

# Dell EMC Avamar

Version 18.2

## REST API Getting Started Guide

302-005-109

REV 01

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Published December 2018

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# CONTENTS

	<b>Preface</b>	<b>5</b>
<b>Chapter 1</b>	<b>Introduction</b>	<b>9</b>
	About Avamar REST APIs.....	10
	Understanding the Swagger framework.....	10
<b>Chapter 2</b>	<b>Getting Started</b>	<b>13</b>
	Getting started.....	14
	Accessing REST API documentation.....	14
	Testing Avamar REST APIs.....	14
	Authorizing third party clients to use Avamar APIs.....	15
<b>Chapter 3</b>	<b>Using Avamar REST APIs</b>	<b>19</b>
	Starting Avamar RESTful APIs.....	20
	Stopping Avamar RESTful APIs.....	20
	Restarting Avamar RESTful APIs.....	21
<b>Chapter 4</b>	<b>Troubleshooting</b>	<b>23</b>
	Troubleshooting Avamar RESTful APIs.....	24
<b>Appendix A</b>	<b>Known Problems and Limitations</b>	<b>25</b>
	Known problems and limitations.....	26



# 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.

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## Note

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

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## Purpose

This document provides information to use the Avamar REST API. API Documentation for Avamar from this release onwards is available on the Swagger Framework. This document provides information to access and use the API documentation published using the Swagger Framework.

## Audience

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

## Revision history

The following table presents the revision history of this document.

Revision	Date	Description
01	December 14, 2018	GA Release of Avamar 18.2

## 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.



Indicates a hazardous situation which, if not avoided, results in death or serious injury.

---



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

---



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

---



Addresses practices that are not related to personal injury.

---

### 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

<b>Bold</b>	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)
<i>Italic</i>	Used for full titles of publications that are referenced in text
<code>Monospace</code>	Used for: <ul style="list-style-type: none"><li>• System code</li><li>• System output, such as an error message or script</li><li>• Pathnames, filenames, prompts, and syntax</li><li>• Commands and options</li></ul>
<i>Monospace italic</i>	Used for variables
<code>Monospace bold</code>	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.

### Documentation

The Avamar product documentation provides a comprehensive set of feature overview, operational task, and technical reference information. To supplement the information in product administration and user guides, review the following documents:

- Release notes provide an overview of new features and known limitations for a release.
- Technical notes provide technical details about specific product features, including step-by-step tasks, where necessary.
- White papers provide an in-depth technical perspective of a product or products as applied to critical business issues or requirements.

### 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.

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**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](mailto: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



# CHAPTER 1

## Introduction

This chapter contains the following sections:

- [About Avamar REST APIs](#)..... 10
- [Understanding the Swagger framework](#)..... 10

## About Avamar REST APIs

Avamar REST APIs provide a framework to develop applications and tools that interact with the standalone Avamar system. The Avamar REST APIs use client-server communication based on the Representational State Transfer (REST) APIs architecture model.

The Avamar system currently supports the following external interfaces:

- Web Service API (MCSDK)
- Command Line Interface (MCCLI)
- Concerto (REST API which is used to manage multiple Avamar Systems)

Avamar REST APIs will replace these existing external interfaces. Subsequent new features about external interfaces will be included in Avamar REST APIs, and other external interfaces will be deprecated.

### REST architecture

The Avamar REST API uses the representational state transfer (REST) architectural style. The REST architectural style permits the Avamar REST API to provide a platform independent and language independent interface Avamar systems.

### 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 system.

This document describes how you can use Avamar REST APIs in Swagger to manage a single Avamar server. Previous Avamar API documentation described the use of Avamar APIs to manage multiple Avamar systems as a single logical entity. Therefore, this document has been created to provide information specifically about the Avamar REST APIs available on Swagger, that enable you to use and manage a standalone Avamar system.

### 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, create the custom web portals to interact with the Avamar system through a REST programming interface.

## Understanding the Swagger framework

Avamar REST APIs are available in the Swagger framework, simplifying their use and the accessibility of their documentation.

The Swagger framework or interface is used to describe REST APIs in a template that is independent of implementation languages. In Swagger, also known as OpenAPI, the REST APIs are language agnostic and the API definitions are machine and human readable. This makes the start-up and implementation process for REST APIs minimal. It also simplifies the steps involved in building API tools, creating documentation, and testing the API functionality while using REST APIs.

This document describes how you can access and use the Avamar REST APIs provided in the Swagger Framework.

---

**Note**

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

---



# CHAPTER 2

## Getting Started

This chapter contains the following sections:

• <a href="#">Getting started</a> .....	14
• <a href="#">Accessing REST API documentation</a> .....	14
• <a href="#">Testing Avamar REST APIs</a> .....	14
• <a href="#">Authorizing third party clients to use Avamar APIs</a> .....	15

## Getting started

Avamar REST APIs are released along with the Avamar system. After you have successfully installed and configured the Avamar system, you can begin using the Avamar REST APIs. Before you start, see Avamar REST API documentation.

## Accessing REST API documentation

Avamar REST APIs use the Swagger framework to publish documentation for REST APIs. These documents are published with every release of the Avamar system.

To access Avamar REST API documentation on swagger using your Avamar Utility Node IP address or Avamar Utility Node FQDN, perform this procedure:

---

### Note

For AVE, you must specify the Virtual Machine's (VM) IP address or FQDN, in place of the Avamar Utility Node IP or FQDN.

---

### Procedure

1. To use your Avamar Utility Node IP, enter the following address in your browser and replace <Avamar Utility Node IP> with the IP address of your Avamar Utility Node:

```
https://<Avamar Utility Node IP>/api/swagger-ui.html
```

2. Alternatively, to use your Avamar Utility Node FQDN, enter the following address in your browser and replace <Avamar Utility Node FQDN> with the FQDN of your Avamar Utility Node:

```
https://<Avamar Utility Node FQDN>/api/swagger-ui.html
```

### Results

The Avamar RESTful APIs page opens.

## Testing Avamar REST APIs

You can test and perform trials of the Avamar REST APIs from the documentation page. However, you must authenticate and authorize before you begin.

### Before you begin

To provide authorization, perform the following procedure:

1. Access the Avamar RESTful APIs on Swagger using your Avamar Utility Node IP or FQDN.  
For more information about accessing API documentation on swagger, see [Accessing REST API documentation](#) on page 14
2. On the Avamar RESTful APIs page, click **Authorize**.
3. In the Available authorizations dialog, enter the credentials of the Admin user in the Username and Password fields and click **Authorize**.

You can test the any Avamar API listed available in the Avamar RESTful APIs page. Avamar APIs are grouped under categories; you can expand each category and test all available APIs. Each API will list the input parameters, response definitions, and provide some examples for parameters and output response.

**Procedure**

1. Expand the API category you want to test to view the list of available APIs.(for example,"Get Activities") and click **Try it out**.
2. Click the API you want to test, then click **Try it out**.

The input parameters are displayed. You can choose to modify the values for the input parameters or use the default values.

3. Click **Execute**.

The response is then displayed.

## Authorizing third party clients to use Avamar APIs

Before third party clients can use Avamar APIs, you must authorize their use.

**Procedure**

1. Create an OAuth2 client with Avamar administrator credentials using the following example REST API:

POST URL:

```
https://<Avamar Utility Node IP or Avamar Utility Node FQDN>/api/v1/oauth2/clients
```

In the POST URL, replace <Avamar Utility Node IP or Avamar Utility Node FQDN> with either the IP address or the FQDN of your Avamar Utility Node.

POST Header :

```
Authorization: Basic base64(Admin:password)
Content-Type: application/json
```

In the POST Header, replace (Admin:Password) with the login credentials of the Avamar Administrator.

POST 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"
  ]
}
```

**Note**

In the preceding example, you must replace <CLIENT\_ID>, <CLIENT NAME> and <PASSWORD> with the values in your environment.

2. To get the access token, provide authorization with your Avamar Admin credentials and the generated OAuth2 client credentials as described below:

POST URL:

```
https://<Avamar Utility Node IP or Avamar Utility Node FQDN>/api/oauth/token
```

In the POST URL, replace <Avamar Utility Node IP or Avamar Utility Node FQDN> with either the IP address or the FQDN of your Avamar Utility Node.

POST Header :

```
Authorization: Basic base64(clientId:clientSecret)
Content-Type: application/x-www-form-urlencoded
```

POST Body:

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

In the POST Body, enter the login credentials of the Avamar Administrator for the username and password parameters.

Response Body Sample:

```
{
  "access_token":
    "eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9.eyJyb2xlIjoiUk9PVCIsInVzZXJfbmFtZSI6InJvb3QlLCJzY29wZSI6WyJ3cm10ZSJdLCJkb21haW4iOiIvIiwiaXV0aG9yaXplZF9kb21haW4iOiIvIiwiaXNzXhwIjoxNTQyNTM2LCJhdXRoY3JpdGllcyI6WyJST09UIl0sImp0aSI6ImQ3ZDU0MTg2LTRiY2MtNGRlOC05NTFmLTlYzI4MjBhMTc2YiIsImNsaWVudF9pZCI6Im15LWNsaWVudC1pZCJ9.ggVulr50N2CuY-WfKxmodClO2QnPmFq1lnyf5lrgkUiV7pAFKcO9EUb_kCK4zRB1q5mzzEAA3MuEOLS-1xeCnelyuBlhMvtR6Z3QxhbXkxYexNjiIiJtXDL_sUTaRClmBhdJC4rU4KncjnTQ8oAd1hlbcO4o7SK5zo3UJrMYoPkzBGa3S-bk7kdn_ZDQxMRQnLIiT7DSRFpc6-gkTKQkIClpCuNDw_FqqFr1_DIBjsWI5FQVJmFeXfxHG0uQYnusDwgSUXKHJZMiDByfBACdj5acE-0aWdBI8O7Czgpuls2KwHx-aVpFACB8JAxjVc8VBBObhmRIq0m1EHhL8vUQHAmvXyvIOmGapastVlmc0zm74-Wuu4YiuwxuQkUarQReFzKmBl domrSgUd73RPpmUJP8Vu58y-eMdtx_qSoBOTyBZA0weddygESeAZ5WCF7n87FJ7Pvk9BEql9smaf3fv8Prapha1UxpCr9dkJR1McHDbio8Bo6VA9pXruLSZ",
  "token_type": "bearer",
  "expires_in": 1799,
  "scope": "write",
  "domain": "/",
  "authorized_domain": "/",
  "user_name": "root",
  "role": "ROOT",
  "jti": "d7d54186-4bcc-4de8-951f-25c2820a176b"
}
```



3. Consume other REST APIs with `access_token` in the HTTP requests as described in the following example:

To get a list of Avamar System activities, use the Get Activities API.

GET URL:

```
https://<Avamar Utility Node IP or Avamar Utility Node FQDN>/api/v1/activities?domain=%2F&duration=0&recursive=true
```

In the GET URL, replace `<Avamar Utility Node IP or Avamar Utility Node FQDN>` with either the IP address or the FQDN of your Avamar Utility Node.

Request Header :

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

Response Body Sample:

```
{
  "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
}
```

---

#### Note

If the access token expires, perform [Step 2](#) of this procedure to refresh the access token.

---



# CHAPTER 3

## Using Avamar REST APIs

This chapter contains the following sections:

- [Starting Avamar RESTful APIs](#).....20
- [Stopping Avamar RESTful APIs](#).....20
- [Restarting Avamar RESTful APIs](#)..... 21

## Starting Avamar RESTful APIs

No additional packages need to be installed to enable Avamar REST APIs. They are installed and configured along with the Avamar Management Console. To start Avamar Restful APIs, perform the following procedure:

### Procedure

1. Log in to the Avamar Utility Node with admin user credentials and execute following command:

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

```
admin@<HOSTNAME>:~/>: mcserver.sh --start
```

In the preceding example, <HOSTNAME> is placeholder text for the hostname in your environment.

---

### Note

REST API operations are bound to the Avamar Managed Console Server. If you execute this command, then the Avamar Managed Console Server will also be started.

---

## Stopping Avamar RESTful APIs

To stop Avamar Restful APIs, perform the following procedure:

### Procedure

1. Log in to the Avamar Utility Node with admin user credentials and execute following command:

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

```
admin@<HOSTNAME>:~/>: mcserver.sh --stop
```

In the preceding example, <HOSTNAME> is placeholder text for the hostname in your environment.

---

### Note

REST API operations are bound to the Avamar Managed Console Server. If you execute this command, then the Avamar Managed Console Server will also be stopped.

---

## Restarting Avamar RESTful APIs

To restart Avamar Restful APIs, perform the following procedure:

### Procedure

1. Log in to the Avamar Utility Node with admin user credentials and execute following command:

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

```
admin@<HOSTNAME>:~/>: mcserver.sh --restart
```

In the preceding example, <HOSTNAME> is placeholder text for the hostname in your environment.

---

### Note

REST API operations are bound to the Avamar Managed Console Server. If you execute this command, then the Avamar Managed Console Server will also be restarted.

---



# CHAPTER 4

## Troubleshooting

This chapter contains the following sections:

- [Troubleshooting Avamar RESTful APIs](#)..... 24

## Troubleshooting Avamar RESTful APIs

You can access the server logs to troubleshoot Avamar Rest API errors.

To access the server log files, perform the following procedure:

### Procedure

1. Log in to the Avamar server using Admin user credentials.
2. Navigate to the following location to locate the server\_log directory:

```
/usr/local/avamar/var/mc/server_log/
```

### Results

The following are the names of the log files located in this directory:

- mc-rest-api.\*.log
- mc-rest-api.\*.out



# APPENDIX A

## Known Problems and Limitations

This appendix contains the following sections:

- [Known problems and limitations](#).....26

## Known problems and limitations

### **Support for standalone Avamar systems only**

Avamar REST APIs only support a standalone Avamar instance. These REST APIs do not support the management of multiple Avamar Systems.

#### **Workaround:**

To workaround this limitation, the customization application could perform a loop operation for each Avamar system to manage multiple systems.