EMC® Avamar® Virtual Edition 7.4 and Service Packs for Hyper-V

Installation Guide

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EMC Corporation
Hopkinton, Massachusetts 01748-9103
1-508-435-1000 In North America 1-866-464-7381
www.EMC.com

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PREFACE

As part of an effort to improve its product lines, EMC periodically releases revisions of its software and hardware. Therefore, some functions 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 your EMC technical support professional if a product does not function properly or does not function as described in this document.

Note

This document was accurate at publication time. Go to EMC Online Support (https://support.emc.com) to ensure that you are using the latest version of this document.

Purpose

This guide describes how to install the Avamar Virtual Edition solution, a single-node, non-RAIN Avamar server that runs as a virtual machine in a Microsoft Hyper-V environment.

Audience

The information in this guide is primarily intended for system administrators who are responsible for installing and maintaining Avamar virtual servers.

Revision history

The following table presents the revision history of this document.

Revision	Date	Description
01	December, 2016	DA release of Avamar 7.4.
02	March, 2017	GA release of Avamar 7.4 Service Pack 1
03	May, 2017	Added upgrade information

Related documentation

The following EMC publications provide additional information:

- *Avamar Release Notes*
- *Avamar Administration Guide*
- *Avamar Operational Best Practices Guide*
- *Avamar Product Security Guide*
- *Avamar Backup Clients User Guide*

Special notice conventions used in this document

EMC uses the following conventions to alert the reader to particular information.

NOTICE

The Notice convention emphasizes important information about the current topic.

Note

The Note convention addresses specific information that is related to the current topic.

Typographical conventions

In this document, EMC uses the typographical conventions that are shown in the following table.

Table 1 Typographical conventions

Convention	Example	Description
Bold typeface	Click **More Options**.	Use for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what a user specifically selects or clicks).
Italic typeface	*EMC Avamar Administration Guide*	Use for full titles of publications that are referenced in text.

Monospace font	`Event Type = INFORMATION`
	`Event Severity = OK`
	`Event Summary = New group created`
		Use for:
		• System code
		• System output, such as an error message or script
		• Pathnames, file names, prompts, and syntax
		• Commands and options

Monospace font with italic typeface	Type ***Avamar_server***, where *Avamar_server* is the DNS name or IP address of the Avamar server.	Use for variables.
Monospace font with bold typeface	Type **yes**.	Use for user input.
Square brackets	**[--domain=*String*(/)] --name=*String***	Square brackets enclose optional values.
Vertical bar	**[--domain=*String*(/)] | --name=*String***	Vertical bar indicates alternate selections - the bar means “or”.

Table 1 Typographical conventions (continued)

Convention	Example	Description
Braces	`{[--domain=String(/)] | --name=String}`	Braces enclose content that the user must specify.
Ellipses	`valid hfs ...`	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 enable you to resolve a product issue before you contact EMC Customer Support.

To access the Avamar support page:

1. Go to https://support.EMC.com/products.
2. Type a product name in the **Find a Product** box.
3. Select the product from the list that appears.
4. Click the arrow next to the **Find a Product** box.
5. (Optional) Add the product to the **My Products** list by clicking **Add to my products** in the upper right corner of the **Support by Product** page.

Comments and suggestions

Comments and suggestions help EMC 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

CHAPTER 1

Introduction

This chapter includes the following topics:

Overview of Avamar Virtual Edition for Hyper-V

Avamar Virtual Edition (AVE) is a single-node non-RAIN (Redundant Array of Independent Nodes) Avamar server that runs as a virtual machine in a Windows environment using Hyper-V® Manager. AVE integrates the latest version of Avamar software with SUSE Linux as a Hyper-V virtual machine.

See the compatibility guide on EMC Online Support (https://support.EMC.com) for specific information about supported versions of Windows and Hyper-V software.

AVE is similar to single-node Avamar servers in the following ways:

- Runs autonomously as a target for all Avamar client backups
- Performs replication to a physical Avamar system or another AVE

AVE is available in four configurations: 0.5 TB, 1 TB, 2 TB, and 4 TB licensed capacity. AVE is not scalable to a multi-node Avamar server and resizing the virtual machine is not supported. You can increase storage capacity by deploying additional AVE virtual machines, and then divide backups among them. Or you can replicate the data to another Avamar server, delete the smaller virtual machine, create a larger virtual machine, and replicate the data back to the larger virtual machine.

Appropriate environments for AVE

The following factors have the most direct impact on the long-term reliability, availability, and supportability of the AVE virtual machine:

- I/O performance capability of the AVE storage subsystem
- Amount of data added daily to the AVE virtual machine (change rate)
- Capacity utilized within the AVE virtual machine

Specifications in this section and AVE virtual disk requirements on page 16 describe minimum or maximum requirements for these factors. AVE generally performs better when I/O performance is higher, and change rate and utilized capacity are lower. To maximize the capacity the AVE virtual machine can use, the daily change rate of the data AVE protects must be balanced with adequate I/O performance.

The first step in determining the proper implementation of AVE is to establish which kind of customer environment AVE will be used to protect, file server or mixed environment. File server environments include file system data and mixed environments include file system data and structured data (for example, database data).

The following table describes the maximum change rates that AVE supports for file server and mixed environments.

Table 2 Maximum change rates AVE supports for file server and mixed environments

Configuration	File server data	Mixed data
0.5 TB AVE	Less than 2 GB per day	Less than 5 GB per day
1 TB AVE	Less than 4 GB per day	Less than 10 GB per day
2 TB AVE	Less than 8 GB per day	Less than 20 GB per day
4 TB AVE	Less than 20 GB per day	Less than 20 GB per day

Actual results depend on the retention policy and the actual data change rate. When the daily change rate exceeds the limits specified in the previous table, deploy a single or multi-node Avamar server.

CHAPTER 2

Installation

This chapter includes the following topics:

Preinstallation requirements and best practices

Before you install an AVE virtual machine, follow the preinstallation requirements and review the best practices in the following sections.

Note

Using third party tools to create clones or exact copies of deployed Avamar Virtual Edition systems is known to cause issues. Cloning of Avamar Virtual Edition systems is not supported.

Verifying the DNS configuration

Prior to installing AVE, DNS must be properly configured. Failure to have DNS set up properly can cause runtime or configuration issues. An entry should be created in the DNS server with a fixed IP address for the AVE virtual machine prior to AVE installation.

Procedure

1. Open a command prompt on the Windows Server and type the following command:

   nslookup *AVE_IP_address DNS_Server_IP_address*

   The `nslookup` command will return the FQDN for AVE.

2. Type the following command:

   nslookup *AVE_FQDN DNS_Server_IP_address*

   The `nslookup` command will return the IP address for AVE.

3. Type the following command:

   nslookup *FQDN_of_Hyper_V_Server DNS_Server_IP_address*

   The `nslookup` command returns the IP address of the Hyper-V Server.

4. If the `nslookup` commands returned the proper information, close the command prompt. If the `nslookup` commands do not return proper information, resolve the DNS configuration before you install AVE.

AVE virtual disk requirements

The AVE disk layout comprises one operating system disk (126 GB) and several storage partitions (250 GB or 1000 GB depending on the AVE configuration).

The OS disk stores the operating system, Avamar application and log files.

The storage partitions store the backup data. Backup data is evenly distributed across the storage partitions. The primary amount of the disk read, write, and seek usage occurs on the storage partitions. To improve performance in the storage configuration, distribute storage partitions across high performance LUNs.

In addition to the OS partition, the following table defines the number and size of virtual disks required for each AVE configuration.

Table 3 AVE virtual disk requirements

AVE configuration	Number of virtual disks
0.5 TB	3 storage partitions (250 GB each)
1 TB	6 storage partitions (250 GB each)
2 TB	3 storage partitions (1000 GB each)
4 TB	6 storage partitions (1000 GB each)

Software requirements

Before you install AVE, ensure you have the software listed in the following table.

Table 4 Additional AVE software installation requirements

Requirement	Description
Applications	PuTTY, WinSCP, 7Zip, and Hyper-V Manager 6.2/6.3
Files	AVE Package, operating system security patches (if applicable)

Network requirements

Before you install AVE, gather the following information:

- Hostnames and IP addresses for the AVE virtual machine and the DNS Server
- Gateway, netmask, and domain of the AVE virtual machine
- Firewall openings, if applicable

Note

The *Avamar Product Security Guide* provides client-server data port usage and firewall requirements.

Virtual disk configuration best practices

Hyper-V supports multiple disk formats. For AVE virtual machines, the requirement is to use fixed disks.

The AVE for Hyper-V install file comes with a program called `createvhdfast.exe`. This program is used to quickly create one or more virtual hard disk (VHD) files for use with AVE for Hyper-V. The application creates a hard disk file quickly by not filling its contents with zeros, so the resulting file may contain fragments of previously deleted files. Since this data may be accessible by the virtual machine utilizing the resulting disk file, this may raise security issues.

The `createvhdfast.exe` program can be used in two modes.

Mode one creates a single VHD file which can then be attached to your Hyper-V virtual machine as a SCSI disk. Mode one allows greater control in how disks are created and allocated.

Mode two creates multiple VHD files based on the AVE virtual machine size. The resulting VHD files (three or six depending on the size of the AVE being deployed) are

spread across defined datastores and can be attached to your Hyper-V virtual machine as SCSI disks (-datastore1, -datastore2, and -datastore3)

If there are security concerns, EMC recommends you do not use this tool but instead use the standard Microsoft Hyper-V tools to create virtual hard disk files.

The `createvhdfast.exe` is covered in the Preparing the virtual machine sec tion.

Note

AVE does not support dynamic or differencing disks.

A virtual machine running AVE aggressively uses disk I/O and is almost never idle. Microsoft's recommendations for appropriate resources for high-performance database virtual machines are generally applicable to an AVE virtual machine. In particular, a storage pool allocated from a group of dedicated physical disks in a RAID 1 (mirror) or RAID 10 (combines RAID 0 with RAID 1) configuration provides the best performance.

Network Time Protocol (NTP) server best practices

With AVE release 7.3, support for synchronizing the AVE with a Network Time Protocol (NTP) server has been added. Best practice is to identify at least one NTP server to synchronize with the AVE host. If no NTP server is identified, the default behavior is to leave the NTP service disabled and to synchronize with the Hyper-V host. If one or more NTP server is identified during network configuration, the host NTP service must be manually disabled. To do this:

1. Right-click the VM in Hyper-V manager and select Settings.
2. In the Settings dialog, under Management, go to Integration Services.
3. Deselect Time synchronization.
4. Click OK

During network configuration, you can enter one or more optional NTP servers in either IPv4 or IPv6 format or in hostname format.

Upgrade requirements and best practices

The procedures in this document can be used for upgrading Avamar Virtual Edition servers at release level 7.3 and above to newer versions of the AVE. Upgrades of AVE from releases prior to 7.3 must be performed by EMC personnel.

Upgrading other components in your Avamar environment

Information in this document pertain only to the upgrade of the AVE server. Other components in your environment may require upgrades as well to retain compatibility after the AVE upgrade. Check appropriate compatibility guides on EMC Online Support (https://support.EMC.com) and take any necessary steps to upgrade external components separately. Some external components may require EMC engagement. External components include, but are not limited to:

- All clients and database plug-ins. Contact EMC Support if more information about client versions is needed.
  - If the Avamar VMware or NDMP plug-in are being used, these should be upgraded to a supported version, if necessary, prior to upgrading the AVE server.

  - If Avamar is being used on conjunction with NetWorker, the NetWorker software should be upgraded to a supported version, if necessary, prior to upgrading the AVE server.
- Tape out applications such as ADT and ATO/ADMe.
  If necessary, upgrade these applications as part of your upgrade.
- Avamar Extended Retetion (AER)
  The AER software should be shut down prior to upgrading the AVE server. If necessary, contact EMC Support to open a ticket with Remote Proactive to upgrade AER.

Stopping replication tasks prior to upgrade
If replication is running during upgrades, the upgrades will fail. Determine whether replications are running and cancel those tasks if appropriate, prior to upgrading the AVE server. The *Avamar Administration Guide* contains information about monitoring and cancelling replication tasks.

Installation

The following sections are describe how to install an AVE virtual machine.

Preparing the virtual machine

The following instructions are used to install the virtual machine.

Procedure

1. Download the AVE virtual appliance file for the appropriate version of AVE you are installing to the Windows Server (on the Hyper-V host that will run AVE).

   Required software can be downloaded from https://support.emc.com/.

2. Extract the compressed `.7z` file.
3. From the `.7z` uncompressed file, extract the `createvhdfast.zip` file.

   See Virtual disk configuration best practices on page 17 for information on the `createvhdfast.exe` utility and whether should be used or if the disks should be manually created. If you are manually creating the VHDs skip the following steps on `createvhdfast.exe`.

4. If you are using the `createvhdfast.exe` utility complete the following steps:

   a. Download and install the 32-bit version of `vcredist_x86.exe` (Microsoft VC++ 2012 Runtime) directly from Microsoft.

      You must use the 32-bit version of this utility even if the Windows operating system is 64-bit.

   b. Download and install `dotNetFx40_Full_setup.exe` (Microsoft .Net 4.0 Runtime) directly from Microsoft.

   c. Select Mode 1 or Mode 2.

Mode	Command	Options
Mode 1	**`createvhdfast.exe -size=`*`n`*`G -path=`*`path`*`.vhd`**	• *n* is the size of the partition in GB. • *path.vhd* is the location of the path and file for the VHD.

Mode	Command	Options
Mode 2	`createvhdfast.exe -avetype=n -basename=name -datastore1=path1 [-datastore2=path2] [-datastore3=path3]`	• *n* is one of the following values for the size of the AVE virtual machine. ▪ Use 0.5T for .5 TB AVE ▪ Use 1T for 1 TB AVE ▪ Use 2T for 2 TB AVE ▪ Use 4T for 4 TB AVE • *name* is the name of the VHD. • *pathx* is the path to the datastore.

5. Launch **Server Manager**, select **Hyper-V**, then right click your Hyper-V host and select **Hyper-V Manager**.
6. Expand **Hyper-V Manager**, on the left side of the dialog box select your Hyper-V host. On the right side under **Actions**, click **Import Virtual Machine...**
7. From **Locate Folder** click **Browse...** and select the folder where you extracted the compressed file. Click **Select Folder** and then click **Next**.
8. From **Select Virtual Machine** highlight the **Virtual Machine**, and click **Next**.
9. From **Choose Import Type** select **Copy the virtual machine (create a new unique ID)** and click **Next**.
10. From **Choose Destination** accept the default settings and click **Next**.
11. From **Choose Folders to Store Virtual Hard Disks** accept the default settings and click **Next**.
12. From **Summary**, review your selections and if correct, click **Finish**.
13. Once the system has finished importing the virtual machine, right click the virtual machine and select **Settings...**
14. In the **Settings** window, under **Hardware**, choose **SCSI Controller**. Select **Hard Drive** and click **Add**.
15. In **Hard Drive** window **Virtual hard disk:** click **Browse**.
16. In the **Open window**, select the **File Name** and click **Open**.
17. Repeat ***steps 14-16*** for each VHD associated with the AVE virtual machine size. Click **Apply**.
18. In the **Settings** window, under **Hardware**, select **Add Hardware** and for the type choose **Network Adapter** Click **Add**.
19. Select the new **Network Adapter**. The Network Adapter settings are available on the right side of the dialog box. Under **Virtual switch:** select your network connection's virtual switch from the drop-down menu. If you need the virtual machines connection to be tagged with a VLAN ID, under the VLAN ID section, select the checkbox **Enable virtual LAN identification** and assign the VLAN ID identifier. Click **Apply**.
20. In the**Processor** window, update the number of virtual CPUs based on the size of the AVE license and click **Apply**.
    - For 0.5 TB AVE, specify **2 CPUs**.
    - For 1 TB AVE, specify **2 CPUs**.
    - For 2 TB AVE, specify **2 CPUs**.

- For 4 TB AVE, specify **4 CPUs**.

21. In the**Memory** window, update the memory size based on the size of the AVE license and click **Apply** click **OK**.
    - For 0.5 TB AVE, specify **6144 MB**
    - For 1 TB AVE, specify **8192 MB**
    - For 2 TB AVE, specify **16384 MB**
    - For 4 TB AVE, specify **36864 MB**
22. Power on the virtual machine. The system will reboot once after initial power on.

Configuring network settings

The following procedure is used to configure AVE network configuration for a single IP address or dual stack environment.

The `avenetconfig` command will run automatically when the virtual machine is first booted, in which case you should proceed to 4

Procedure

1. In the Hyper-V manager, right-click on the virtual machine and select **Connect**.
2. Log in as root using the password **`changeme`**.
3. At the command prompt, type the following command:

   ```
   avenetconfig
   ```

4. To enter the **IPv4 IP Configuration**, press **1**.
   a. Press **1** again to enter the **IPv4 Address and Prefix** (for example, 10.6.1.2/24 or 10.6.1.2/255.255.255.0).
   b. Press **2** to enter the **IPv4 Default Gateway** address.
   c. Press **4** when complete to return to the main menu.
5. To enter the **IPv6 IP Configuration**, press **2**.
   a. Press **1** to enter the**IPv6 Address and Prefix** (for example, 2000:10A:: 5/64).
   b. Press **2** to enter the **IPv6 Default Gateway** address.
   c. Press **4** when complete to return to the main menu.
6. Press **3** to enter the **DNS Settings**.
   a. Press **1** to enter the **Primary Nameserver** IP address. Both IPv4 and IPv6 addresses are supported. Enter additional optional nameservers by pressing **2** and **3**.
   b. Press appropriate number to enter **Alternative Search Domain(s)** (originally the number is **4**, but increases based on the number of Alternative Search Domains you enter). This is optional and represents a list of domain names that will be added to the DNS search path. By default, only the domain portion of the AVE hostname is added.
   c. Press the appropriate number to enter the **Hostname/FQDN** (originally the number is **5**, but increases based on the number of Alternative Search Domains you entered above). This is optional and is the Fully Qualified Domain Name to be used as the hostname of this AVE. If not provided, the

AVE will attempt to determine its hostname from DNS using the IP addresses provided above.

d. Press the appropriate number when complete to return to the main menu.

7. Press **4** to enter or change the **NTP Settings**.

   The **NTP Settings** is optional and can be a single IP address or comma-separated list of IP addresses for Network Time Protocol servers. If left blank, the default behavior is to use the WMware host's timesync. If one or more address is included here, the VMware host's timesync is disabled and the NTP service is enabled.

   a. Press **1** to enter the IP address(s) for the NTP server(s).

   b. Press **3** to return to the main menu.

8. At the main menu, review your configuration and press **5** to save the changes and exit.

Installing and configuring Avamar software

To install Avamar software on a new AVE virtual machine, follow the instructions included in the help file for the AVE installation workflow on the **SW Releases** page of the **Avamar Installation Manager**.

Procedure

1. Open a web browser and log in to Avamar Installation Manager:

   The *Avamar Administration Guide* contains information about the **Avamar Installation Manager**.

   a. Type the following URL:

   `https://Avamar-server:7543/avi`

   where *Avamar-server* is the IP address or the resolvable hostname of the Avamar server.

   The Avamar Installation Manager login page appears.

   b. Type `root` for the username of the Avamar administrator user account in the **User Name** field and `changeme` for the password in the **Password** field.

   c. Click **Login**.

2. Click **SW Releases**.

3. Click the **?** button for the AVE installation package, **ave-config**, to open the help file for the AVE installation workflow.

4. Click **Install** next to the AVE installation package, **ave-config**.

5. Monitor the installation progress on the **Installation Progress** page and respond to any installation problems:

   a. Take the appropriate action to resolve the problem.

   b. After resolving the problem, click **Call Support**.

   The **Call Support** dialog box appears.

   c. Click **Issue resolved, continuing the installation**.

   The installation resumes.

d. Repeat these steps for all problems that occur during the installation.

Post-installation tasks

The following tasks should be performed after completing the upgrade of the AVE server.

Restart the Backup Scheduler

When performing an upgrade of the AVE server, as part of the pre-upgrade steps, the backup scheduler was suspended prior to the upgrade. Restart the backup scheduler by typing the following command as the admin user:

```
dpnctl start sched
```

Output will look similar to the following:

```
admin@Avamar:~/>: dpnctl start sched
Identity added: /home/admin/.ssh/dpnid
(/home/admin/.ssh/dpnid)
dpnctl: INFO: Resuming backup scheduler...
dpnctl: INFO: Backup scheduler resumed.
```

Restart the Maintenance Scheduler

When performing an upgrade of the AVE server, as part of the pre-upgrade steps, the maintenance scheduler was suspended prior to the upgrade. Restart the maintenance scheduler by typing the following command as the admin user:

```
dpnctl start maint
```

Output will look similar to the following:

```
admin@Avamar:~/>: dpnctl start maint
Identity added: /home/admin/.ssh/dpnid (/home/admin/.ssh/dpnid)
dpnctl: INFO: Resuming maintenance windows scheduler...
dpnctl: INFO: maintenance windows scheduler resumed.
```

Reboot Avamar proxy clients

When performing an upgrade of the AVE server, if Avamar proxy clients are installed, reboot the proxy clients using the following command:

```
sudo mccli mcs reboot-proxy --all=true
```

Output will look similar to the following:

```
0,22357,Initiated request to recycle proxy power.
```

Testing Data Domain integration

If the AVE is being used in conjunction with Data Domain, verify the status of the Data Domain integration and open any necessary service requests with EMC Support if problems occur. The *Avamar and Data Domain System Integration Guide* contains information about performing replication.

Generating new certificates with Data Domain systems

When the AVE is connected to a Data Domain system, is upgraded to Avamar release 7.3 or greater, and session ticket authentication is enabled during upgrade, new certificates must be generated on the Data Domain system. The *Avamar Product Security Guide* contains further information.

Setting the passphrase on Data Domain systems

When the AVE is connected to a Data Domain system and is upgraded to Avamar release 7.3 or greater, the DDBoost user must have a passphrase enabled.

1. Log into the Data Domain system.
2. Enter the following command at the Data Domain CLI:
   ```
   system passphrase set
   ```
3. When prompted, enter a passphrase.

Note

The DDBoost user must have admin rights.

Testing replication

If replication was configured prior to upgrading the AVE server, verify the status of replication and open any necessary service requests with EMC Support if problems occur. The *Avamar Administration Guide* contains information about performing replication.

Upgrade Avamar clients downloads

The *EMC Avamar Client Downloads and Client Manager Installer Upgrades* technical note, available on EMC Online Support (https://support.emc.com) contains information about how to upgrade client installation packages.

Install the server hotfixes and the Avamar Platform Security Rollup

Periodically, EMC Avamar creates and distributes hotfixes for the server, and also produces a quarterly Platform Security Rollups which should be installed on exsiting AVE systems. When available, you should install hotfixes and the security rollup on the AVE server. The *Avamar Administration Guide* contains information about installing hotfixes, and the EMC Support KB article https://support.emc.com/kb/335359 provides instructions for installing the security rollup.

Upgrading Avamar software

To upgrade Avamar software on a new AVE virtual machine, follow the instructions included in the help file for the AVE upgrade workflow on the **SW Releases** page of the **Avamar Installation Manager**.

Procedure

1. Download the AVE virtual appliance file for the appropriate version of AVE you are installing.

   Required software can be downloaded from https://support.emc.com/. You can also use the Avamar Download Manager to download the software. The *Avamar Administration Guide* contains information about configuring and using the Avamar Download Manager.

2. Open a web browser and log in to Avamar Installation Manager:

   The *Avamar Administration Guide* contains information about the **Avamar Installation Manager**.

a. Type the following URL:

   `https://Avamar-server:7543/avi`

   where *Avamar-server* is the IP address or the resolvable hostname of the Avamar server.

   The Avamar Installation Manager login page appears.

b. Type `root` for the username of the Avamar administrator user account in the **User Name** field and `changeme` for the password in the **Password** field.

c. Click **Login**.

3. Upload the AVE virtual appliance file downloaded in 1 on page 24 to the AVE:

   a. Click **Repository**.

      The **Repository** tab appears.

   b. For **Package Upload**, click **Browse** and select the package to upload.

      Once the package upload completes, it automatically appears in the **Repository** table.

4. Click **SW Upgrade**.

   The **SW Upgrade** tab appears.

5. Click the **?** button for the AVE installation package, **AvamarUpgrade-*version*.avp**, to open the help file for the AVE installation workflow.

6. Click **Upgrade** next to the AVE installation package, **AvamarUpgrade-*version*.avp**.

7. Monitor the installation progress on the **Installation Progress** page and respond to any installation problems:

   a. Take the appropriate action to resolve the problem.

   b. After resolving the problem, click **Call Support**.

      The **Call Support** dialog box appears.

   c. Click **Issue resolved, continuing the installation**.

      The installation resumes.

   d. Repeat these steps for all problems that occur during the installation.