Getting Started Guide

Dell EMC Avamar REST API

Version 19 and Service Packs

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DELL EMC

Preface

As part of an effort to improve the product lines, revisions of the software and hardware are periodically released. Therefore, some functions that are described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact the technical support professional when a product does not function correctly or does not function as described in this document.

Note

This document was accurate at publication time. To find the latest version of this document, go to Online Support (https://support.EMC.com).

Purpose

This document provides information about how to use the Avamar REST API and how to obtain API documentation from the Swagger framework.

Audience

This document is intended for system programmers who are responsible for accessing Avamar server resources through the Avamar REST API.

Revision history

The following table presents the revision history of this document.

Revision	Date	Description
01	May 20, 2019	GA release of Avamar 19.1

Related documentation

The following publications provide additional information:

- HTML-formatted Avamar REST API specification
- *Avamar Administration Guide*

Special notice conventions used in this document

These conventions are used for special notices.

Note

Presents information that is important, but not hazard-related.

Typographical conventions

These type style conventions are used in this document.

Table 1 Typographical conventions

Bold	Used for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks)
Italic	Used for full titles of publications that are referenced in text
`Monospace`	Used for:

Table 1 Typographical conventions (continued)

	• System code • System output, such as an error message or script • Pathnames, filenames, prompts, and syntax • Commands and options
Monospace italic	Used for variables
`Monospace bold`	Used for user input
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections - the bar means "or"
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information that is omitted from the example

Where to get help

The Avamar support page provides access to licensing information, product documentation, advisories, and downloads, as well as how-to and troubleshooting information. This information may resolve a product issue before contacting Customer Support.

To access the Avamar support page:

1. Go to https://www.dell.com/support/home/us/en/19.
2. Type a product name in the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** search box.
3. Select the product from the list that appears. When you select a product, the **Product Support** page loads automatically.
4. (Optional) Add the product to the **My Products** list by clicking **Add to My Saved Products** in the upper right corner of the **Product Support** page.

Knowledgebase

The Knowledgebase contains applicable solutions that you can search for either by solution number (for example, KB000xxxxxx) or by keyword.

To search the Knowledgebase:

1. Go to https://www.dell.com/support/home/us/en/19.
2. Under the **Support** tab, click **Knowledge Base**.
3. Type either the solution number or keywords in the search box. Optionally, you can limit the search to specific products by typing a product name in the search box and then selecting the product from the list that appears.

Online communities

Go to Community Network at http://community.EMC.com for peer contacts, conversations, and content on product support and solutions. Interactively engage online with customers, partners, and certified professionals for all products.

Live chat

To engage Customer Support by using live interactive chat, click **Join Live Chat** on the **Service Center** panel of the Avamar support page.

Service Requests
For in-depth help from Customer Support, submit a service request by clicking **Create Service Requests** on the **Service Center** panel of the Avamar support page.

Note

To open a service request, you must have a valid support agreement. Contact a sales representative for details about obtaining a valid support agreement or with questions about an account.

To review an open service request, click the **Service Center** link on the **Service Center** panel, and then click **View and manage service requests**.

Enhancing support
It is recommended to enable ConnectEMC and Email Home on all Avamar systems:

- ConnectEMC automatically generates service requests for high priority events.
- Email Home sends configuration, capacity, and general system information to Customer Support.

Comments and suggestions
Comments and suggestions help to continue to improve the accuracy, organization, and overall quality of the user publications. Send comments and suggestions about this document to DPAD.Doc.Feedback@emc.com.

Please include the following information:

- Product name and version
- Document name, part number, and revision (for example, 01)
- Page numbers
- Other details to help address documentation issues

About the Avamar REST API

The Avamar Representational State Transfer (REST) API provides a framework to develop applications and tools that interact with a standalone Avamar server. The Avamar REST API uses client-server communication based on the REST architecture model. The REST architectural model provides a platform-independent and language-independent interface to Avamar servers.

Avamar servers currently support the following external interfaces:

- Web Service API (MCSDK)
- Command Line Interface (MCCLI)
- Concerto (REST API which manages multiple Avamar servers)

The Avamar REST API is intended to replace these existing external interfaces in a future release. Subsequent new features about external interfaces will be included in the Avamar REST API, and other external interfaces will be deprecated.

Purpose
The Avamar REST API simplifies the creation of custom web portals for customers who deliver data protection services to end users. The Avamar REST API provides a granular and responsive interface that can be easily integrated with modern web applications. The Avamar REST API also provides a new and less-complex model for managing an Avamar server.

This document describes how you can use the Avamar REST API in Swagger to manage a single Avamar server. Previous Avamar API documentation described the

use of the Avamar API to manage multiple Avamar servers as a single logical entity. Therefore, this document has been created to provide information specifically about the Avamar REST API, which enables you to use and manage a standalone Avamar server.

Custom web portals

The Avamar REST API expands and improves on the available methods for providing Avamar data protection features as a service. By using the Avamar REST API, you can create custom web portals to interact with the Avamar server.

Multisystem management

To manage multiple servers, Avamar 19.1 provides a new component: Orchestra. The *Avamar Orchestra Getting Started Guide* provides more information.

Understanding the Swagger framework

Documentation for the Avamar REST API calls is available in the Swagger framework to simplify use and accessibility.

The Swagger framework or interface describes the REST API in a template that is independent of the implementation language. The API definitions are both machine- and human-readable to minimize the start-up and implementation process. Swagger also simplifies the steps involved in building API tools, creating documentation, and testing the API functionality while using the REST API.

Note

To learn more about Swagger, its open source tools and their functionality, refer to the Swagger documentation.

Manage the REST API

No additional packages are necessary to enable the Avamar REST APIs. The REST APIs are part of the Avamar Management Console Server (MCS) and are bound to the MCS state. You cannot start or stop the REST APIs independently of the MCS.

Procedure

1. Open a command shell and log in by using one of the following methods:
   - For a single-node server, log in to the server as admin.
   - For a multi-node server, log in to the utility node as admin.
2. To start the MCS and REST APIs, type the following command:

   ```
   mcserver.sh --start
   ```

3. To stop the MCS and REST APIs, type the following command:

   ```
   mcserver.sh --stop
   ```

4. To restart the MCS and REST APIs, type the following command:

   ```
   mcserver.sh --restart
   ```

Troubleshooting

The REST API logs reside in the `/usr/local/avamar/var/mc/server_log/` directory.

REST API logs and output filenames use the syntax `mc-rest-api.*.log` and `mc-rest-api.*.out`.

Getting started

The Avamar REST API is part of the Avamar server and becomes available after the Avamar software is installed and configured. Review the following topics before you begin:

How to access the Avamar REST API documentation

The Swagger user interface (UI) contains a complete listing and description of the available Avamar REST API functions, including the applicable object models for constructing API calls. The Swagger UI is updated for every Avamar release.

Access the Swagger UI by opening a web browser and typing **`https://`*`avamarserver`*`/api/swagger-ui.html`**, where *avamarserver* is the IP address or hostname of the Avamar server. For multi-node servers, this is the utility node.

Note

With proper authorization, the Swagger UI can construct and call example REST API commands for testing, and return the results for verification. Dell EMC recommends that you issue only API calls that read from the server.

Testing the Avamar REST API

You can test the Avamar REST API calls from the documentation page. However, you must authenticate and authorize before you begin.

The API calls are grouped into categories. Each API call lists the input parameters, the response definitions, and provides some examples.

Procedure

1. Open the Swagger UI.
2. On the **Avamar RESTful APIs** page, click **Authorize**.

   The **Available authorizations** dialog box opens.
3. Type the admin user credentials in the **Username** and **Password** fields, and then click **Authorize**.
4. Expand the API category for which you want to view the list of available calls. For example, **Get Activities**.
5. Select the API call that you want to test, and then click **Try it out**.

   Swagger displays the available information, including a field for input parameters. You can modify the existing values or use the default values.
6. Click **Execute**.

   Swagger displays the response.

Authorize third party clients to use the Avamar REST API

Before third party clients can use the Avamar REST API, you must authorize their use.

Procedure

1. Create an OAuth2 client with Avamar administrator credentials:

   URL:

   ```
   POST https://<AvamarServer>/api/v1/oauth2/clients
   ```

   where *<AvamarServer>* is the IP address or the FQDN of the Avamar server.

   Header:

   ```
   Authorization: Basic base64(user:password)

   Content-Type: application/json
   ```

   where *user* and *password* are the login credentials for an Avamar admin user.

   Body:

   ```
   {
     "accessTokenValiditySeconds": 1800,
     "authorizedGrantTypes": [
       "password"
     ],
     "autoApproveScopes": [
       "all"
     ],
     "clientId": "<CLIENT_ID>",
     "clientName": "<CLIENT NAME>",
     "clientSecret": "<PASSWORD>",
     "redirectUris": [
       "https://my-app-server/callback"
     ],
     "refreshTokenValiditySeconds": 43200,
     "scopes": [
       "read", "write"
     ]
   }
   ```

   Replace *<CLIENT_ID>*, *<CLIENT NAME>*, *<PASSWORD>*, and *my-app-server* with values that are appropriate for your environment.

2. To obtain an access token, authenticate with the Avamar admin credentials and the generated OAuth2 client credentials:

   URL:

   ```
   POST https://<AvamarServer>/api/oauth/token
   ```

   where *<AvamarServer>* is the IP address or the FQDN of the Avamar server.

Header:

```
Authorization: Basic base64(<CLIENT_ID>:<PASSWORD>)

Content-Type: application/x-www-form-urlencoded
```

Body:

```
grant_type=password&scope=write&username=admin&password=<admin
password>
```

In the body, supply login credentials for an Avamar admin user.

Avamar returns an access token.

Sample response:

```
{
  "access_token": "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9.",
  "token_type": "bearer",
  "expires_in": 1799,
  "scope": "write",
  "domain": "/",
  "authorized_domain": "/",
  "user_name": "root",
  "role": "ROOT",
  "jti": "d7d54186-4bcc-4de8-951f-25c2820a176b"
}
```

If the access token expires, repeat this step to refresh the access token.

3. Use the access token to consume other REST API services:

   To get a list of Avamar server activities, use the **Get Activities** call.

   URL:

```
GET https://<AvamarServer>/api/v1/activities?domain=
%2F&duration=0&recursive=true
```

where *<AvamarServer>* is the IP address or the FQDN of the Avamar server.

Header:

```
Authorization: Bearer <access_token>
"Accept": "application/json",
```

Sample response:

```
{
"content": [],
"statistics": {
"totalQueued": 0,
"totalWaiting": 0,
"totalActive": 0,
"totalCompleted": 0,
"totalCritical": 0,
"totalWarning": 0,
"totalInformation": 0
```

```
},
"last": true,
"totalElements": 0,
"totalPages": 0,
"sort": null,
"numberOfElements": 0,
"first": true,
"size": 20,
"number": 0
}
```

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