AEM_ IMPORT_ TASK_ CONTENT_ EMPTY	Failed to import task {task} to replication server {server} as the JSON file is empty.	The task cannot be imported as the specified JSON file is empty.
AEM_ IMPORT_ TASK_ ENDPOINT_ DIFFER	Failed to import task {task} to server {server} as the endpoint names in the JSON file's "task" and "databases" sections are not the same.	The task cannot be imported as the endpoint names in the specified JSON file's "task" and "databases" sections are different.

Error	Message	Description
AEM_ IMPORT_ TASK_NO_ ENDPOINT_ IN_SERVER	Failed to import task {task} to replication server {server} as the {role} endpoint {endpoint} does not exist on the target server.	The task cannot be imported as one of the endpoints specified in the exported JSON file does not exist on the target server.

stop_task

Stops the selected task.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def stop_task(
      self,
      server,
      task,
      int timeout = 30
)
```

Parameters

Parameter	Type	Description
server	string	The name of the server.
task	string	The name of the task.
timeout	int	Time in seconds to wait until getting a response.

Return Values

AemStopTaskResp

Value	Type	Description

state	AemTaskState
	
	{
	
	STOPPED
	= 0,
	
	RUNNING
	= 1,
	
	ERROR =
	2,
	
	RECOVERY
	= 3
	
	}
		The current state of the task.

error_message	string	The description of the error

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_TASK_ ALREADY_ STOPPED	Replicate task {task} on server {server} is already stopped.	Cannot stop a task that is in Stopped state.
AEM_STOP_ TASK_INNER_ ERR	Failed to stop Replicate task {0} on server {1}: <{2}>	An error occurred while trying to stop the task.
AEM_STOP_ TASK_TIMEOUT	A timeout occurred when trying to stop Replicate task {0} on server {1}	A timeout occurred while trying to stop the task.

run_task

Run the selected task according to the specified option.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def run_task(
     self,
```

```
        payload,

        server,

        task,

        option = AemRunTaskOptions.RESUME_PROCESSING,

        timeout = 30

)
```

Parameters

Parameter	Type	Description
payload	AemRunTaskReq	
cdc_position	string	The `cdcposition` parameter can either be specified inline or in an external JSON file. The format for both is described in below. Mandatory for all AemRunTask options.
server	string	The name of the server on which to run the task.
task	string	The name of the task to run.

Parameter	Type	Description

option	AemRunTaskOptions
	
	`{`
	
	`    NONE = 0,`
	`    RESUME_`
	`    PROCESSING`
	`    = 1,`
	
	`    RELOAD_`
	`    TARGET = 2,`
	
	`    RESUME_`
	`    PROCESSING_`
	`    FROM_`
	`    TIMESTAMP =`
	`    3,`
	
	`    METADATA_`
	`    ONLY_`
	`    RECREATE_`
	`    ALL_TABLES`
	`    = 4,`
	
	`    METADATA_`
	`    ONLY_`
	`    CREATE_`
	`    MISSING_`
	`    TABLES = 5,`
	
	`    RECOVER_`
	`    USING_`
	`    LOCALLY_`
	`    STORED_`
	`    CHECKPOINT`
	`    = 6,`
	
	`    RECOVER_`
	`    USING_`
	`    CHECKPOINT_`
	`    STORED_ON_`
	`    TARGET = 7`
	
	`}`
		For replication tasks, any of the options (except NONE) can be specified. For Compose tasks, only NONE can be specified.

Parameter	Type	Description
timeout	int	The time in seconds to wait for a response.

Return Value

AemRunTaskResp

Value	Type	Description
error_message	string	The description of the error.

state	AemTaskState
	
	{
	STOPPED = 0,
	RUNNING = 1,
	ERROR = 2,
	RECOVERY = 3
	}
		The current state of the task.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_TASK_ ALREADY_ RUNNING	Replicate task {task} on server {server} is already running.	The task cannot be run because it is already running.
AEM_TASK_ IN_RECOVERY	Replicate task {task} on server {server} cannot be run as it is in a recovery state.	The task cannot be run because it is in Recovery state.

Error	Message	Description
AEM_ WRONG_ OPTION_FOR_ CDCPOSITION	Replicate task {task] on server {server} cannot be run with cdcposition {position} and option {option}. Change the option to RESUME_ PROCESSING_FROM_ TIMESTAMP or RECOVER_ USING_CHECKPOINT_STORED_ ON_TARGET.	When the option **Tables are already loaded. Start processing changes from Timestamp** is selected in the **Advanced Run Options** dialog box for a task, the option sent to the API must be `RESUME_ PROCESSING_FROM_TIMESTAMP`.
AEM_CDC_ POSITION_ ERR_FORMAT	The cdcposition parameter value for Replicate task {task} on server {server} is not in the correct format ('YYYY-MM-DDThh:mm:ssZ').	The cdcPosition parameter must follow this format: YYYY-MM-DDThh:mm:ssZ Parameters: task name and server name
AEM_RUN_ TASK_ TIMEOUT	Replicate task {task} on server {server} timed out when requested to "Run".	The task does not assume a Running state or any other steady state (error o stopped).
AEM_RUN_ TASK_INNER_ ERR	Replicate task {task} on server {server} encountered an error when requested to run.	Replicate experienced an error/exception when trying to run the task.
AEM_RUN_ TASK_NO_ SRC_NO_TRG	Replicate task {task} on server {server} has no source or target endpoints.	Task validation revealed that the task is missing a source and a target.
AEM_RUN_ TASK_NO_ SRC	Replicate task {task} on server {server} has no source endpoint.	Task validation revealed that the task is missing a source.
AEM_RUN_ TASK_TRG	Replicate task {task} on server {server} has no target endpoint.	Task validation revealed that the task is missing a target
AEM_RUN_ TASK_NOT_ FL_NOR_CDC	Replicate task {task} on server {server} cannot be run without at least one of the replication options enabled (Full Load, Apply Changes, or Store Changes).	Task validation of a unidirectional task revealed that the replication option definition for the task is missing (Full Load, Apply Changes, or Store Changes).

Error	Message	Description
AEM_RUN_ BIDI_TASK_ NO_FL_NOR_ CDC	Replicate task {task} on server {server} cannot be run without at least one of the replication options enabled (Full Load or Apply Changes).	Task validation of a unidirectional task revealed that the replication option definition for the task is missing (Full Load, Apply Changes, or Store Changes).

get_endpoint_list

Retrieves a list of endpoints and their properties for the specified server.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_endpoint_list(

    self,

    server

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the endpoints are defined.

Return Values

AemGetEndpointListResp

Value	Type	Description
endpointList	List<Endpoint>	An array of Endpoint objects.
description	string	The endpoint description
isLicensed	bool	Indicates whether the endpoint is licensed on this server.
name	string	The endpoint name.

Value	Type	Description

role	EndpointRole
	
	{
	
	    ALL = 0,
	    SOURCE = 1,
	    TARGET = 2,
	    BOTH = 3
	
	}
		The endpoint role: SOURCE or TARGET.

type	string	The endpoint type - for example, Oracle.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_ ENDPOINT_ LIST_INNER_ ERR	Failed to retrieve endpoints list from Replicate server {name}.	Replicate experienced an error/exception when trying to retrieve the endpoint list.

delete_endpoint

Description

Deletes the specified endpoint. Note that an endpoint can only be deleted if it is not in use by any task.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def delete_endpoint(

    self,

    server,

    endpoint

)
```

Parameters

Parameter	Type	Description
server	string	The server where the endpoint is defined.
endpoint	string	The name of the endpoint to be deleted.

Return Values

N/A

Errors

Error	Message	Description
AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint {endpoint} on server {server} could not be found.	Endpoint name unknown to Qlik Enterprise Manager.
AEM_DELETE_ ENDPOINT_ INNER_ERR	Failed to delete Replicate endpoint {endpoint} from server {server}.	Replicate encountered an error/exception when trying to delete the endpoint.
AEM_ENDPOINT_ IS_IN_USE	Replicate endpoint {endpoint} on server {server} cannot be deleted as it is currently in use by one or more tasks.	The Replicate endpoint must be removed from its associated tasks before it can be deleted.

reconfigure_endpoint_no_wait

Call this method to override the source endpoint settings with settings from another endpoint *of the same type.* This method also supports automatically stopping and then resuming all tasks that are using the source endpoint (which is required for unplanned switchovers).

> **Notes**
>
> » Supported with the Oracle source endpoint only.
>
> » Using this method, requires you to set up relevant Qlik Replicate task(s) with *three* separate source endpoints - two *inactive* source endpoints defined with the primary and secondary database connection settings, and one active source endpoint (initially defined with the primary database connection settings).
>
> For detailed instructions, see Reconfiguring Endpoints

Required User Role

» See Required Enterprise Manager Permissions.

Syntax

```
def reconfigure_endpoint_no_wait(

    self,

    server,

    endpoint,

    configuration = None,

    recycle = True

)
```

Parameters

Parameter	Type	Description
server	string	The name of the Replicate server (as defined in Qlik Enterprise Manager) on which the task(s) are running.

Parameter	Type	Description
endpoint	string	The name of the source endpoint defined for the Replicate task(s).
configuration	string	The name of the secondary endpoint (or the primary endpoint when reverting the settings).
recycle	bool	Whether to stop and resume the Replicate task(s) automatically. The default is "true" i.e. when an unanticipated switchover occurs, tasks using the source endpoint will be automatically stopped and then resumed after the source endpoint is updated with the settings from the secondary endpoint. Set to "false" for planned switchovers (such as migrating to a production database or switching back to the primary database).

Return Values

N/A

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint "{endpoint}" on server "{server}" could not be found.	The specified endpoint could not be found.
AEM_ RECONFIGURE_ ENDPOINT_ INNER_ERR	Failed to reconfigure endpoint " {endpoint}" on server "{server}". Error: "{message}"	Qlik Enterprise Manager failed to reconfigure the endpoint with the settings of the failover endpoint.

export_all

Export all definitions from the requested server repository on the selected server (server settings, tasks, endpoints, and so on). The definitions are exported to a JSON file.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def export_all(

        self,

        server

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server containing the repository to be exported.

Return Values

Export JSON file as a string.

Errors

Error	Message	Description
AEM_METHOD_ NOT_ SUPPORTED_ VERSION	AemExportAll is only supported on Replicate 5.5 or above.	The method requires Replicate 5.5 or above.
AEM_EXPORT_ NO_ PERMISSION_ ON_TASK	Failed to export all tasks from Replicate server {server} as the logged in user does not have permission to export one or more of the defined tasks.	Export all cannot be carried out because the user does not have permissions on one or more tasks.

Error	Message	Description
AEM_EXPORT_ NO_ PERMISSION_ ON_ENDPOINT	Failed to export all tasks from server {server} as the logged in user does not have permission to export one or more of the defined endpoints.	Export all cannot be carried out because the user does not have permissions on one or more endpoints.

import_all

Import the JSON definitions provided in the request body into the requested server repository on the selected server. The ApiImportAll method uses "merge" semantics. In particular: All valid JSON definitions provided in the request body will be imported.

This includes server settings, task settings, endpoints, and other definitions.

Items that existed in the target server before the import and have no new JSON definition in the request body will not be modified and in particular will not be removed. This means that ApiImportAll provides no way of removing old definitions that are no longer needed.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def import_all(

    self,

    payload,

    server

)
```

Parameters

Parameter	Type	Description
payload	string	A JSON document to import
server	string	The name of the server to import to.

Return Values

N/A

Errors

Error	Message	Description
AEM_METHOD_ NOT_ SUPPORTED_ VERSION	AemImportAll is only supported on Replicate 5.2 or above.	The method requires Replicate 5.2 or above.
AEM_IMPORT_ NO_ PERMISSION_ ON_TASK	Failed to import all tasks to replication server {server} as the logged in user does not have permission to add tasks.	Stream cannot be imported because the user does not have the permissions to add tasks.
AEM_IMPORT_ NO_ PERMISSION_ ON_ENDPOINT	Failed to import all tasks to replication server {server} as the logged in user does not have permission to add endpoints.	Stream cannot be imported because the user does not have the permissions to add endpoints
AEM_IMPORT_ CONTENT_ EMPTY	Failed to import all tasks to replication server {server} as the JSON file is empty.	Stream cannot be imported because it contains no content.
AEM_IMPORT_ INVALID_ CONTENT	Failed to import all tasks to replication server {server} as the JSON file contains invalid content.	Stream cannot be imported because it contains invalid content.

reload_table

Reload a specific table.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def reload_table(

    self,

    server,

    task,

    schema = None,

    table = None

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server
task	string	The name of the task
schema	string	The name of the table schema to reload
table	string	The name of the table to reload

Return Values

N/A

Errors

Error	Message	Description
AEM_ INVALID_ TASK_NOT_ FL	Failed to reload table {table} as Full Load is not enabled for task {task}.	The table could not be reloaded because the task's Full Load replication option is not enabled.
AEM_ INVALID_ TASK_NT_ NTSUPPEP	Failed to reload table as this operation is not supported with the File Channel source endpoint.	The table could not be reloaded because the task's source endpoint is File Channel.
AEM_ RELOAD_ TABLE_ERR	Failed to reload table {schema}. {table} for Replication task {task} on server {server}: {message}	An error was encountered while trying to reload the specified table.

test_endpoint

Connect to an endpoint to test connectivity and configuration (permissions, CDC configuration. etc.).

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def test_endpoint(
```

```
    self,

    server,

    endpoint,

    timeout = 60

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the endpoint is defined.
endpoint	string	The name of the endpoint.
timeout	int	Time in seconds to wait until getting a response.

Return Values

AemTestEndpointResp

Value	Type	Description

status	AemEndpointState
	
	{
	UNKNOWN = 0,
	
	CONNECTED = 1,
	
	ERROR = 2
	
	}	

message	string	Short description of the error.
detailed_message	string	Detailed description of the error.

Errors

All of the general errors as well as the errors listed in the table below.

Error	Message	Description
AEM_TEST_ ENDPOINT_ CONNECTION_ TIMEOUT	A timeout occurred while testing the connection for endpoint {endpoint} on Replicate server {server}.	Connection was not established within 60 seconds.
AEM_ENDPOINT_ NOT_FOUND	Replicate endpoint {0} on server {1} could not be found.	The specified endpoint could not be found.

delete_old_change_data

The method can be called on an ad-hoc basis to delete processed Change Data Partitions created on the target database by a Replicate task.

» Partitions will only be deleted if the Change Data Partitioning and Partition Retention options are enabled in the Replicate console.

For more information, refer to the *Qlik Replicate Setup and User Guide*.

» Partitions will only be deleted if the task is running. If the task is not running, the partitions will be deleted the next time the task runs.

» If a retention barrier is set, partitions will only be deleted up to the retention barrier or the earliest of all retention barriers (when set by multiple applications). For example, if Application A sets July 7th, 2020 as a barrier, Application B sets August 7th, 2020 as a barrier, and Application C sets September 7th, 2020 as a barrier, partitions will be deleted up to July 7th, 2020.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def delete_old_change_data(

    self,

    payload,

    server,

    task

)
```

Parameters

Parameter	Type	Description
payload	AemDeleteOldChangeDataReq	**Payload Parameter for Deleting Old Change Data Partitions:** **Name:** `timestamp_or_offset` **Type:** `string` The point in time after which partitions can be deleted. The parameter can either be specified as a timestamp or as an offset. If a retention barrier is set, partitions will be deleted up to the retention barrier date. If the specified timestamp/offset is earlier than the retention barrier, an error will be returned. **Timestamp Format:** [Date] (yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z') **Example:** 2020-06-30T16:15:00Z **Offset Format :** [Period] Format ISO 8601 duration **Example:** P1M3DT1H2M
server	string	The name of the server on which the task is running.
task	string	The name of the task.

Error Response

Error	Message	Description
AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
AEM_INVALID_ TIMESTAMP_ OR_OFFSET_ FORMAT	The specified deletion age does not conform to the expected timestamp or offset format. Timestamp format should be yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'. Offset format should conform to ISO 8601 duration.	Returned when the specified deletion age does not conform to the expected timestamp or offset format.
AEM_DELETE_ OLD_CHANGE_ DATA_INNER_ ERR	Failed to request deletion of old change data for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered during partition deletion.

set_change_data_retention_barrier

The method can be used to:

» Set a retention barrier for deleting consumed partitions. Setting a retention barrier will initiate periodic deletion of consumed Change Data Partitions from the target database defined for the specified task. Partitions will be deleted according to the **When deletion is initiated by a consuming application, delete partitions every** interval set on Replicate Server, and only up to the retention barrier or the earliest of all retention barriers (when set by multiple applications). For example, if Application A sets July 7th, 2020 as a barrier, Application B sets August 7th, 2020 as a barrier, and Application C sets September 7th, 2020 as a barrier, partitions will be deleted up to July 7th, 2020.

» Remove the retention barrier. Note that if there are multiple consuming applications, periodic deletion of consumed Change Data Partitions will only stop after *all* retention barriers have been removed.

» Partitions will only be deleted if the Change Data Partitioning and Partition Retention options are enabled in the Replicate console.

» Partitions will only be deleted if the task is running. If the task is not running, the partitions will be deleted the next time it runs.

Required permission: See Required Enterprise Manager Permissions.

Syntax

```
def set_change_data_retention_barrier(

    self,

    payload,

    server,

    task

)
```

Parameters

Parameter	Type	Description
payload	AemSetChangeDataRetentionBarrierReq	**Payload Parameters for Setting a Retention Barrier:**

> **Note** The parameter type must be STRING.

`retention_point=`*`timestamp`*

`application=`*`application_`*
`name`

Where:

> » *`timestamp`* is the date up to which partitions can be deleted. The timestamp must be in the following format: (yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z').
>
> » *`application_name`* is the name of the consuming application.

Example:

`retention_point=2020-06-`
`30T16:15:00Z`

`application=Compose`

Payload Parameters for Removing the Retention Barrier:

`retention_point=null`

`application=`*`application_`*
`name`

Where *`application_name`* is the name of the consuming

Parameter	Type		Description
			application whose barrier you wish to remove.
server	string		The name of the server on which the task is running.
task	string		The name of the task.

Error Response

Error	Message	Description
AEM_TASK_ NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
AEM_INVALID_ TIMESTAMP_ FORMAT	The specified partition retention barrier does not conform to the expected timestamp format. Timestamp format should be yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'.	Returned when the specified partition retention barrier does not conform to the expected timestamp format.
AEM_SET_ CHANGE_ DATA_ RETENTION_ BARRIER_ INNER_ERR	Failed to set change data retention barrier for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered when trying to set the retention barrier.

get_change_data_retention_barrier

Returns the date of the earliest partition retention barrier when multiple partition retention barriers have been set.

When different retention barriers have been set by multiple consuming applications, Replicate will delete old Change Data partitions up to the earliest partition retention barrier.

For information on setting a partition retention barrier, see set_change_data_retention_ barrier.

Required User Role: See Required Enterprise Manager Permissions.

Syntax

```
def get_change_data_retention_barrier(

    self,

    server,

    task

)
```

Parameters

Parameter	Type	Description
server	string	The name of the server on which the task is running.
task	string	The name of the task.

Response

Name	Type	Description
application	string	The name of the consuming application that set the earliest partition retention barrier.
retention_point	string Format: yyyy'-'MM'-'dd'T'HH':'mm':'ss'Z'	The date of the earliest partition retention barrier.

Error Response

Error	Message	Description
AEM_TASK_NOT_FOUND	Replication task {task] on server {server} could not be found.	Returned when an unknown task name is encountered.
AEM_GET_CHANGE_DATA_RETENTION_ BARRIER_INNER_ERR	Failed to get change data retention barrier for task {task} on server {server}. Message: {error_message}	Returned when an error is encountered while attempting to get the earliest partition retention barrier.

Parameters

The following table lists all enum parameters that appear in the return values, along with their values.

Parameter Name	Value	Description
Server State	MONITORED	The server is being monitored, the Qlik Enterprise Manager is connected and synchronized successfully.
	ERROR	Qlik Enterprise Manager fails to connect and monitor the server.
	NOT_MONITORED	The server is not being monitored.
Server Platform	» WINDOWS » LINUX	

Parameter Name	Value	Description
License State	» LICENSE_VALID » LICENSE_INVALID_ CHECKSUM » LICENSE_EXPIRED NO_ LICENSE » MACHINE_NOT_LICENSED » INVALID_LICENSE	
Endpoint Role	SOURCE or TARGET	Specifies whether an endpoint is being used as a source or a target in a Replicate task.
Task State	RUNNING	The task is running.
	STOPPED	The task has not been run yet or has stopped running at some point during the replication.
	ERROR	The task has stopped due to a fatal error.
	RECOVERING	The task has detected an error and is trying to recover. After a limited number of attempts, the task either recovers and the state returns to RUNNING, or the task fails and the state turns to ERROR.

Parameter Name	Value	Description
Task options	full_load_enabled [bool]	Creates all files or tables at the target endpoint, automatically defines the metadata that is required at the target, and populates the tables with data from the source.
	apply_changes_enabled [bool]	Updates all changes made to files and tables that were created during the full load. Applied changes include inserts, updates, and removal of items.
	store_changes_enabled [bool]	Stores changes in Change tables. This value and the audit_changes_enabled value are mutually exclusive.
	audit_changes_enabled [bool]	Stores changes in a single audit table. This value and the store_changes_enabled_value are mutually exclusive.

Parameter Name	Value	Description
Task Stop reason	NONE	Indicates that a task is running and no Stop reason is prevalentt.
	NORMAL	Indicates that the task was stopped by the user.
	RECOVERABLE_ERROR	Indicates that the task is still active, but that there is a temporary problem, such as a missing connection. As soon as the error state is resolved, Replicate restarts the task.
	FATAL ERROR	Indicates that the task stopped and the error must be resolved manually. The task cannot be started again until the error has been resolved.
	FULL_LOAD_ONLY_FINISHED	Indicates that the task only finished full load.
	STOPPED_AFTER_FULL_LOAD	Indicates that the task stopped after full load. Cached changes may or may not have been applied.
	STOPPED_AFTER_CACHED_ EVENTS	Indicates that the task stopped after cached changes were applied.
	EXPRESS_LICENSE_LIMITS_ REACHED	The task definition includes actions that are not included with Express license privileges.
	STOPPED AFTER_DDL_APPLY	Indicates that the task stopped after DDL statements were applied.
	STOPPED_LOW_MEMORY	Indicates that the task stopped due to low memory.

Parameter Name	Value	Description
	STOPPED_LOW_DISK	Indicates that the task stopped due to low disk space.
Replication profile	UNIDIRECTIONAL	Data is replicated from a source to a target.
	BIDIRECTIONAL	Changes to the source are replicated to the target, and vice versa.
	LOG_STREAM_STAGING	Changes are captured from a single source and stored on Replicate Server for replication to one or more targets.
Source type Target type	Source and target endpoint types should be specified in the same format that they appear in the **Type** drop-down list (when adding a new endpoint) in Enterprise Manager. For information on how to add an endpoint in Enterprise Manager, refer to the *Enterprise Manager Setup and User Guide*.	

Parameter Name	Value	Description
Run options	RESUME_PROCESSING	Resumes task execution from the point that it was stopped.
	RELOAD_TARGET	Re-starts the full-load replication process if the task was previously run.
	RESUME_PROCESSING_FROM_ TIMESTAMP	Starts the CDC replication task from a specific point.
	RECOVER_USING_LOCALLY_ STORED_CHECKPOINT	Recover a task using the recovery state stored locally in the task folder (located under the Data folder).
	RECOVER_USING_CHECKPOINT_ STORED_ON_TARGET	Recover a task using the CHECKPOINT value from the attrep_txn_state table (created in the target database). **Note** This option is only available if the **Store task recovery data in target database** option is enabled in the **Changes Processing Tuning** tab of the **Task Settings** dialog box.
	METADATA_ONLY_RECREATE_ALL_ TABLES	Recreates the target tables defined for full load.
	METADATA_ONLY_CREATE_ MISSING_TABLES	Creates missing target tables, including Change Tables.
Request state	SUCCESS	Connection to endpoint is valid
	FAILURE	Connection to endpoint is not valid

Parameter Name	Value	Description
Table state	Represented as enum values: » TABLE_QUEUED = 0 » TABLE_LOADING = 1 » TABLE_COMPLETED = 2 » TABLE_CHANGE_PROCESSING = 3 » TABLE_ERROR = 4	**TABLE_QUEUED** - A table awaiting loading. **TABLE_LOADING** - A table being loaded to the target. **TABLE_COMPLETED** - A table that has been loaded to the target. **TABLE_CHANGE_PROCESSING** - A table that has been loaded to the target and is being updated according to changes on the source. **TABLE_ERROR** - An error occurred while processing the table.

A   Reconfiguring Endpoints

The Qlik Enterprise Manager SDK provides a method for overriding the source endpoint settings in a Replicate task with settings from another endpoint *of the same type.* Such functionality may be useful in the event of database failover or when migrating to a different environment, for example.

Using this method requires you to set up relevant Qlik Replicate task(s) with *three* separate source endpoints - two *inactive* source endpoints defined with the primary and secondary database connection settings, and one active source endpoint (initially defined with the primary database connection settings).

Full instructions are provided in Setting Up the Replicate Task and Switching to the Secondary Replicate Endpoint below.

In this appendix, the term "Primary" denotes the database in use before the switchover, whereas the term "Secondary" denotes the database in use after the switchover.

> **Note** Supported with the Oracle source endpoint only.

The method name differs according to the SDK type:

» **REST SDK:** AEMReconfigureEndpointNoWait
» **.NET SDK:** ReconfigureEndpointNoWait
» **Python SDK:** reconfigure_endpoint_no_wait

Setting Up the Replicate Task

To use this method, you need to define three separate endpoints:

» **Endpoint 1:** Points to the primary database

» **Endpoint 2:** Points to the secondary database

» **Endpoint 3:** This is a duplicate of Endpoint 1. Endpoint 3 serves as the source endpoint for the Replicate task(s) and will be updated with the settings of Endpoint 2 or Endpoint 1 (when reverting to the primary database) when the method is called.

To set up the Replicate task:

> **Note** Before starting the procedure, you need to allocate a name for the source endpoint (referred to as **Endpoint 3** above). This is because the source endpoint name forms part of the primary and secondary endpoint names (referred to above as **Endpoint 1** and **Endpoint 2** respectively), which are defined *before* the source endpoint.

1. Define a new endpoint pointing to the primary database and name it using the following format:

   EndpointName__ConfigurationName e.g. **MyOracle__PrimaryOracle**.

   where **EndpointName** is the name of the source endpoint and **ConfigurationName** is the name of this endpoint.

2. Set the internal parameter **supportResetLog** in the **Advanced** tab of the endpoint connection settings.

3. Define another endpoint pointing to the secondary database and name it using the following format:

   EndpointName__ConfigurationName e.g **MyOracle__SecondaryOracle**.

   where **EndpointName** is the name of the source endpoint and **ConfigurationName** is the name of this endpoint.

4. Set the internal parameter **supportResetLog** in the **Advanced** tab of the endpoint connection settings.

5. Define the source endpoint by duplicating the endpoint pointing to the primary database (defined in Step 1). Give it the name that you allocated for it before starting this procedure, e.g. **MyOracle**.

6. Set up and run the Replicate task(s) using the source endpoint defined in Step 5 above.

Switching to the Secondary Replicate Endpoint

The procedures below explain how to switch to the secondary Replicate endpoint. The first procedure is suitable for most use cases, although you may want to perform the second procedure should you desire to manually stop and resume the Replicate tasks.

Procedure 1: Failover or Planned Switchover

Make sure that the secondary database has fully taken over and then call the method - using a script (recommended) or manually - with the appropriate parameters.

Procedure 2: Planned Switchover with Manual Control

1. Stop the task(s) using the source endpoint.
2. Switch over to the secondary database.
3. Make sure that the secondary database has fully taken over and then call the method with the appropriate parameters.
4. If the method completes successfully, resume the task(s) manually.

For a description of the parameters, see the section for the SDK you are working with.

Reverting to the Primary Replicate Endpoint

To revert to the primary endpoint, you simply need to perform one of the procedures described in Switching to the Secondary Replicate Endpoint described above. However, when calling the method, specify the name of the primary endpoint (instead of the secondary endpoint) as the `configuration` parameter.

B   Required Enterprise Manager Permissions

This appendix lists the permission(s) required to call each of the documented SDK methods. Note that the method names listed below are in Python format; the actual method name may differ slightly according to the specific SDK (REST, .NET, or Python) you are using.

- **login**: Viewer on Qlik Enterprise Manager level
- **logout**: Viewer on Qlik Enterprise Manager level
- **put_server_license**: Admin on the specified server
- **get_server_details**: Viewer on server
- **put_server**:
    - For adding a new server - Admin on all servers.
    - For updating an existing server - Admin on the specified server.
- **put_server_acl**: Admin on the specified server
- **get_server**: Operator on the specified server
- **get_server_acl**: Operator on the specified server
- **get_server_list**: Viewer on All Servers
- **delete_server**: Admin on the specified server
- **delete_server_acl**: Admin on the specified server
- **get_task_list**: Viewer on All Tasks
- **get_task_details**: Viewer on the specified task
- **get_table_list**: Viewer on the specific task
- **get_table_status**: Viewer on the specific task
- **delete_task**: Designer on the specified task
- **export_task**: Operator on the specified task and on All Endpoints.
- **import_task**: Designer on All Tasks. If endpoints are also included, then Designer on All Endpoints as well.
- **stop_task**: Operator on the specified task
- **run_task**: Operator on the specified task
- **get_endpoint_list**: Viewer on All Endpoints
- **delete_endpoint**: Designer on the specified endpoint
- **reconfigure_endpoint_no_wait**: Operator on All Endpoints

» **export_all**: Admin on Enterprise Manager and on the specified server, Designer on All Tasks, and Operator on All Endpoints

» **import_all**: Admin on Enterprise Manager and on the specified server, Designer on All Tasks, and Designer on All Endpoints

» **reload_table**: Operator on the specified task

» **test_endpoint**: Operator on the specified endpoint

» **delete_old_change_data**: Operator on the specified task

» **set_change_data_retention_barrier**: Operator on the specified task

» **get_change_data_retention_barrier**: Operator on the specified task