XC Series Data Protection Management Console Administrator's Guide

Dell EMC Reference Architecture

Revisions

Date	Description
November 2017	Initial release
March 2018	Added set up instructions for Linux VM (section 8.7.2)

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1 Solution Overview

The XC Series Data Protection Management Console (DPMC) is a cross domain application that aims to integrate Dell EMC XC appliances with Dell EMC data protection IP. A main driver of the program is the proliferation of Microsoft Hyper-V workloads and integration with Microsoft virtualization and public cloud offerings.

Data Protection integration is accomplished through the following approaches:

- Integrating Avamar Virtual Edition (AVE) and Data Domain with the XC Series hyper-converged platform
- Providing a backup target built on PowerEdge servers with Data Domain Virtual Edition (DDVE)
- Using dedicated Data Domain appliances as required backup targets

NOTE: Data Domain (DD) appliances are available in several options with sales tiers for mid-market small, mid-market large, remote office, branch office (ROBO) and enterprise.

Because of the turnkey functionality and value-add automation that simplifies customer operation, DPMC adds security and provides platform flexibility while still using a familiar management framework.

Customers benefit from streamlined deployments and automation in the run-time environment with automated VM protection, tiering based on policy (including cloud) and automated solution updates.

The following Hypervisors are supported:

- ESXi 5.5 and above
- Microsoft Windows Server 2012R2

The key features of this solution include:

- VM system backups using Avamar as the backup solution with Data Domain Boost Integration
- Source-side deduplication via Data Domain Boost (DDBoost) – a reduction in network bandwidth utilization and decreased backup times
- Data Domain storage target for all backup data
- Prism-like user interface with integration into Prism Central
- Multiple and mixed clustered environments (Hyper-V and ESXi)

2 Avamar and Data Domain reference architecture

DPMC offers data protection of VMs by integrating a few components, including:

- Avamar as a backup agent
- Data Domain Boost Integration for source-side deduplication of backup data
- Data Domain storage target
- DPMC, management console

The solution also offers backups within multiple clusters and mixed clustered environments (Hyper-V and ESXi).

2.1 Solution architecture in ESXi

The diagram below illustrates the solution architecture for ESXi.

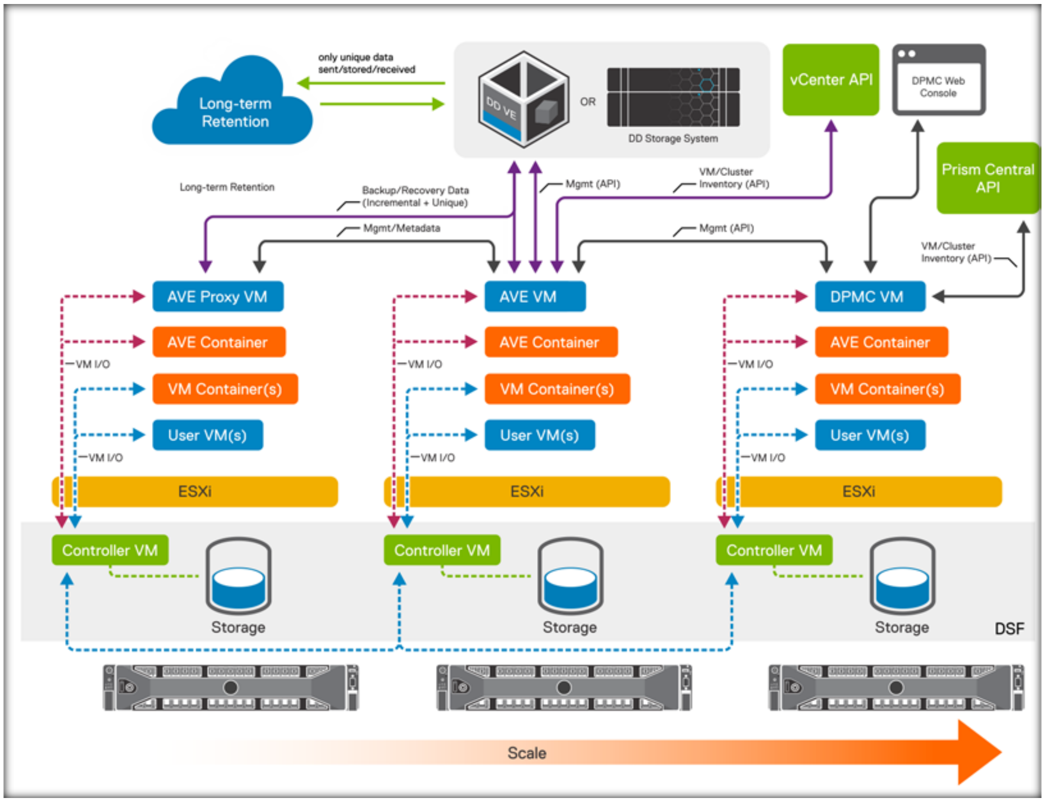


Figure 1 Dell EMC XC Series Appliances

2.2 Solution architecture in Hyper-V

The diagram below illustrates the solution architecture for Hyper-V.

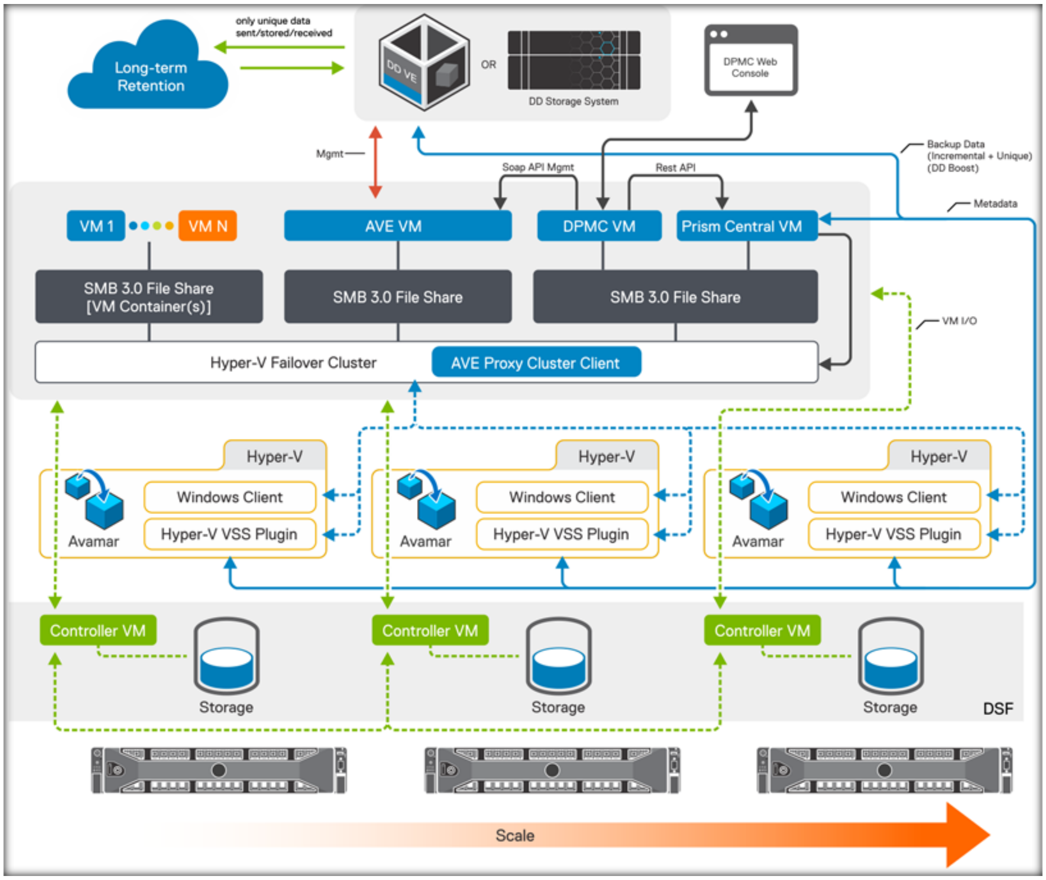


Figure 2 Dell EMC XC Series Appliances (Hyper-V)

2.3 Solution component architecture DPMC

The DPMC solution has multiple components that are managed by DPMC. As displayed in the diagram above, the following components are required for the solution:

- DPMC (developed by Dell EMC)
- Avamar Virtual Edition (manually installed and configured prior to DPMC setup)
- Prism Central (manually installed and configured prior to DPMC setup)
- Data Domain (manually installed and configured prior DPMC setup)
- XC Cluster (manually installed and configured prior DPMC setup)

3 Data Protection Management Console (DPMC) deployment and registration with Prism Central

This section outlines the prerequisites, requirements and step-by-step instructions to deploy DPMC in a Nutanix cluster with an integrated Avamar VE.

3.1 Prerequisites

For a successful deployment of DPMC, make sure the following prerequisites are met:

- A static IP address with DNS reverse resolution
- Sufficient resources to house the DPMC VM (see the System requirements section below)
- No active DPMC VM running in the cluster (current release only supports one DPMC instance per implementation)
- Valid OVA file of DPMC VM for ESXi (or DPMC VM zip archive for Hyper-V)
- vSphere Web Client with VMware Client Integration Plug-in installed for ESXi
- Hyper-V requires hosts with administrator access

3.2 Software requirements

You must have the following software:

- vSphere Component for ESXi
- Microsoft Hypervisor:2012 R2 for Hyper-V deployment
- DDOS Version: DD OS 5.7.x, DD OS 6.0.x, DD OS 6.1.x
- Cluster NOS 5.1 or above
- Avamar Virtual Edition (AVE) 7.5.0.183 with Hotfix 289693

3.3 Deploying DPMC VMware Virtual Machine

The following sections describe steps performed on the vCenter server in the vSphere Web Client.

3.3.1 Infrastructural requirements

Before deploying the DPMC virtual machine, you must complete the following tasks:

Associate Nutanix cluster with Prism Central
Deploy and Configure an AVE virtual machine
Associate AVE VM with Data Domain instance

3.3.1.1 Associate Nutanix cluster(s) with Prism Central

You must set up a Nutanix Storage cluster on either a VMware or a Hyper-V environment. You must also install and configure Prism Central (PC) and register all clusters with PC. Because DPMC communicates with PC directly, only clusters that are associated with PC are managed by DPMC. Refer to the *Prism Central Guide* on the Nutanix portal for more details on installing and registering to Prism Central.

3.3.1.2 Deploy and Configure an AVE virtual machine

You must configure an AVE virtual machine with at least 0.5 TB for use with DPMC.

3.3.1.3 Associate AVE with a Data Domain instance

You must associate AVE with a Data Domain instance.

NOTE: All backups initiated by DPMC are stored on the default Data Domain instance and not on the AVE.

3.3.2 System requirements

To run the DPMC VM, the host system must meet the following minimum requirements:

ESXi system requirements	
CPU	4 virtual CPUs
Memory	16 GB
Hard Disk	50 GB
Network	1 network adapter

Hyper-V system requirements	
CPU	4 virtual CPUs
Memory	16 GB
Hard Disk	50 GB (Dynamic)
Network	1 network adapter

3.3.3 Network requirements

After deploying the DPMC OVA, configure the VM's network, including IP address, hostname, DNS and subnet.

3.3.4 Software package

The DPMC installation files for ESXi are packaged as an OVA. It can be deployed on a vCenter cluster through the vSphere (web) client.

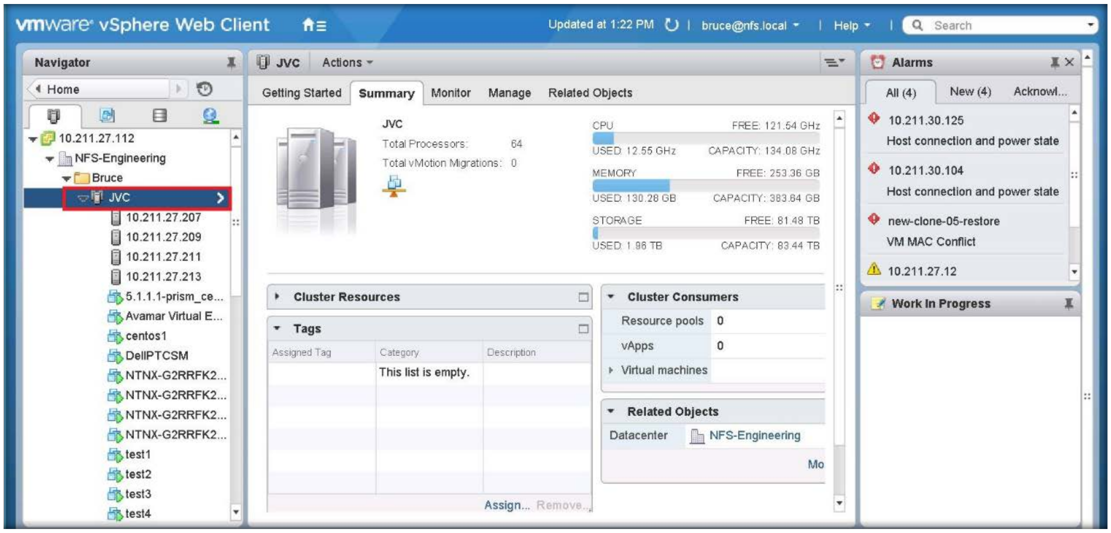
For Hyper-V, DPMC installation files are packaged as a compressed zip file with a VM configuration file and virtual disks. Installation can be accomplished by importing the VM through Hyper-V manager.

3.3.5 Deploying DPMC using vSphere Web Client or desktop client

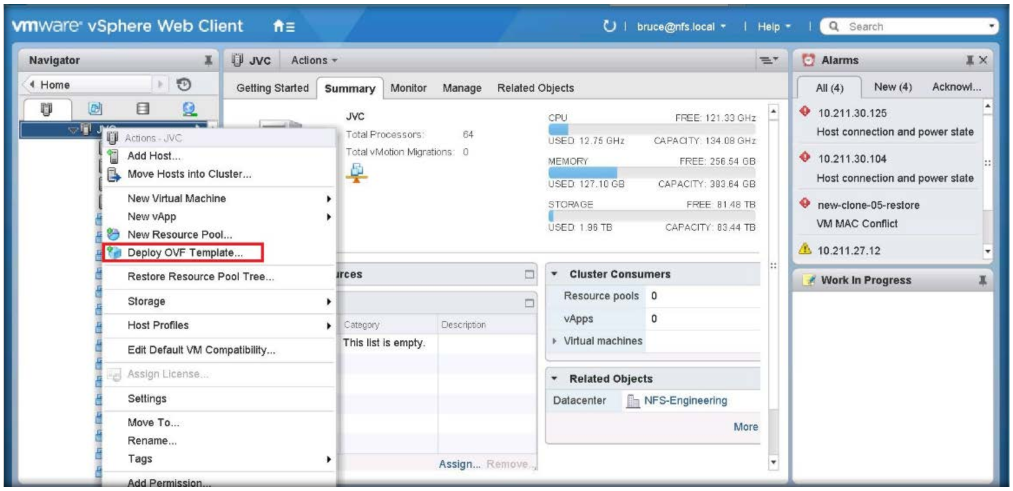
The following sections describe steps performed on the vCenter server in the vSphere web client. You can also complete these steps through the vSphere desktop client.

1. To deploy the DPMC virtual machine, locate the downloaded OVA/OVF file.

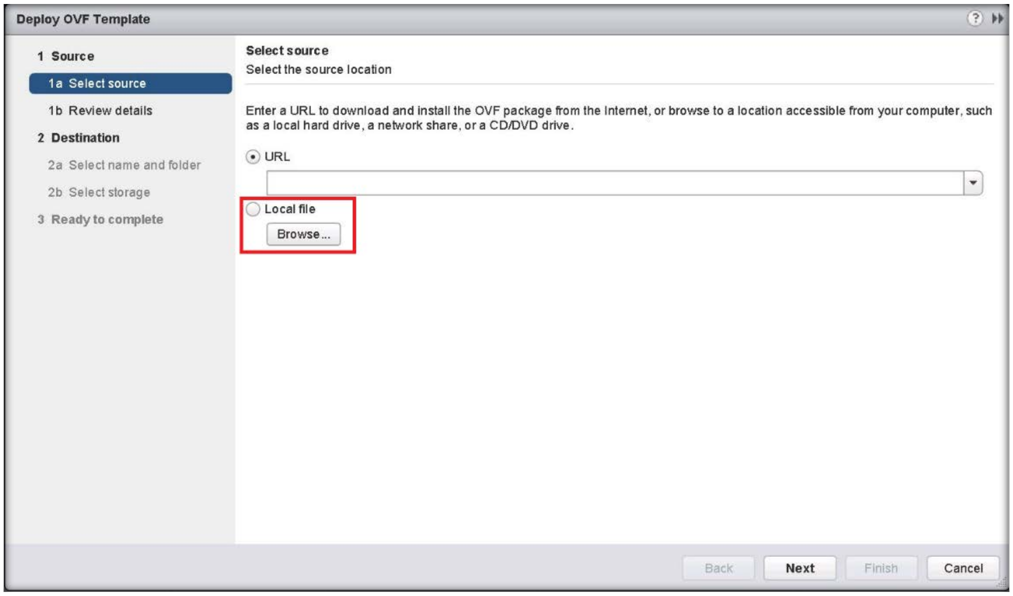
2. In the vSphere Web Client, navigate to the cluster that will host the DPMC virtual machine.



3. Right-click on the desired cluster and select **Deploy OVF Template**.



4. Select **Local file** and then click **Browse**.



Deploy OVF Template

1 Source

1a Select source

1b Review details

2 Destination

2a Select name and folder

2b Select storage

3 Ready to complete

Select source

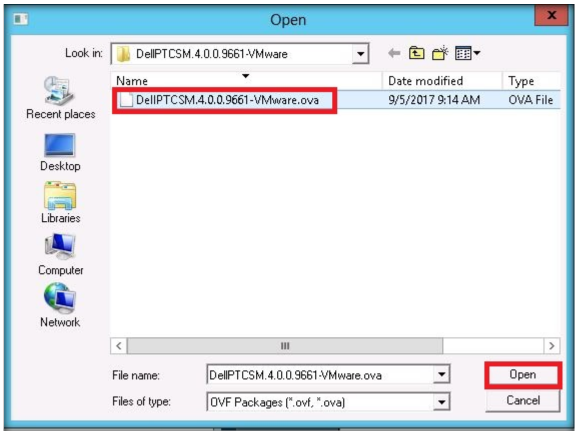
Select the source location

Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

● URL

○ Local file

5. Browse to the location of the virtual machine file and click **Open**.



Open

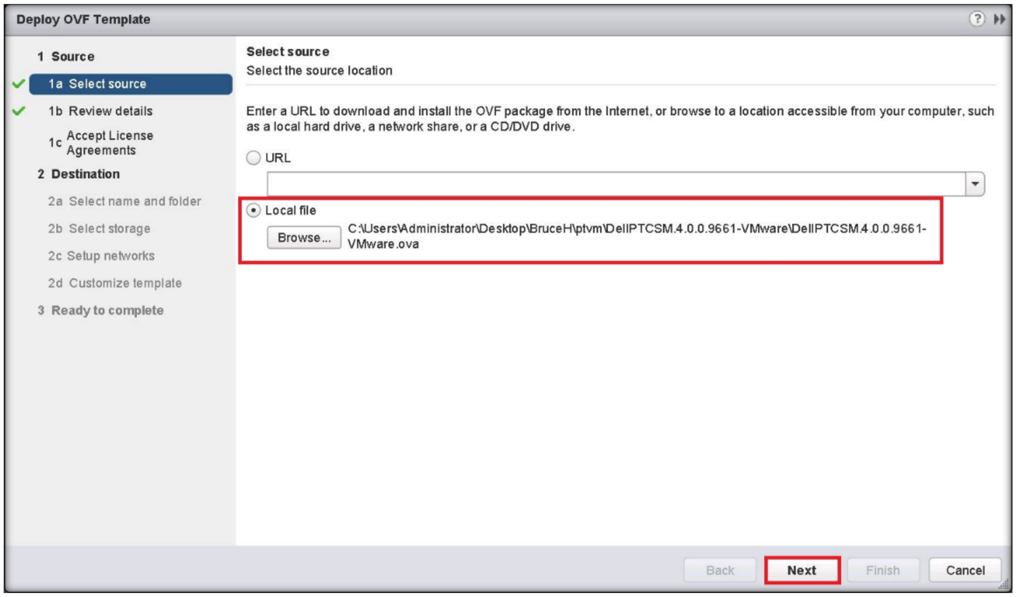
Look in: DellPTCSM.4.0.0.9661-VMware

Name	Date modified	Type
DellPTCSM.4.0.0.9661-VMware.ova	9/5/2017 9:14 AM	OVA File

File name: DellPTCSM.4.0.0.9661-VMware.ova

Files of type: OVF Packages (*.ovf, *.ova)

6. Click **Next**.



Select source

Select the source location

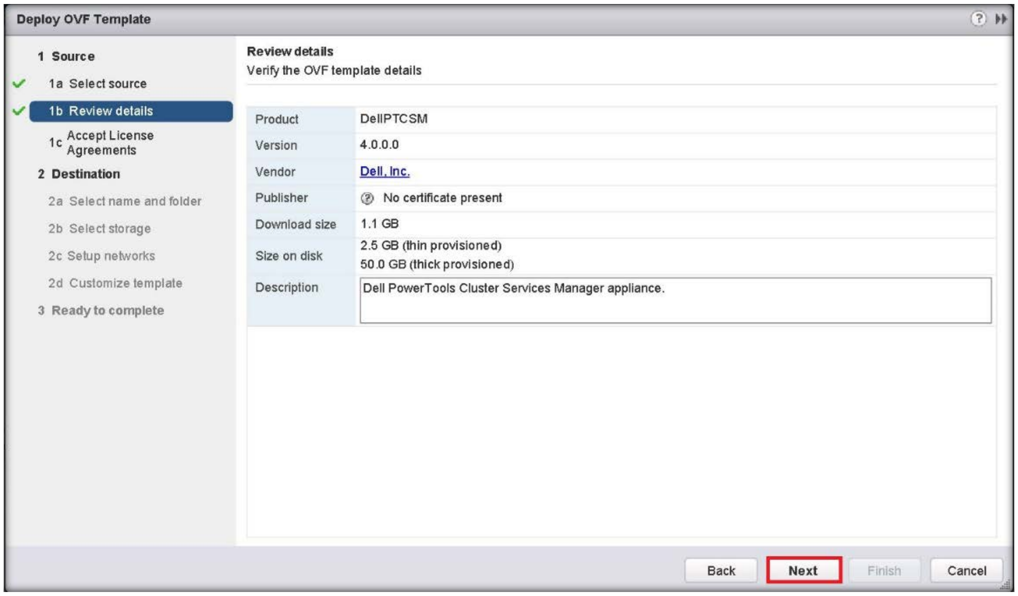
Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

○ URL

● Local file

C:\Users\Administrator\Desktop\BruceH\ptvm\DellPTCSM.4.0.0.9661-VMware\DellPTCSM.4.0.0.9661-VMware.ova

7. Review details and then click **Next**.

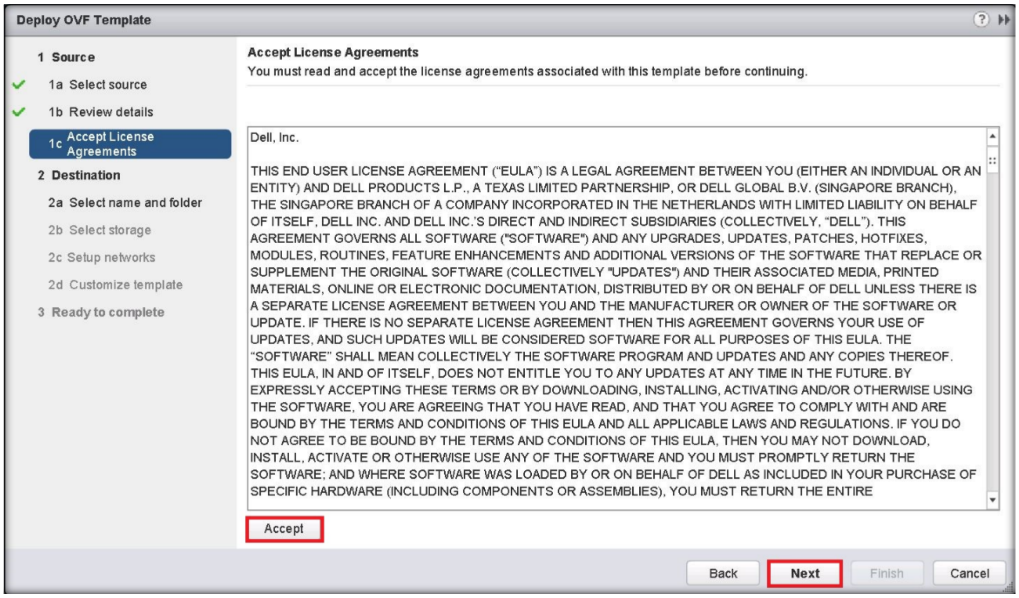


Review details

Verify the OVF template details

Product	DellPTCSM
Version	4.0.0.0
Vendor	Dell, Inc.
Publisher	No certificate present
Download size	1.1 GB
Size on disk	2.5 GB (thin provisioned) 50.0 GB (thick provisioned)
Description	Dell PowerTools Cluster Services Manager appliance.

8. To accept the software license agreement, click **Accept** and then click **Next**.



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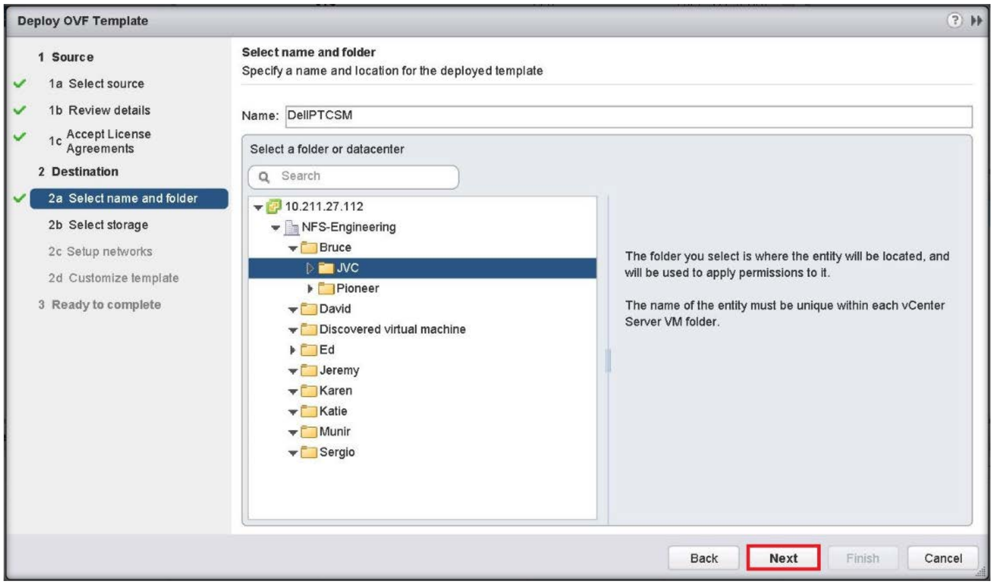
9. Browse to the folder that will be used to assign management permissions to the DPMC VM and then click **Next**.



Select name and folder

Specify a name and location for the deployed template

Name: DellPTCSM

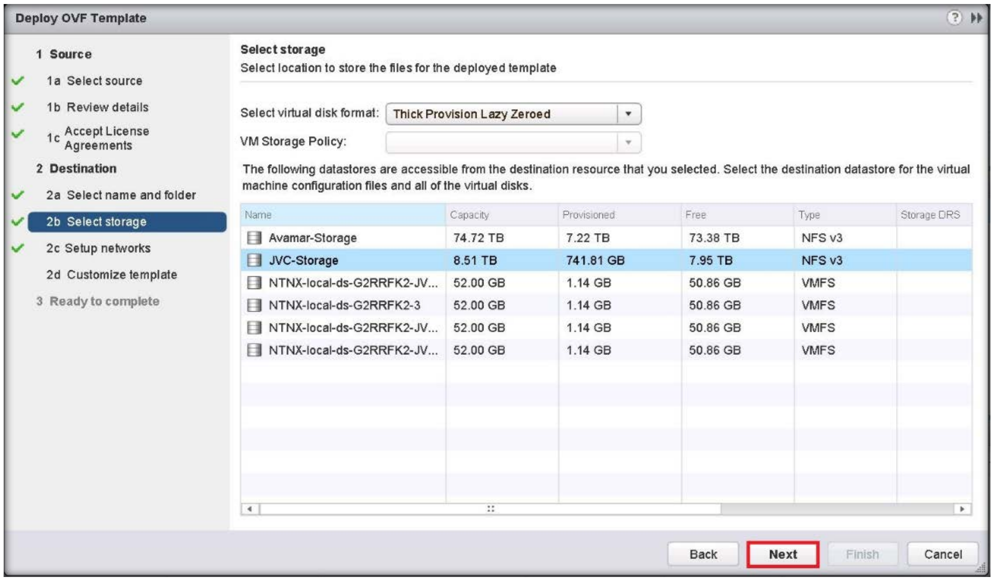
The folder you select is where the entity will be located, and will be used to apply permissions to it.

The name of the entity must be unique within each vCenter Server VM folder.

10. Select the storage location for the DPMC VM.

WARNING: Do not select storage shared with Avamar VMs or proxies. Do not select any of the SATADOMs (on XCx30 appliances).

11. Click **Next**.



Select storage

Select location to store the files for the deployed template

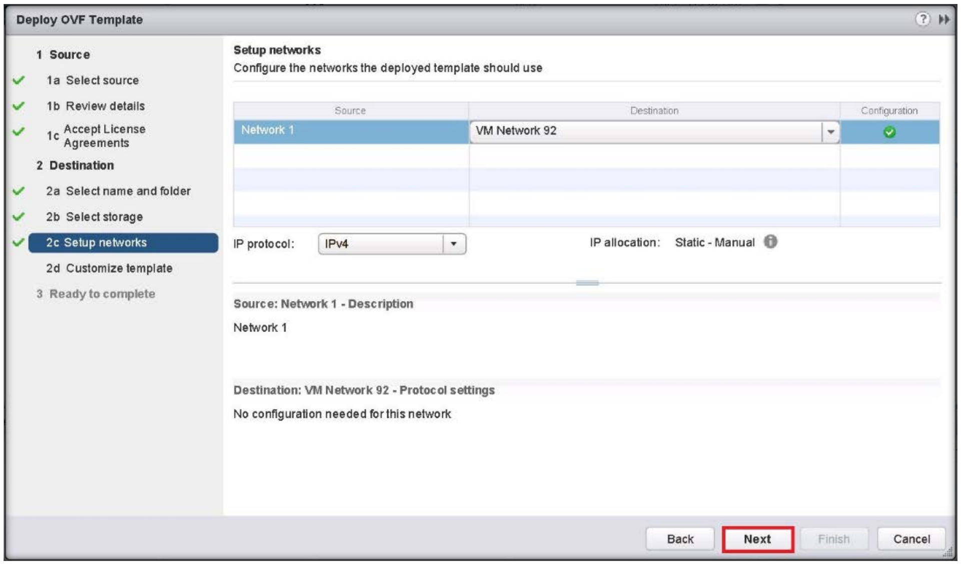
Select virtual disk format: Thick Provision Lazy Zeroed

VM Storage Policy:

The following datastores are accessible from the destination resource that you selected. Select the destination datastore for the virtual machine configuration files and all of the virtual disks.

Name	Capacity	Provisioned	Free	Type	Storage DRS
Avamar-Storage	74.72 TB	7.22 TB	73.38 TB	NFS v3	
JVC-Storage	8.51 TB	741.81 GB	7.95 TB	NFS v3	
NTNX-local-ds-G2RRFK2-JV...	52.00 GB	1.14 GB	50.86 GB	VMFS	
NTNX-local-ds-G2RRFK2-3	52.00 GB	1.14 GB	50.86 GB	VMFS	
NTNX-local-ds-G2RRFK2-JV...	52.00 GB	1.14 GB	50.86 GB	VMFS	
NTNX-local-ds-G2RRFK2-JV...	52.00 GB	1.14 GB	50.86 GB	VMFS	

12. Select the network that the DPMC VM will use and then click **Next**.



Setup networks

Configure the networks the deployed template should use

Source	Destination	Configuration
Network 1	VM Network 92	✓

IP protocol: IPv4

IP allocation: Static - Manual

Source: Network 1 - Description

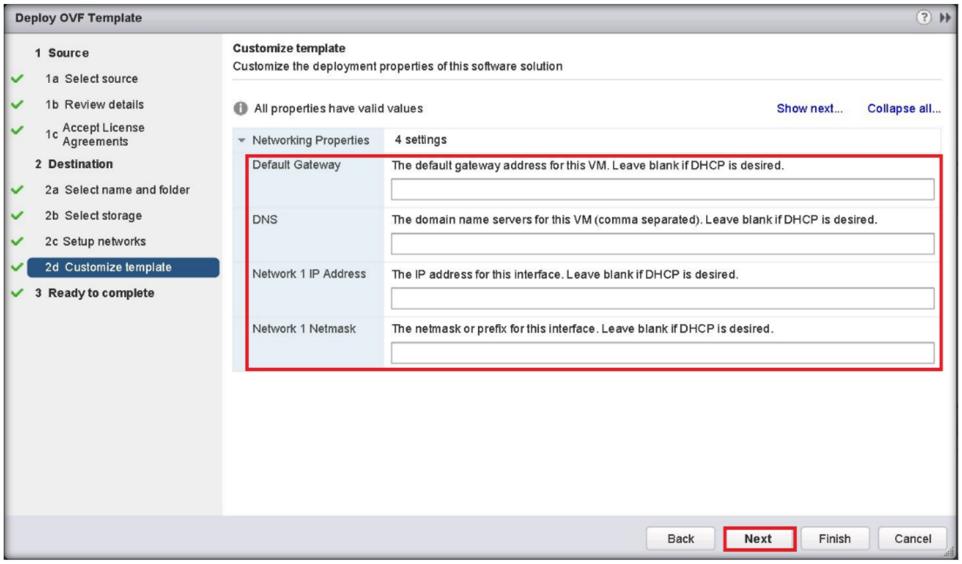
Network 1

Destination: VM Network 92 - Protocol settings

No configuration needed for this network

13. Enter the network information and then click **Next**.

NOTE: Dell EMC recommends a static IP address for DPMC VM.



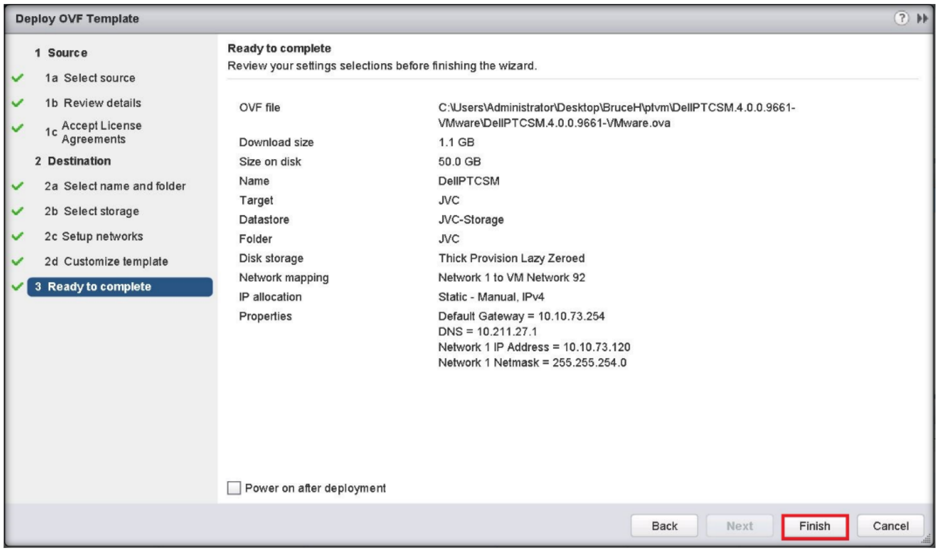
Customize template

Customize the deployment properties of this software solution

All properties have valid values

Networking Properties	4 settings
Default Gateway	The default gateway address for this VM. Leave blank if DHCP is desired.
DNS	The domain name servers for this VM (comma separated). Leave blank if DHCP is desired.
Network 1 IP Address	The IP address for this interface. Leave blank if DHCP is desired.
Network 1 Netmask	The netmask or prefix for this interface. Leave blank if DHCP is desired.

14. Check the **Power on after deployment** checkbox (optional).
    Review the information. If you need to make changes, click **Back**. If the information is correct, click **Finish**.



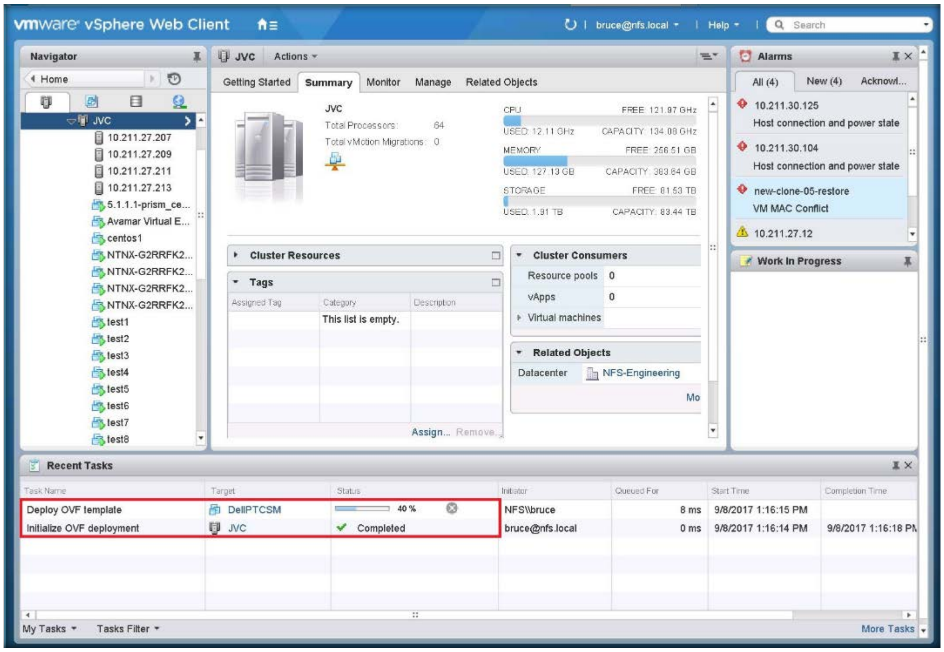
Ready to complete

Review your settings selections before finishing the wizard.

OVF file	C:\Users\Administrator\Desktop\BruceH\ptvm\DellPTCSM.4.0.0.9661-VMware\DellPTCSM.4.0.0.9661-VMware.ova
Download size	1.1 GB
Size on disk	50.0 GB
Name	DellPTCSM
Target	JVC
Datastore	JVC-Storage
Folder	JVC
Disk storage	Thick Provision Lazy Zeroed
Network mapping	Network 1 to VM Network 92
IP allocation	Static - Manual, IPv4
Properties	Default Gateway = 10.10.73.254 DNS = 10.211.27.1 Network 1 IP Address = 10.10.73.120 Network 1 Netmask = 255.255.254.0

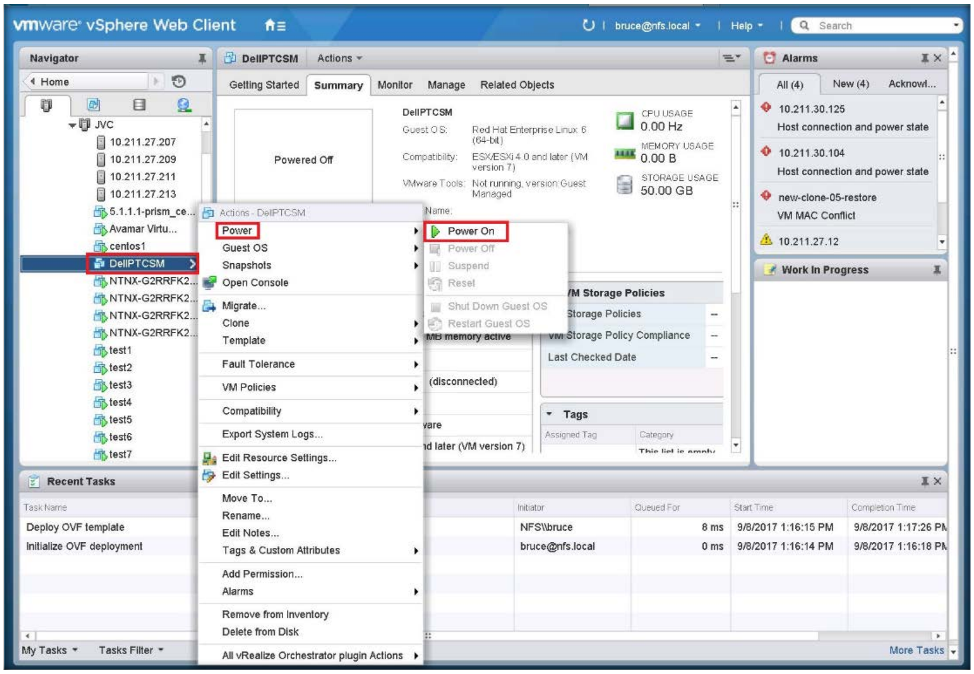
□ Power on after deployment

The vSphere Web Client deploys the DPMC VM and displays progress in the bottom frame.



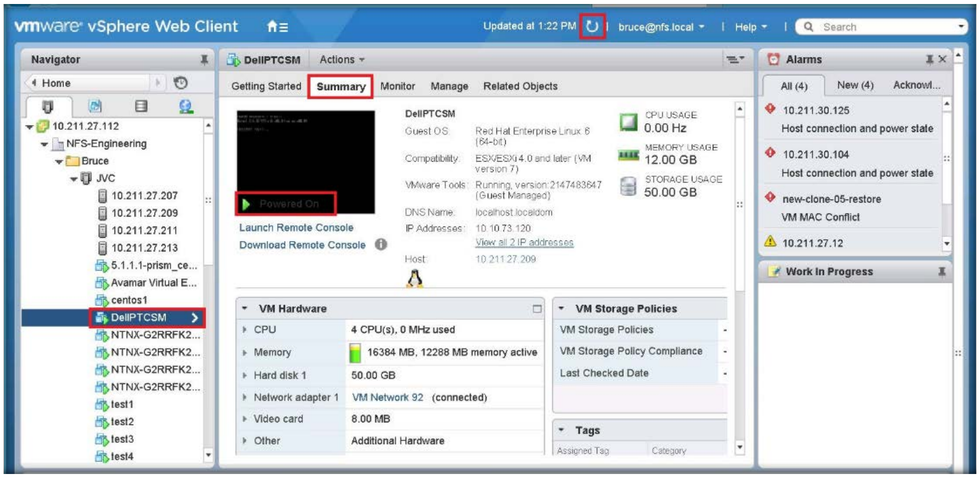
Task Name	Target	Status	Initiator	Queued For	Start Time	Completion Time
Deploy OVF template	DellPTCSM	40 %	NFS\bruce	8 ms	9/8/2017 1:16:15 PM	
Initialize OVF deployment	JVC	Completed	bruce@nfs.local	0 ms	9/8/2017 1:16:14 PM	9/8/2017 1:16:18 PM

15. In the left pane of vSphere Web Client, right-click on the DPMC VM and select **Power On** from the menu.



Task Name	Initiator	Queued For	Start Time	Completion Time
Deploy OVF template	NFS\bruce	8 ms	9/8/2017 1:16:15 PM	9/8/2017 1:17:26 PM
Initialize OVF deployment	bruce@nfs.local	0 ms	9/8/2017 1:16:14 PM	9/8/2017 1:16:18 PM

16. After a few seconds, the DPMC displays as **Powered On** in the **Summary** tab. You may need to click the **Refresh** button to see the power status sooner.



DellPTCSM
Guest OS: Red Hat Enterprise Linux 6 (64-bit)
Compatibility: ESX/ESXi 4.0 and later (VM version 7)
VMware Tools: Running, version:2147483647 (Guest Managed)
DNS Name: localhost.localdom
IP Addresses: 10.10.73.120
View all 2 IP addresses
Host: 10.211.27.209

CPU USAGE 0.00 Hz
MEMORY USAGE 12.00 GB
STORAGE USAGE 50.00 GB

10.211.30.125 Host connection and power state
10.211.30.104 Host connection and power state
new-clone-05-restore VM MAC Conflict
10.211.27.12

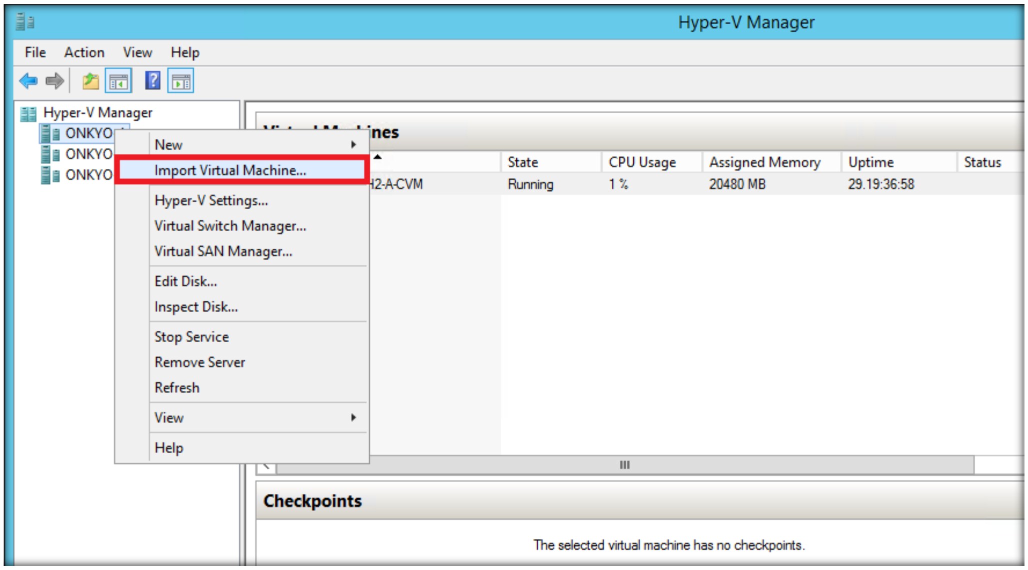
VM Hardware	
CPU	4 CPU(s), 0 MHz used
Memory	16384 MB, 12288 MB memory active
Hard disk 1	50.00 GB
Network adapter 1	VM Network 92 (connected)
Video card	8.00 MB
Other	Additional Hardware

VM Storage Policies -
VM Storage Policy Compliance -
Last Checked Date -

3.3.6 Deployment of DPMC Hyper-V Virtual Machine

The process to deploy a Hyper-V DPMC Virtual Machine can be performed in Hyper-V Manager, or Virtual Machine Manager. The following sections demonstrate the deployment of a DPMC VM in Hyper-V Manager.

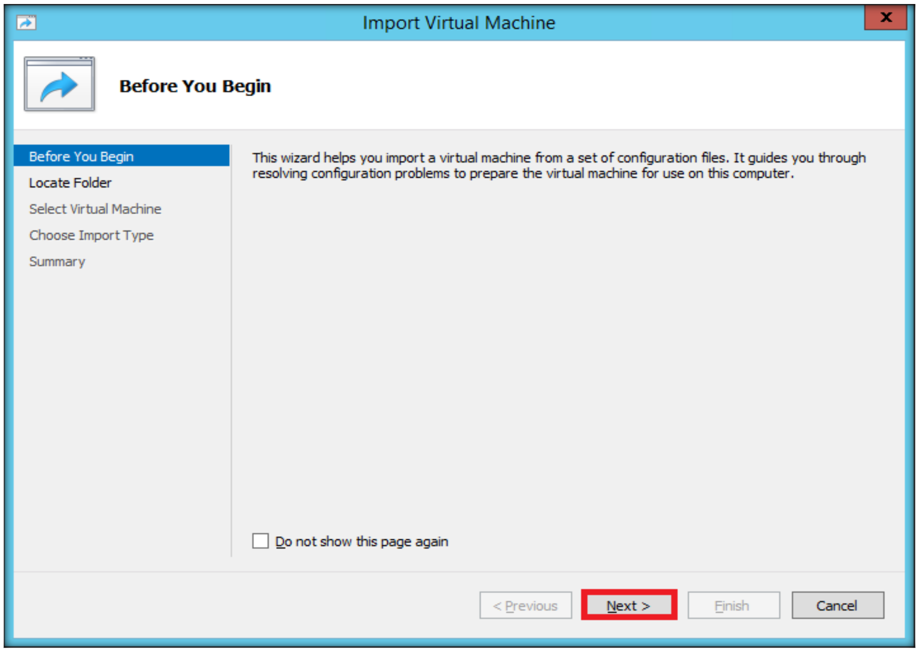
1. In Hyper-V Manager, on the left pane, select the host where the DPMC VM will be hosted. Right-click and select **Import Virtual Machine**.



	State	CPU Usage	Assigned Memory	Uptime	Status
2-A-CVM	Running	1 %	20480 MB	29.19:36:58	

The selected virtual machine has no checkpoints.

2. Click **Next**.



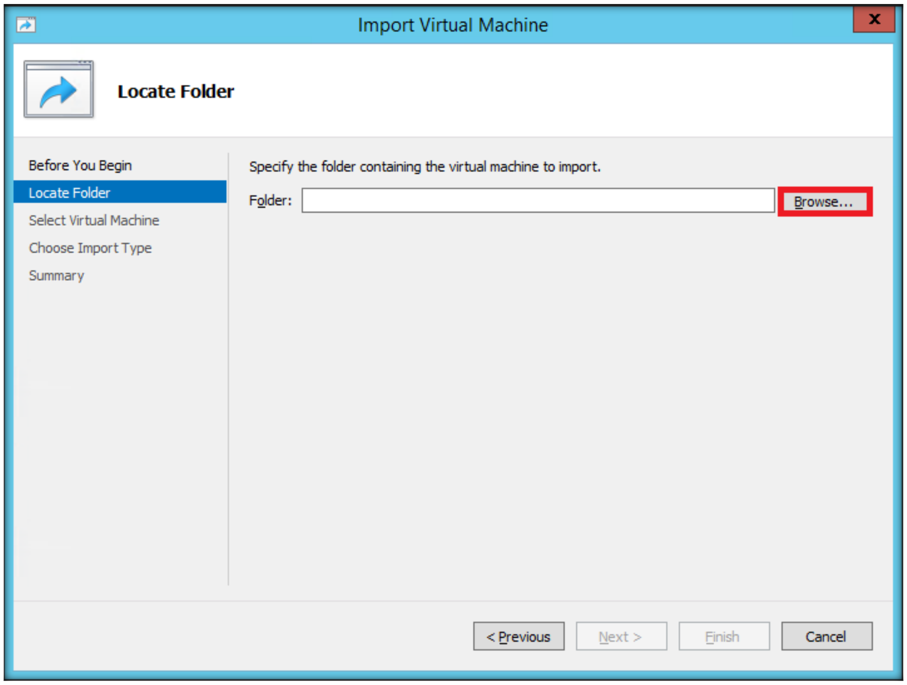
Import Virtual Machine

Before You Begin

This wizard helps you import a virtual machine from a set of configuration files. It guides you through resolving configuration problems to prepare the virtual machine for use on this computer.

□ Do not show this page again

3. Click **Browse** to locate the DPMC VM package.



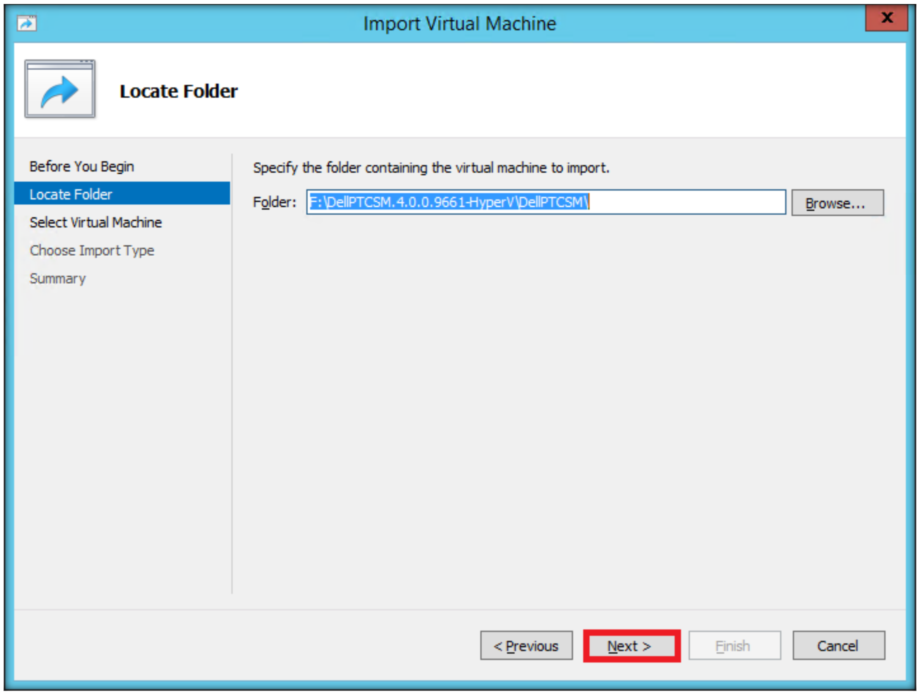
Import Virtual Machine

Locate Folder

Specify the folder containing the virtual machine to import.

Folder:

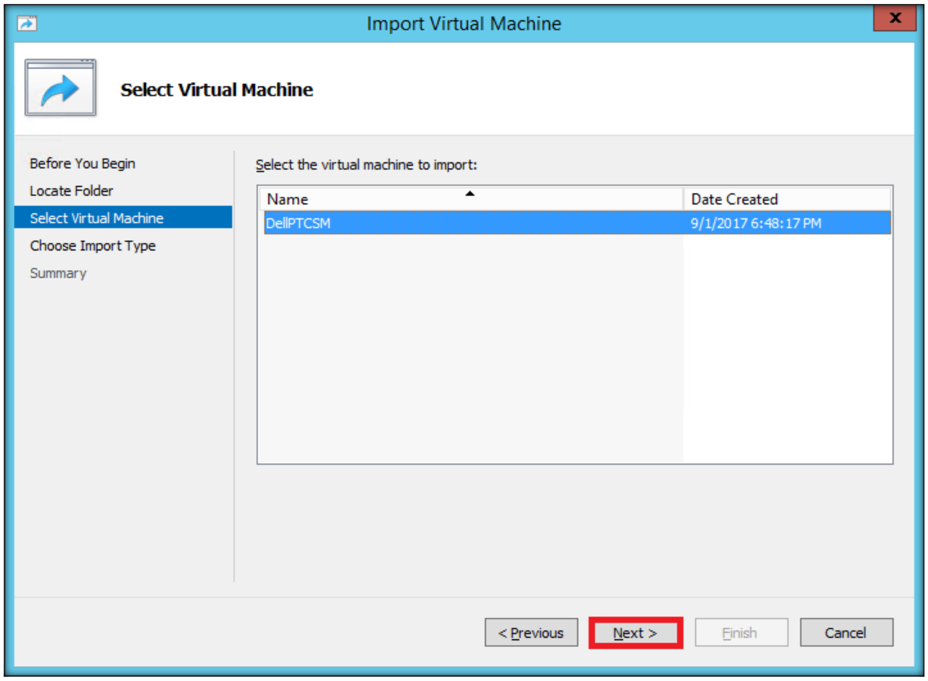
4. After the selected Folder is displayed, click **Next.**



Specify the folder containing the virtual machine to import.

Folder: F:\DellPTCSM.4.0.0.9661-HyperV\DellPTCSM\

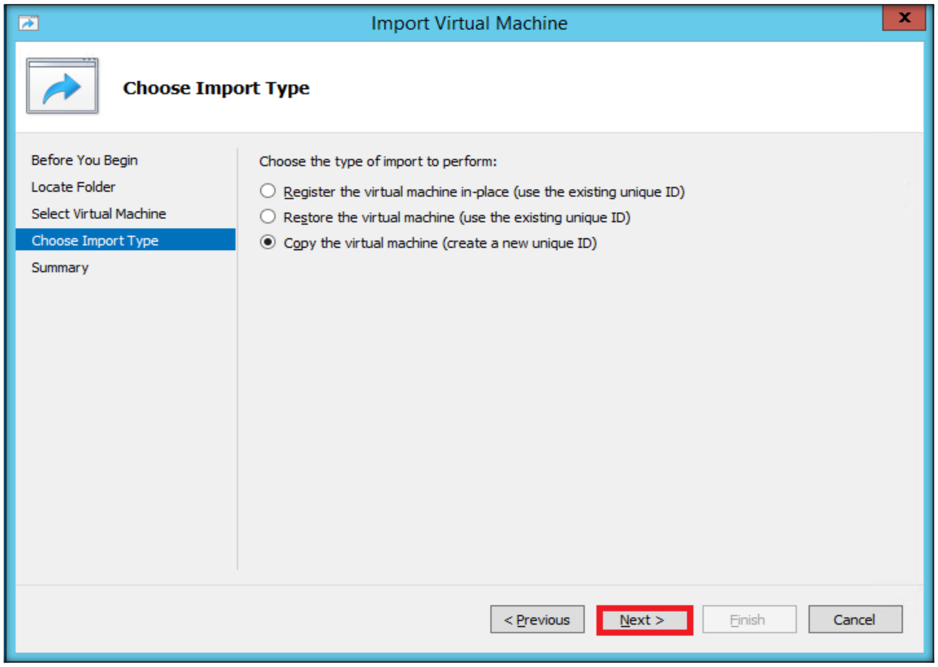
5. Select the virtual machine and then click **Next**.



Select the virtual machine to import:

Name	Date Created
DellPTCSM	9/1/2017 6:48:17 PM

6. Select the import type and then click **Next**.



Import Virtual Machine

Choose Import Type

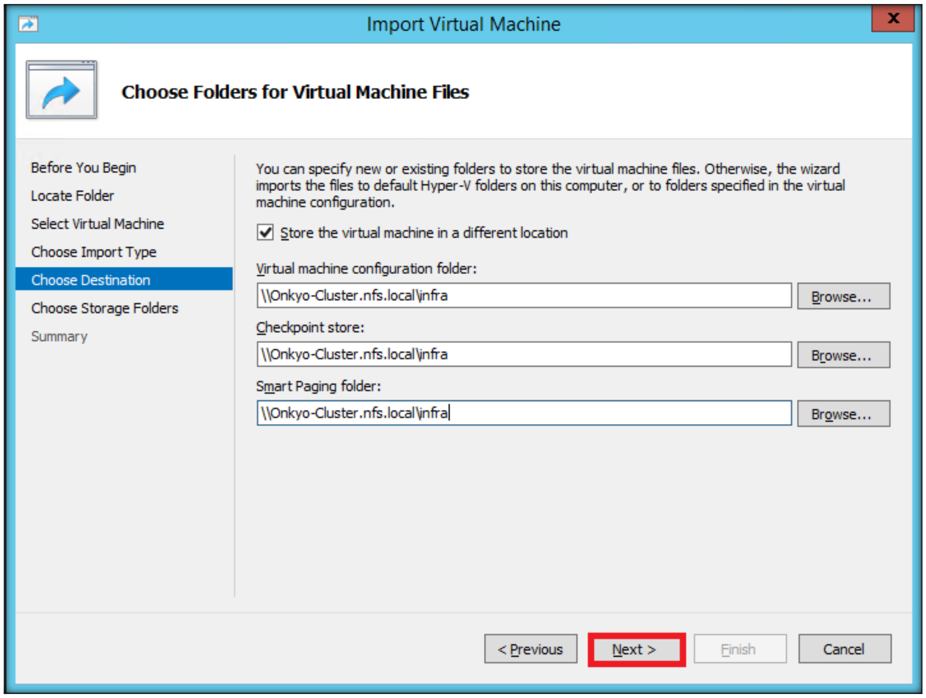
Choose the type of import to perform:

○ Register the virtual machine in-place (use the existing unique ID)
○ Restore the virtual machine (use the existing unique ID)
● Copy the virtual machine (create a new unique ID)

7. Choose the destination for DPMC VM file on the appropriate Nutanix storage container and then click **Next**.

WARNING: Do not select storage shared with Avamar VMs or proxies. Do not select any of the SATADOMs (on XCx30 appliances). You may need to create a new Nutanix storage container if there is not one available.

8. Choose the storage folder for the DPMC VM virtual hard disk and then click **Next**.



Import Virtual Machine

Choose Folders for Virtual Machine Files

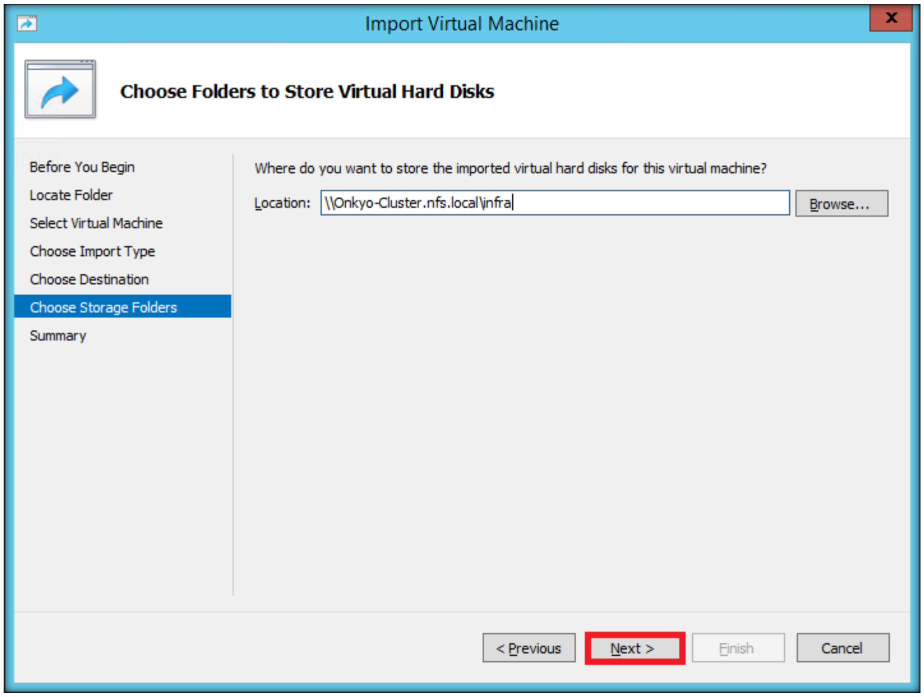
You can specify new or existing folders to store the virtual machine files. Otherwise, the wizard imports the files to default Hyper-V folders on this computer, or to folders specified in the virtual machine configuration.

☑ Store the virtual machine in a different location

Virtual machine configuration folder: \\Onkyo-Cluster.nfs.local\infra

Checkpoint store: \\Onkyo-Cluster.nfs.local\infra

Smart Paging folder: \\Onkyo-Cluster.nfs.local\infra

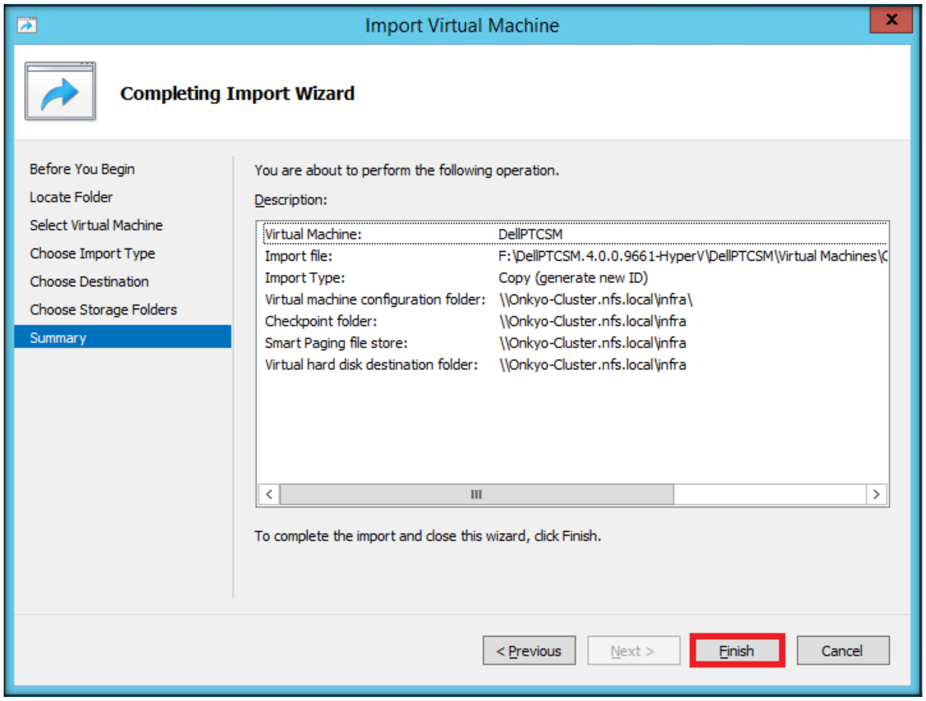


Choose Folders to Store Virtual Hard Disks

Where do you want to store the imported virtual hard disks for this virtual machine?

Location: \\Onkyo-Cluster.nfs.local\infra

9. Review the summary. Click **Previous** to make any necessary changes.
10. To complete the DPMC VM import, click **Finish**.



Completing Import Wizard

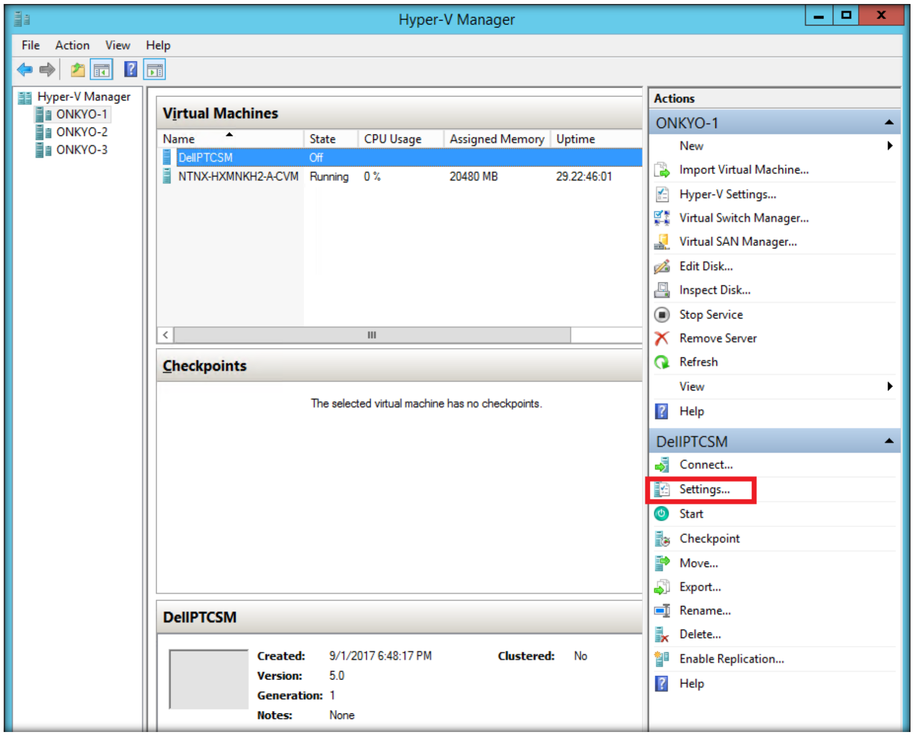
You are about to perform the following operation.

Description:

Virtual Machine:	DellPTCSM
Import file:	F:\DellPTCSM.4.0.0.9661-HyperV\DellPTCSM\Virtual Machines\C
Import Type:	Copy (generate new ID)
Virtual machine configuration folder:	\\Onkyo-Cluster.nfs.local\infra\
Checkpoint folder:	\\Onkyo-Cluster.nfs.local\infra
Smart Paging file store:	\\Onkyo-Cluster.nfs.local\infra
Virtual hard disk destination folder:	\\Onkyo-Cluster.nfs.local\infra

To complete the import and close this wizard, click Finish.

11. From the Hyper-V Manager, select the DPMC VM and go to **Settings**.



Name	State	CPU Usage	Assigned Memory	Uptime
DellPTCSM	Off			
NTNX-HXMNKH2-A-CVM	Running	0 %	20480 MB	29.22:46:01

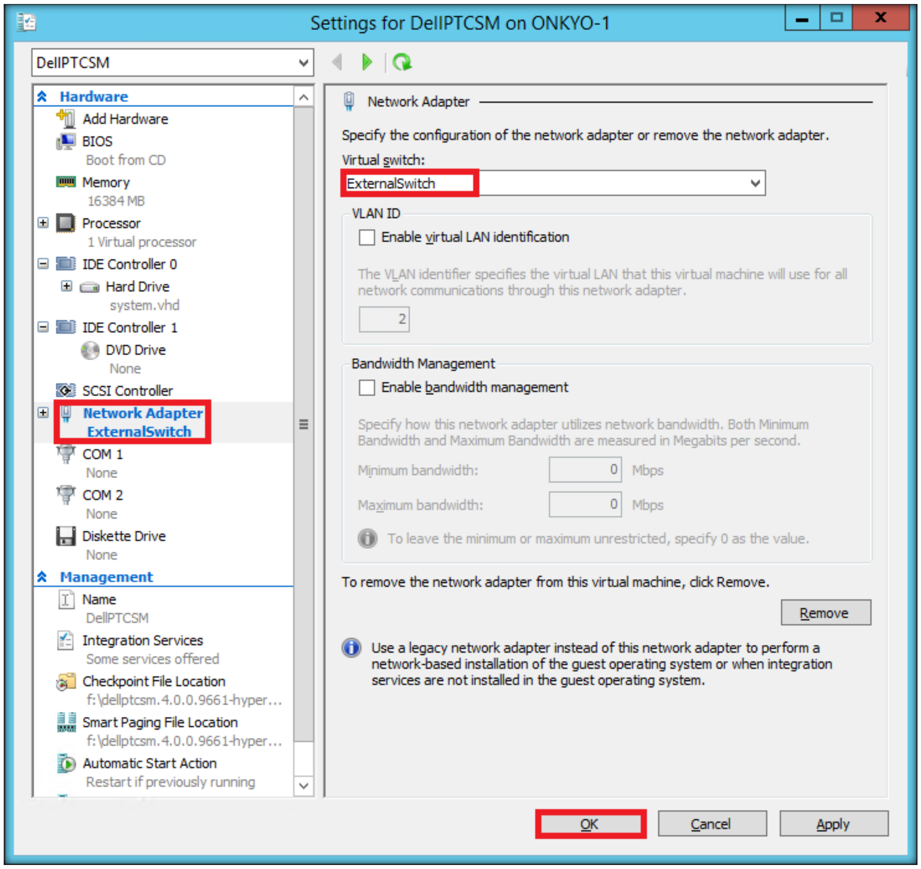
The selected virtual machine has no checkpoints.

Created: 9/1/2017 6:48:17 PM
Clustered: No
Version: 5.0
Generation: 1
Notes: None

12. From the **Virtual switch** drop-down menu, select **ExternalSwitch** to connect the network adapter to an external switch.

NOTE: You can enable a VLAN ID at this time if needed.

13. Click **OK**.



Settings for DellPTCSM on ONKYO-1

DellPTCSM

Hardware
- Add Hardware
- BIOS
  Boot from CD
- Memory
  16384 MB
- Processor
  1 Virtual processor
- IDE Controller 0
  - Hard Drive
    system.vhd
- IDE Controller 1
  - DVD Drive
    None
- SCSI Controller
- Network Adapter
  ExternalSwitch
- COM 1
  None
- COM 2
  None
- Diskette Drive
  None

Management
- Name
  DellPTCSM
- Integration Services
  Some services offered
- Checkpoint File Location
  f:\dellptcsm.4.0.0.9661-hyper...
- Smart Paging File Location
  f:\dellptcsm.4.0.0.9661-hyper...
- Automatic Start Action
  Restart if previously running

Network Adapter

Specify the configuration of the network adapter or remove the network adapter.

Virtual switch:
ExternalSwitch

VLAN ID

□ Enable virtual LAN identification

The VLAN identifier specifies the virtual LAN that this virtual machine will use for all network communications through this network adapter.

2

Bandwidth Management

□ Enable bandwidth management

Specify how this network adapter utilizes network bandwidth. Both Minimum Bandwidth and Maximum Bandwidth are measured in Megabits per second.

Minimum bandwidth: 0 Mbps

Maximum bandwidth: 0 Mbps

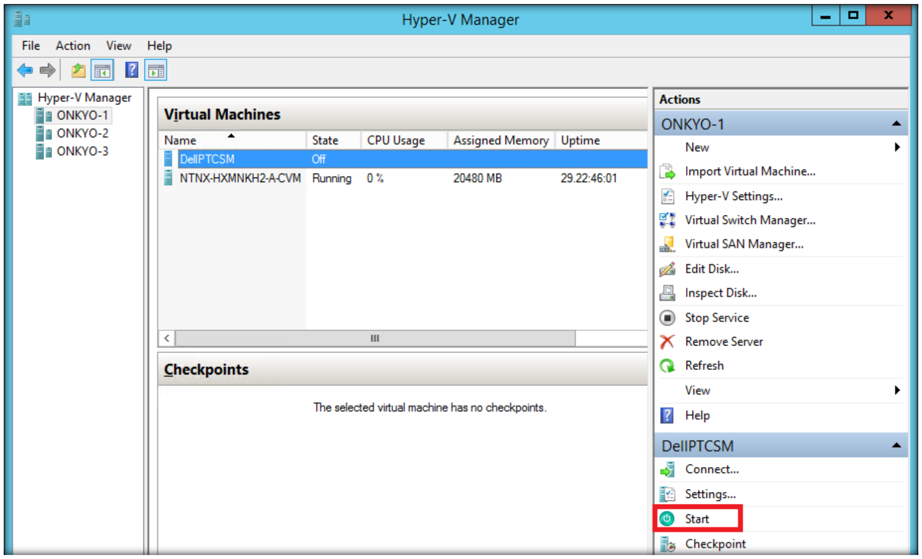
To leave the minimum or maximum unrestricted, specify 0 as the value.

To remove the network adapter from this virtual machine, click Remove.

Remove

Use a legacy network adapter instead of this network adapter to perform a network-based installation of the guest operating system or when integration services are not installed in the guest operating system.

14. To turn on the DPMC VM, in the right pane, click **Start**.



Hyper-V Manager

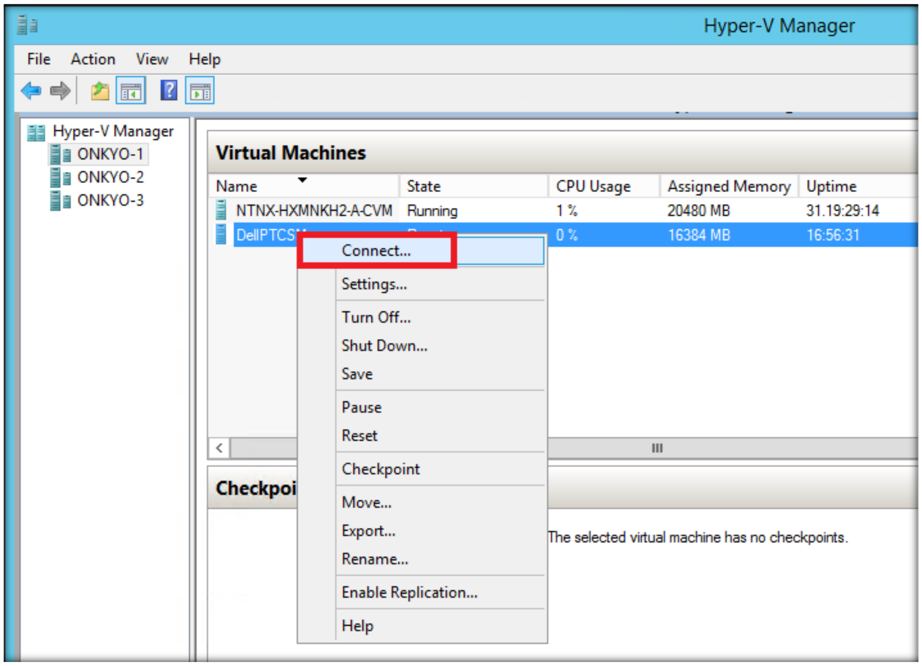
Virtual Machines

Name	State	CPU Usage	Assigned Memory	Uptime
DellPTCSM	Off			
NTNX-HXMNKH2-A-CVM	Running	0 %	20480 MB	29.22:46:01

Checkpoints

The selected virtual machine has no checkpoints.

15. To launch the console, right-click on the newly imported DPMC VM and select **Connect**.

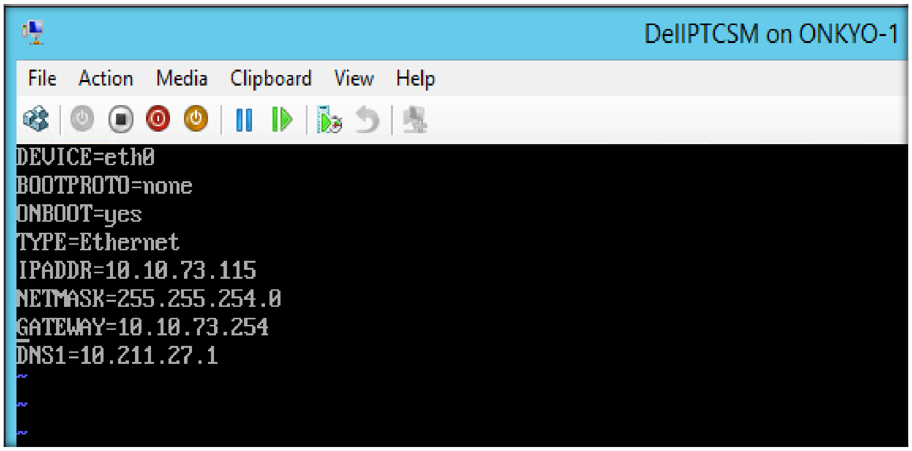


16. In the DPMC VM console, open the configuration file for the first network interface, eth0.

NOTE: For assistance with Hyper-V deployment requiring login to the DPMC filesystem, contact Dell EMC support.

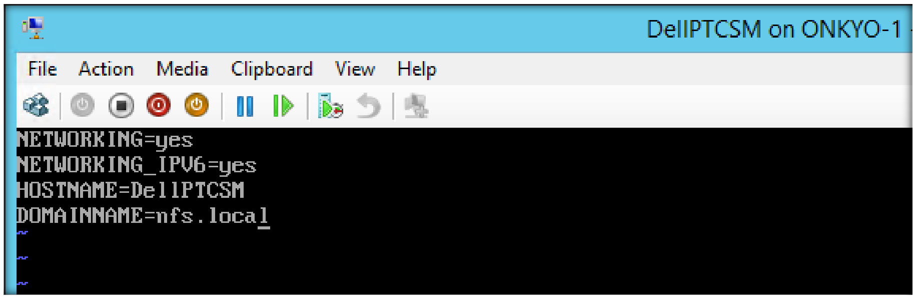
```
sudo vi /etc/sysconfig/network-scripts/ifcfg-eth0
```

17. Edit the network configuration to set static IP address and other network information.



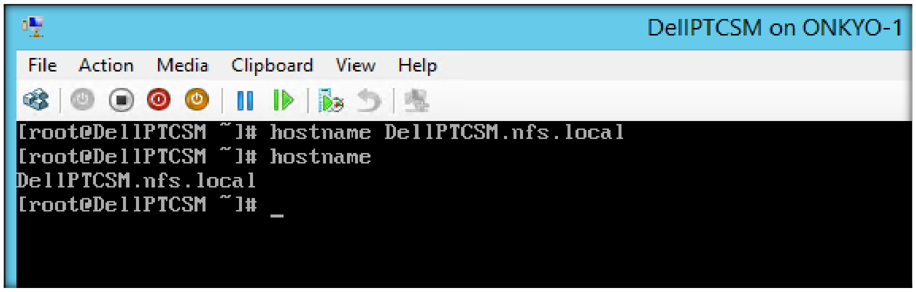
```
DEVICE=eth0
BOOTPROTO=none
ONBOOT=yes
TYPE=Ethernet
IPADDR=10.10.73.115
NETMASK=255.255.254.0
GATEWAY=10.10.73.254
DNS1=10.211.27.1
~
~
~
```

18. Open the server’s **/etc/sysconfig/network** file, modify the **HOSTNAME** and **DOMAINNAME** to match your FQDN and then save the file.



```
NETWORKING=yes
NETWORKING_IPV6=yes
HOSTNAME=DellPTCSM
DOMAINNAME=nfs.local
~
~
~
```

19. Run the hostname command using your FQDN to update the host name.



```
[root@DellPTCSM ~]# hostname DellPTCSM.nfs.local
[root@DellPTCSM ~]# hostname
DellPTCSM.nfs.local
[root@DellPTCSM ~]# _
```

20. To implement the changes, restart the network service:

```
service network restart
```

4 Linking DPMC with Prism Central

DPMC works seamlessly with Prism Central and supports all ESXi and Hyper-V clusters registered with Prism Central (AHV is not supported). You can connect Prism Central after DPMC is powered on.

4.1 Powering on and launching DPMC web interface

To power on and launch the DPMC web interface:

1. Launch the vSphere Client or vSphere Web Client, and then log into the vCenter Server. In Hyper-V, launch the Hyper-V manager.
2. Locate the DPMC VM.
3. Right-click Power>Turn on VM.
4. Open the console window to monitor the power-on process until the power on is completed and no error message is displayed.
5. After DPMC is successfully powered on, launch the DPMC web interface using the Network address provided during the DPMC VM installation.

NOTE: Google Chrome is the only web browser that supports DPMC.

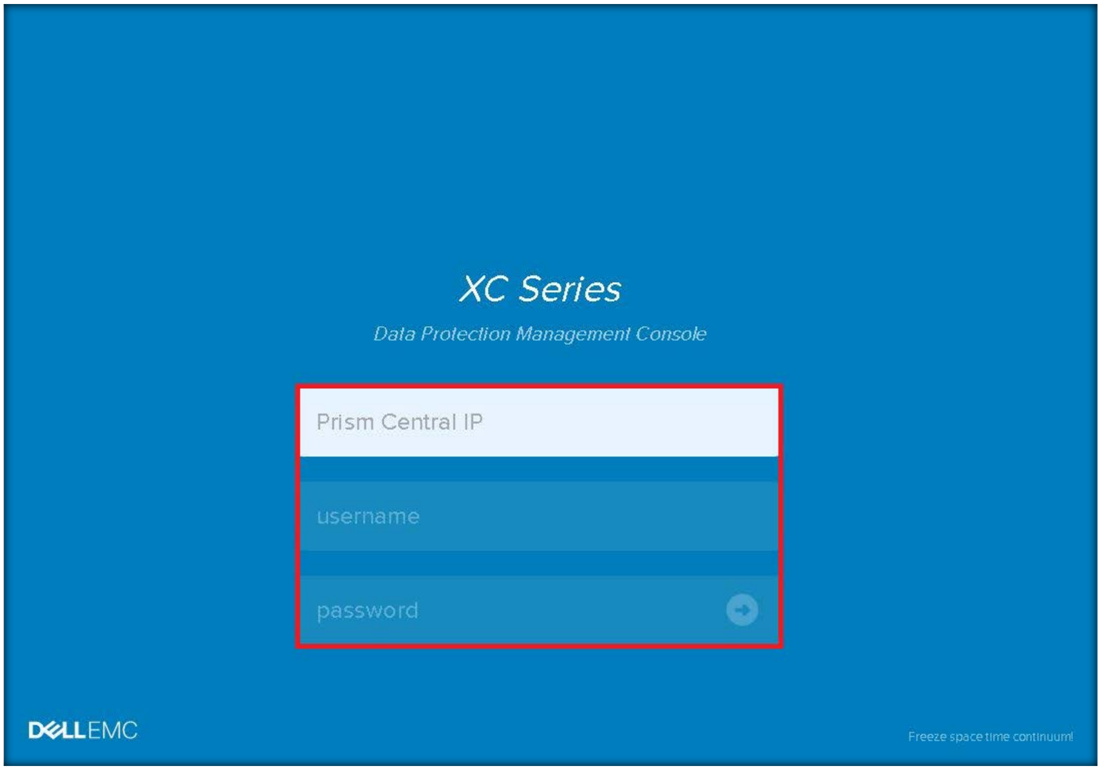
4.2 Connecting with Prism Central

To connect Prism Central with DPMC, you need the Prism Central IP address and credentials. You must access DPMC with a Prism Central local user account with Admin privileges other than the default admin account.

NOTE: After you have registered DPMC with Prism Central, the registration lasts for the lifetime of the DPMC instance and cannot be changed.

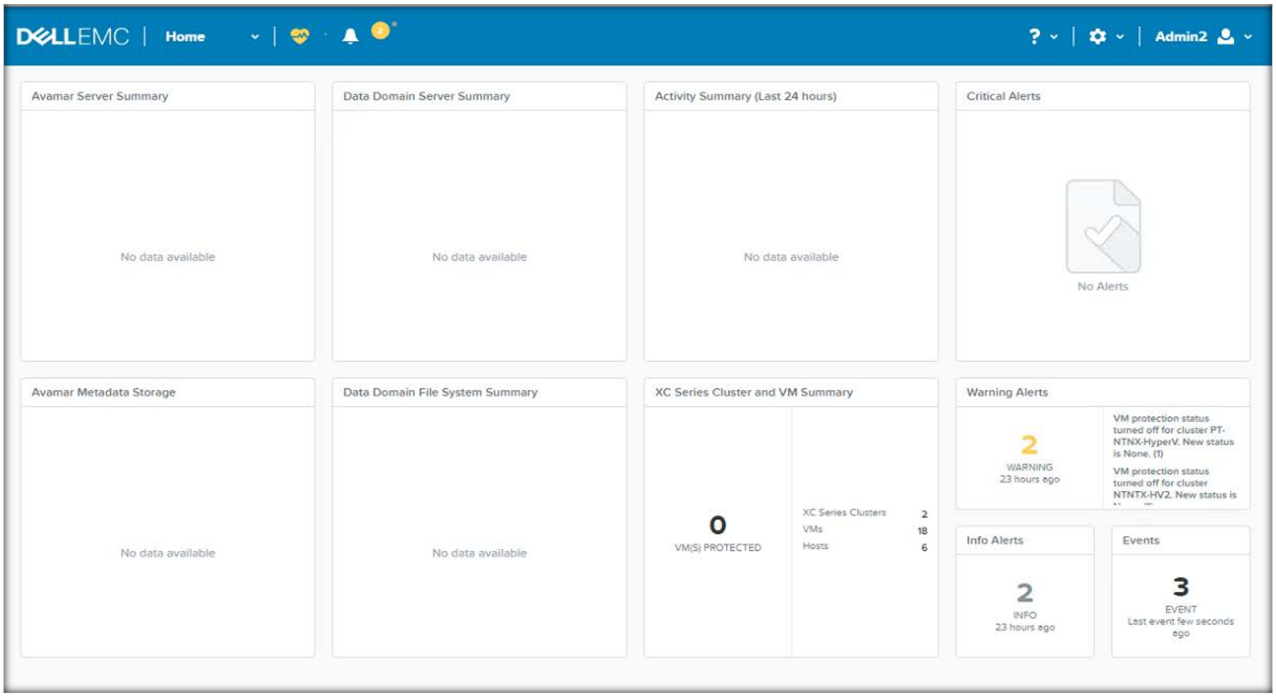
During login, DPMC can also determine the account type (default admin or non-admin) and displays an error if you try to access Prism Central as admin.

1. Use a web browser to connect to the DPMC web interface by entering the IP address assigned to DPMC during deployment.
2. Enter the **Prism Central IP** address, **username** and **password** of Prism Central on the initial page. Click the arrow.


XC Series
Data Protection Management Console
Prism Central IP
username
password
DELLEMC
Freeze space time continuum!

NOTE: This step associates DPMC with Prism Central for the life of the DPMC instance, which cannot be changed.

3. After DPMC is successfully connected to Prism Central, the DPMC home page is displayed.



VM protection status turned off for cluster PT-NTNX-HyperV. New status is None. (1)

VM protection status turned off for cluster NTNTX-HV2. New status is

NOTE: The home page displays *No data available* because no association to Avamar has been completed for the Avamar Server.

5 Association of Avamar with DPMC Virtual Machine

To associate an Avamar Virtual Edition (AVE) instance with DPMC, you need a web browser to connect to the DPMC web interface.

The blank frames, displayed above, are intended to be populated with the AVE and Data Domain information. To allow DPMC to populate these frames, deploy AVE and associate it with DPMC.

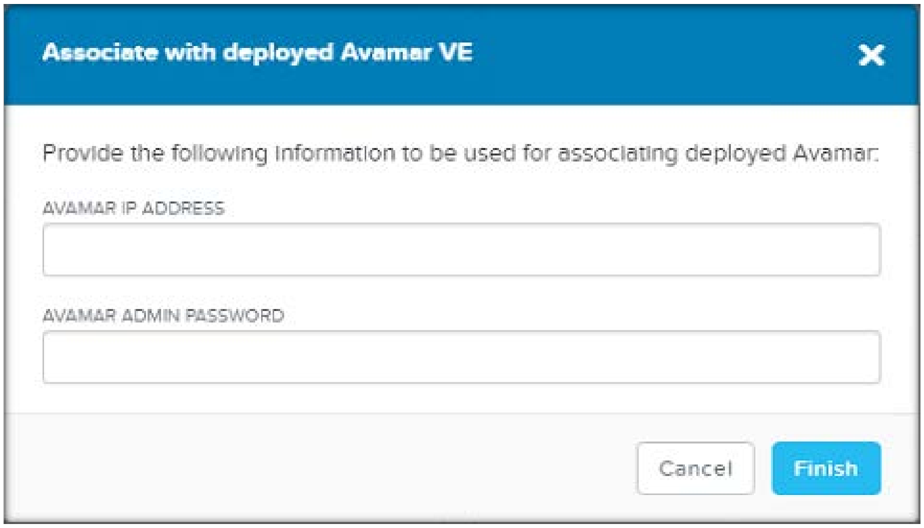
1. From the **Settings** (gear tool) drop-down menu, select **Associate with Deployed Avamar VE**.

NOTE: Consult the Avamar documentation for the deployment of the AVE VM and associating AVE with Data Domain.

2. From the pop-up screen, enter the following information:

Field	Description
AVAMAR IP ADDRESS	The IP address of the AVE VM.
AVAMAR ADMIN PASSWORD	The password for the *admin* user in AVE.

3. Click **Finish**.



Associate with deployed Avamar VE

Provide the following information to be used for associating deployed Avamar:

AVAMAR IP ADDRESS

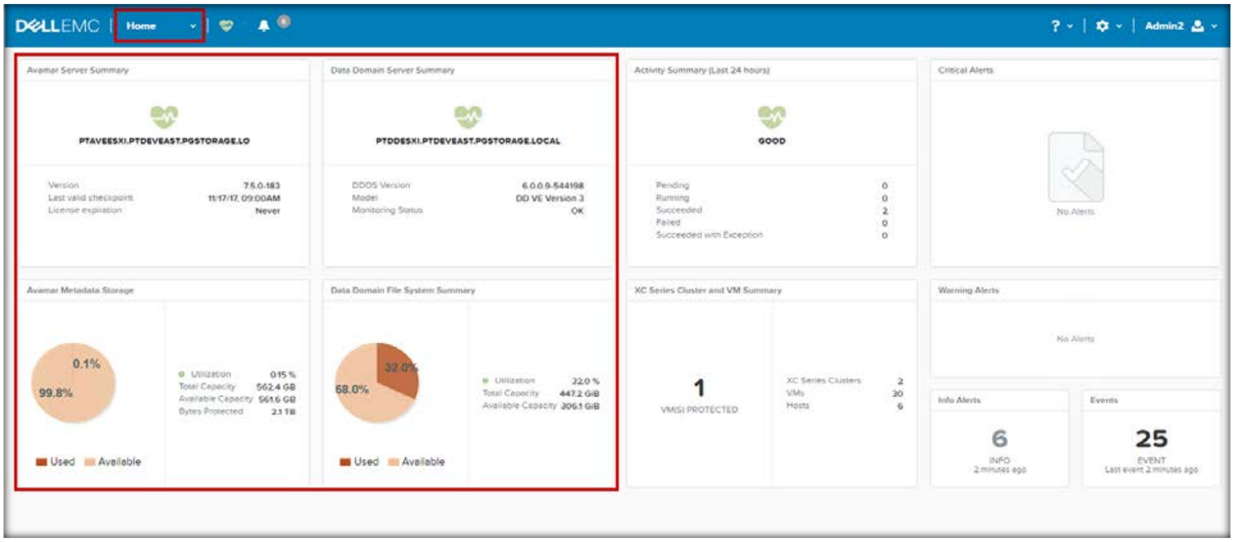
AVAMAR ADMIN PASSWORD

After DPMC successfully connects to AVE, the system populates the frames on the DPMC Home page with AVE and Data Domain information. All Avamar server information is updated by DPMC and is gathered every 15 minutes.

The following table specifies the information provided on the DPMC Home page with AVE and Data Domain information:

Table 1 DPMC home page with AVE and Data Domain information

Widget	Information Provided
Avamar Server Summary	Avamar Health Avamar Host Name Avamar Version Last Validated Checkpoint License Expiration
Data Domain Server Summary	Data Domain Host Name Data Domain Health Data Domain OS Version Data Domain System Name Monitoring Status
Avamar Metadata Storage	Utilization Total capacity of the AVE meta data storage Available capacity of the AVE meta data storage Bytes Protected by AVE
Data Domain File System Summary	Utilization Total capacity of the Data Domain file system storage Available capacity of the Data Domain storage



PTAVEESXI.PTDEVEAST.PGSTORAGE.LO

Version	7.5.0.183
Last valid checkpoint	11/17/17, 09:00AM
License expiration	Never

PTDDESXI.PTDEVEAST.PGSTORAGE.LOCAL

DDOS Version	6.0.0.9-544198
Model	DD VE Version 3
Monitoring Status	OK

GOOD

Pending	0
Running	0
Succeeded	2
Failed	0
Succeeded with Exception	0

No Alerts

Utilization	0.15 %
Total Capacity	562.4 GB
Available Capacity	561.6 GB
Bytes Protected	2.1 TB

Utilization	32.0 %
Total Capacity	447.2 GiB
Available Capacity	306.1 GiB

1
VM(S) PROTECTED

XC Series Clusters	2
VMs	30
Hosts	6

No Alerts

6
INFO
2 minutes ago

25
EVENT
Last event 2 minutes ago

Figure 3 DPMC Home page with AVE and Data Domain information

6 DPMC web interface menu overview

The following sections describe the user interface.

6.1 Home page

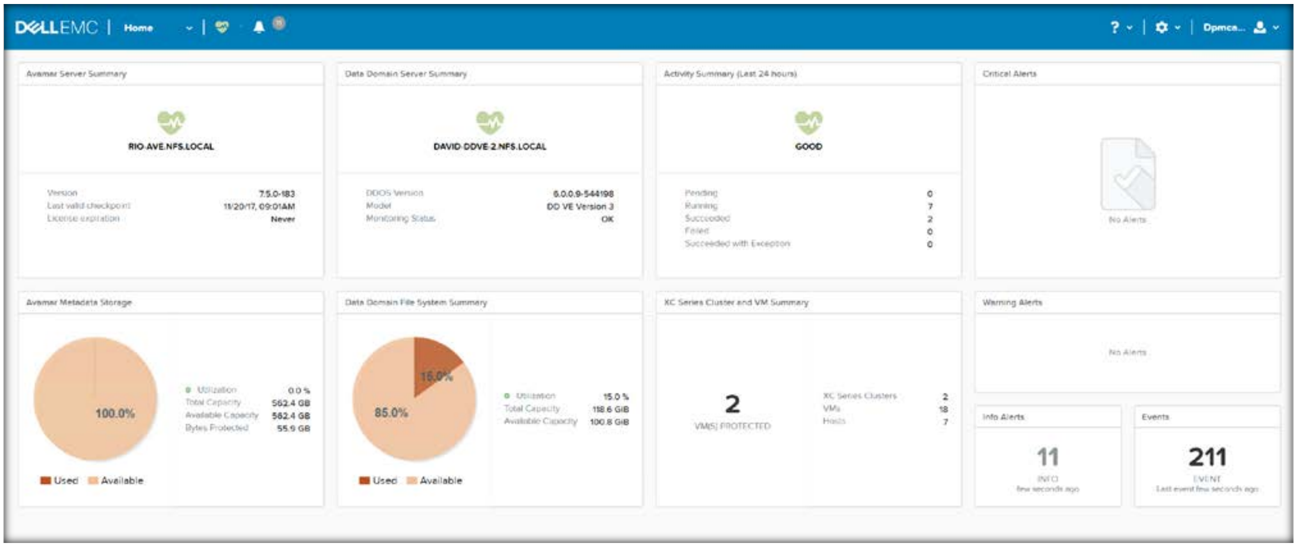
The home page is the main dashboard providing an overall summary of important information in the form of widgets and menu items.

The home page is the default page that is displayed after logging into the system. The home page is always accessible from other pages by clicking on the Dell EMC logo on the management toolbar.

6.2 Home page widgets

The home page has widgets that serve as the main information window for the customer. The following widgets are displayed on the home page:

- Avamar Server Summary
- Avamar Metadata Storage
- Data Domain Server Summary
- Data Domain File System Summary
- Activity Summary (Last 24 hours)
- XC Series Cluster and VM Summary
- Critical Alerts
- Warning Alerts
- Info Alerts
- Events



Avamar Server Summary

RIO.AVE.NFS.LOCAL

Version	7.5.0-183
Last valid checkpoint	11/20/17, 09:01AM
License expiration	Never

Data Domain Server Summary

DAVID-DDVE-2.NFS.LOCAL

DDOS Version	6.0.0.9-544198
Model	DD VE Version 3
Monitoring Status	OK

Activity Summary (Last 24 hours)

GOOD

Pending	0
Running	7
Succeeded	2
Failed	0
Succeeded with Exception	0

Critical Alerts

No Alerts

Avamar Metadata Storage

Utilization	0.0 %
Total Capacity	562.4 GB
Available Capacity	562.4 GB
Bytes Protected	55.9 GB

Data Domain File System Summary

Utilization	15.0 %
Total Capacity	118.6 GiB
Available Capacity	100.8 GiB

XC Series Cluster and VM Summary

2
VM(S) PROTECTED

XC Series Clusters	2
VMs	18
Hosts	7

Warning Alerts

No Alerts

Info Alerts

11
INFO
few seconds ago

Events

211
EVENT
Last event few seconds ago

Figure 4 Home page displaying the widgets

6.3 Home page menu items

The home page also has a drop-down menu of items available. The home page menu items are always available from the top of all pages.

Table 2 Home page menu items

Menu item	Description
Home	Links to Home page and additional options
Alerts	Links to additional menu of system alerts
Help	Links to Help menu items
Settings (gear tool)	Links to Setting options
Admin	Links to administrative submenu items

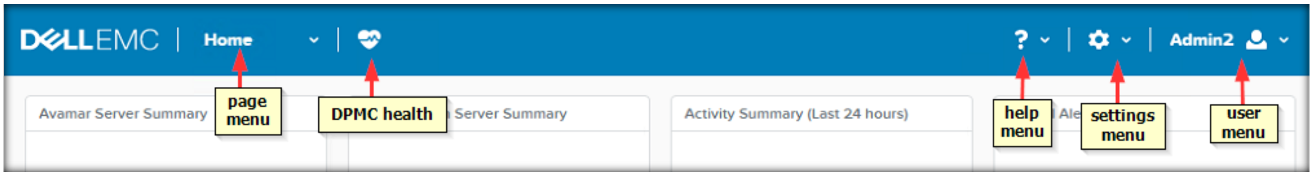


Figure 5 Home page menu items

6.3.1 Menu from Home drop-down

The Home drop-down menu displays the following options:

Table 3

Menu Item	Description
Home	Links to Home page.
VM	View and interact with VMs registered to Prism Central and managed by DPMC.
Cluster	View and interact with XC clusters registered to Prism Central and managed by DPMC.
Alerts	View and interact with alerts displayed by the application.

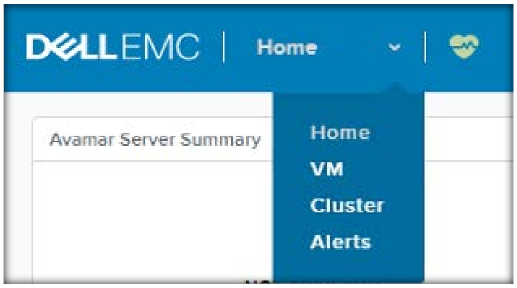


Figure 6 Home drop-down menu

6.3.1.1 Home submenu

The Home submenu item links you to the home page.

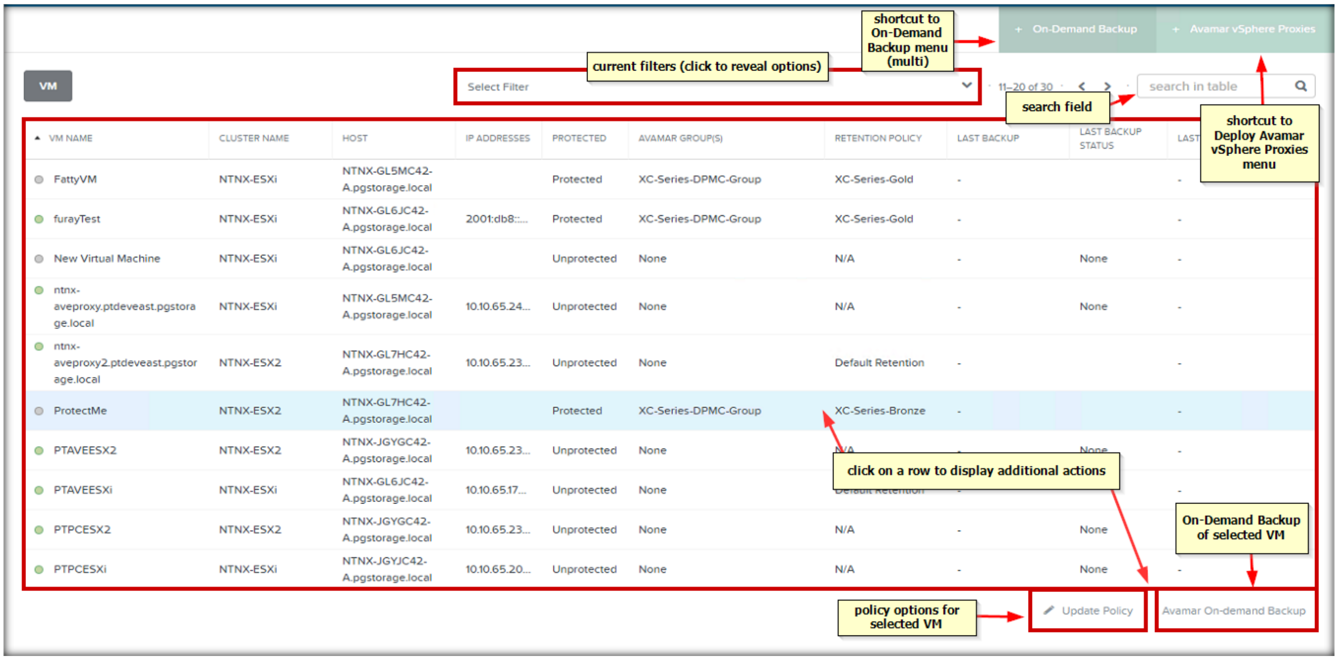
6.3.1.2 VM submenu

The VM submenu item links you to the page where you can view and interact with the VMs that are managed by the application. It contains a sortable table of VMs and other menu items.

The following table is a list of items for the VMs. The VM table is sortable and filtered by one or all of the following:

Table 4 VM submenu items

Sortable item	Description
VM Name	Displays the VMs that are in XC cluster and managed by Prism Central.
Cluster Name	Displays the name of the cluster for the corresponding VMs.
Host	Displays the name of the Host that holds the corresponding VM.
IP Address	Displays IP address of the VM.
Backup protection status	Displays Protected or Unprotected status. A VM is determined to be Protected if it is a member of an active Avamar backup group or contains a successful backup less than 72 hours old.
Avamar Group	Displays all Avamar backup groups that a VM is a member of.
Retention Policy	Displays retention policy of the VMs.
Last backup (Date)	Displays the last date of backup associated with the VM.
Last backup status	Displays the latest backup status.
Last successful backup	Displays the last successful backup.

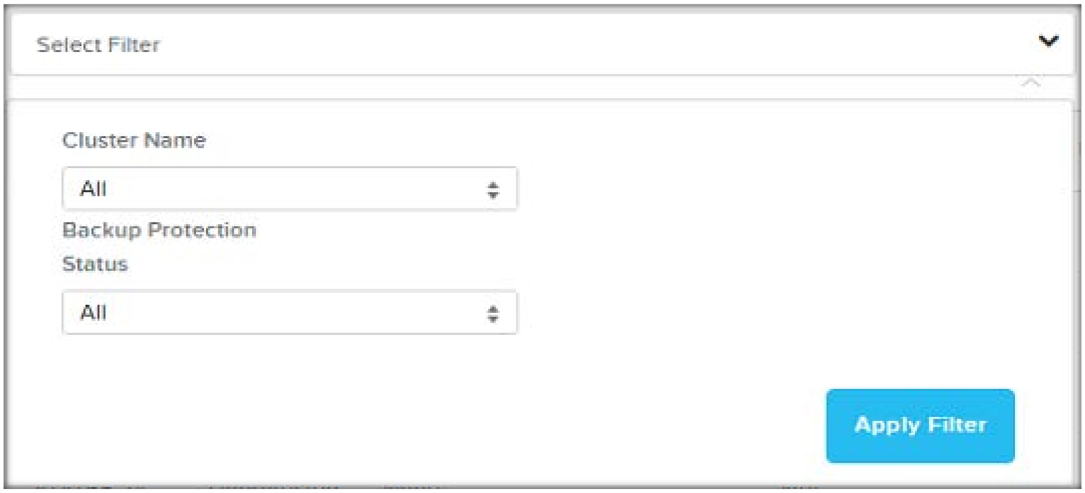


VM
Select Filter
11–20 of 30
search in table
+ On-Demand Backup
+ Avamar vSphere Proxies
Update Policy
Avamar On-demand Backup
shortcut to On-Demand Backup menu (multi)
current filters (click to reveal options)
search field
shortcut to Deploy Avamar vSphere Proxies menu
click on a row to display additional actions
On-Demand Backup of selected VM
policy options for selected VM

VM NAME	CLUSTER NAME	HOST	IP ADDRESSES	PROTECTED	AVAMAR GROUP(S)	RETENTION POLICY	LAST BACKUP	LAST BACKUP STATUS	LAST
FattyVM	NTNX-ESXi	NTNX-GL5MC42-A.pgstorage.local		Protected	XC-Series-DPMC-Group	XC-Series-Gold	-		-
furayTest	NTNX-ESXi	NTNX-GL6JC42-A.pgstorage.local	2001:db8::...	Protected	XC-Series-DPMC-Group	XC-Series-Gold	-		-
New Virtual Machine	NTNX-ESXi	NTNX-GL6JC42-A.pgstorage.local		Unprotected	None	N/A	-	None	-
ntnx-aveproxy.ptdeveast.pgstorage.local	NTNX-ESXi	NTNX-GL5MC42-A.pgstorage.local	10.10.65.24...	Unprotected	None	N/A	-	None	-
ntnx-aveproxy2.ptdeveast.pgstorage.local	NTNX-ESX2	NTNX-GL7HC42-A.pgstorage.local	10.10.65.23...	Unprotected	None	Default Retention	-		-
ProtectMe	NTNX-ESX2	NTNX-GL7HC42-A.pgstorage.local		Protected	XC-Series-DPMC-Group	XC-Series-Bronze	-		-
PTAVEESX2	NTNX-ESX2	NTNX-JGYGC42-A.pgstorage.local	10.10.65.23...	Unprotected	None	N/A	-	None	-
PTAVEESXi	NTNX-ESXi	NTNX-GL6JC42-A.pgstorage.local	10.10.65.17...	Unprotected	None	Default Retention	-		-
PTPCESX2	NTNX-ESX2	NTNX-JGYGC42-A.pgstorage.local	10.10.65.23...	Unprotected	None	N/A	-	None	-
PTPCESXi	NTNX-ESXi	NTNX-JGYJC42-A.pgstorage.local	10.10.65.20...	Unprotected	None	N/A	-	None	-

Figure 7 VM page

By using the **Select Filter** drop-down, you can select a filter to sort the VMs by **Cluster Name** and **Backup protection**.



Cluster Name: All

Backup Protection Status: All

Figure 8 Select Filter

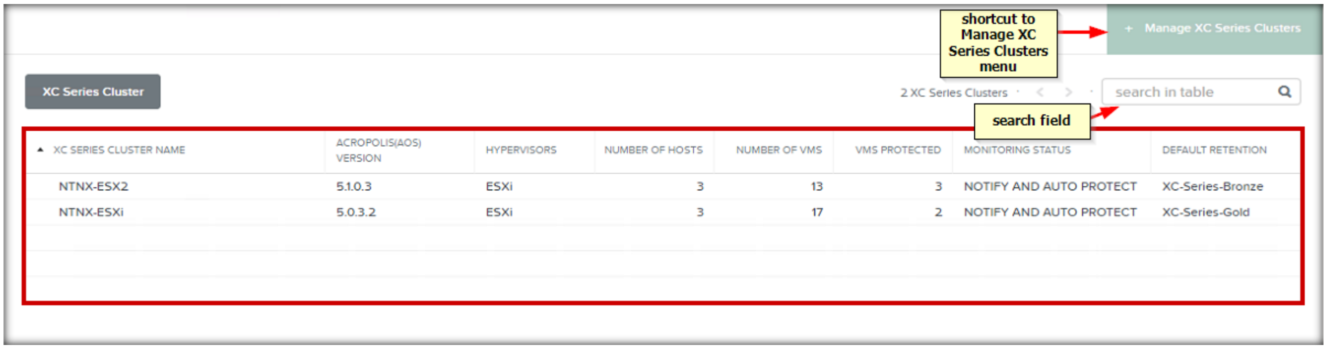
6.3.1.3 Cluster submenu

The cluster submenu is a drop-down item in the management toolbar where you can view and interact with the XC clusters that are registered to Prism Central and managed by DPMC.

The Cluster page contains a sortable table of clusters, which may be filtered by one or all of the following:

Table 5 Cluster submenu items

Item	Description
XC Series Cluster Name	The name of the cluster that are managed by Prism Central.
Acropolis (AOS) version	Nutanix operating system for corresponding cluster.
Hypervisors	Cluster hypervisor.
Number of Hosts	Number of nodes for the corresponding cluster.
Number of VMs	The total number of VMs on the cluster.
VMs Protected	Number of VMs that are protected from the cluster.
Monitoring status	Configuration to be done when a new VM is added to the cluster.
Default retention	Default retention policy chosen for the cluster.


shortcut to Manage XC Series Clusters menu
+ Manage XC Series Clusters
XC Series Cluster
2 XC Series Clusters
search in table
search field

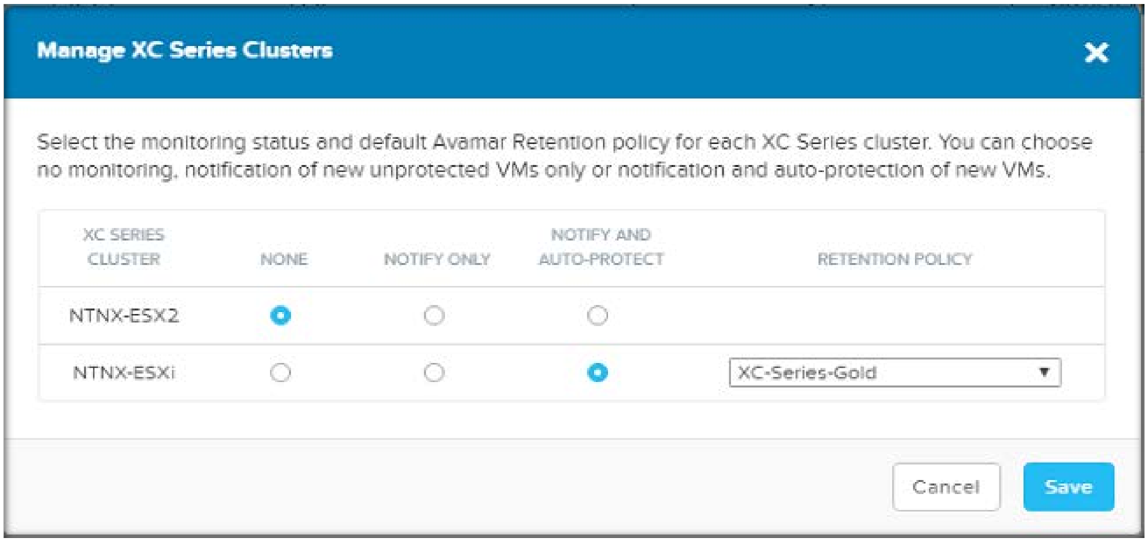
▲ XC SERIES CLUSTER NAME	ACROPOLIS(AOS) VERSION	HYPERVISORS	NUMBER OF HOSTS	NUMBER OF VMS	VMS PROTECTED	MONITORING STATUS	DEFAULT RETENTION
NTNX-ESX2	5.1.0.3	ESXi	3	13	3	NOTIFY AND AUTO PROTECT	XC-Series-Bronze
NTNX-ESXi	5.0.3.2	ESXi	3	17	2	NOTIFY AND AUTO PROTECT	XC-Series-Gold

Figure 9 XC Series Cluster page

NOTE: You can search the cluster table for any text from the Search the Table field.

The Cluster page provides the option of configuring the action to perform when a new VM is detected on the cluster. You can choose from the following options:

Item	Description
NONE	No automated action is taken by DPMC. Manual configuration and protection may still be configured.
NOTIFY ONLY	DPMC provides alerts for new VMs detected in the DPMC Alerts page but does not perform any action on the VMs. Manual configuration and protection may still be configured.
NOTIFY AND AUTO-PROTECT	DPMC automatically protects new VMs on the cluster with the default retention policy selected for the cluster and provides an alert for the action taken.
RETENTION POLICY	The default retention policy for a cluster selected from all available retention policies in Avamar. This policy is used to protect VMs when auto-protection is enabled on the cluster.



Select the monitoring status and default Avamar Retention policy for each XC Series cluster. You can choose no monitoring, notification of new unprotected VMs only or notification and auto-protection of new VMs.

XC SERIES CLUSTER	NONE	NOTIFY ONLY	NOTIFY AND AUTO-PROTECT	RETENTION POLICY
NTNX-ESX2	●	○	○	
NTNX-ESXi	○	○	●	XC-Series-Gold ▼

Figure 10 Manage Nutanix Clusters

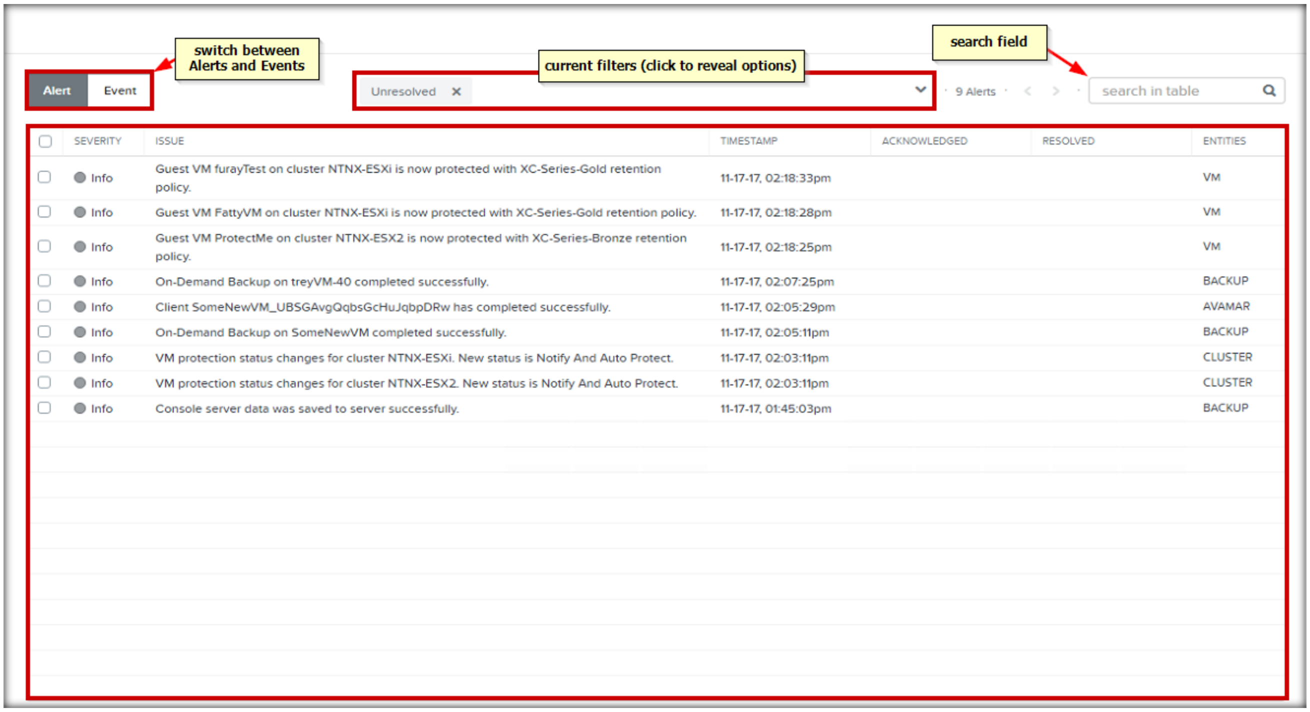
6.3.1.4 Alerts submenu

The **Alerts** submenu item is where you can view and interact with alerts displayed by the application.

The **Alerts** page contains a sortable table, which may be filtered by one or all of the following:

Table 6 Alerts submenu items

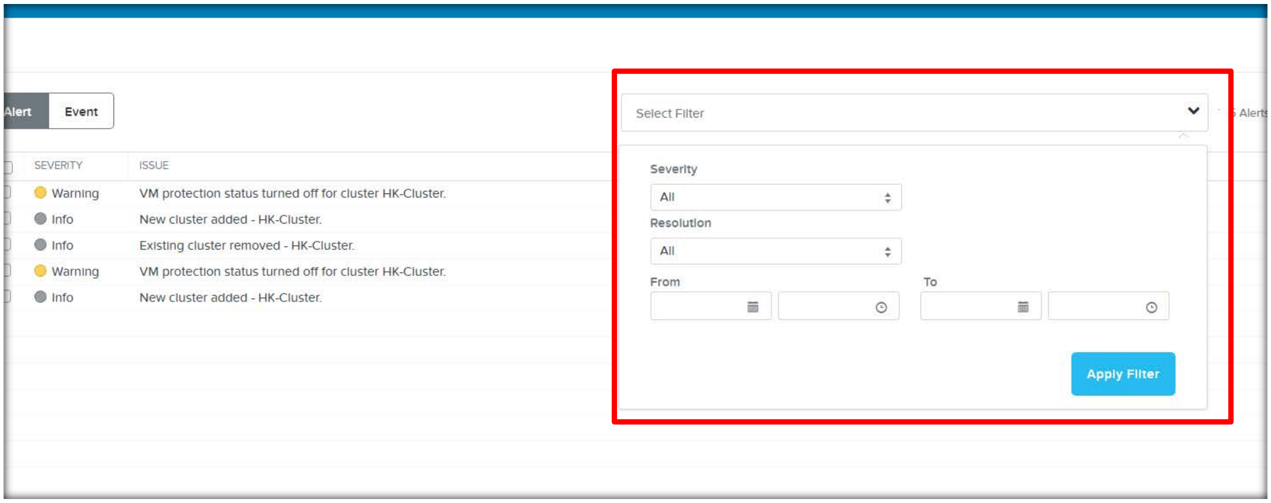
Item	Description
Severity (Info, Warning, Critical)	Severity level.
Issue	Short description of the reason for the alert.
Time Stamp	Date/time the alert was generated.
Acknowledged	User and date/time it has been marked acknowledged or unacknowledged.
Resolved	User and date/time it has been marked resolved or unresolved.
Entities	Entity generating the alert.


switch between Alerts and Events
current filters (click to reveal options)
search field
Alert
Event
Unresolved ✕
9 Alerts
search in table

□	SEVERITY	ISSUE	TIMESTAMP	ACKNOWLEDGED	RESOLVED	ENTITIES
□	● Info	Guest VM furayTest on cluster NTNX-ESXi is now protected with XC-Series-Gold retention policy.	11-17-17, 02:18:33pm			VM
□	● Info	Guest VM FattyVM on cluster NTNX-ESXi is now protected with XC-Series-Gold retention policy.	11-17-17, 02:18:28pm			VM
□	● Info	Guest VM ProtectMe on cluster NTNX-ESX2 is now protected with XC-Series-Bronze retention policy.	11-17-17, 02:18:25pm			VM
□	● Info	On-Demand Backup on treyVM-40 completed successfully.	11-17-17, 02:07:25pm			BACKUP
□	● Info	Client SomeNewVM_UBSGAvgQqbsGcHuJqbpDRw has completed successfully.	11-17-17, 02:05:29pm			AVAMAR
□	● Info	On-Demand Backup on SomeNewVM completed successfully.	11-17-17, 02:05:11pm			BACKUP
□	● Info	VM protection status changes for cluster NTNX-ESXi. New status is Notify And Auto Protect.	11-17-17, 02:03:11pm			CLUSTER
□	● Info	VM protection status changes for cluster NTNX-ESX2. New status is Notify And Auto Protect.	11-17-17, 02:03:11pm			CLUSTER
□	● Info	Console server data was saved to server successfully.	11-17-17, 01:45:03pm			BACKUP

Figure 11 Alerts page

The **Select Filter** option lets you sort alerts by severity and resolution. It also displays alerts based on timeline. You can select alerts within a specific time frame for a particular severity and the resolution status.



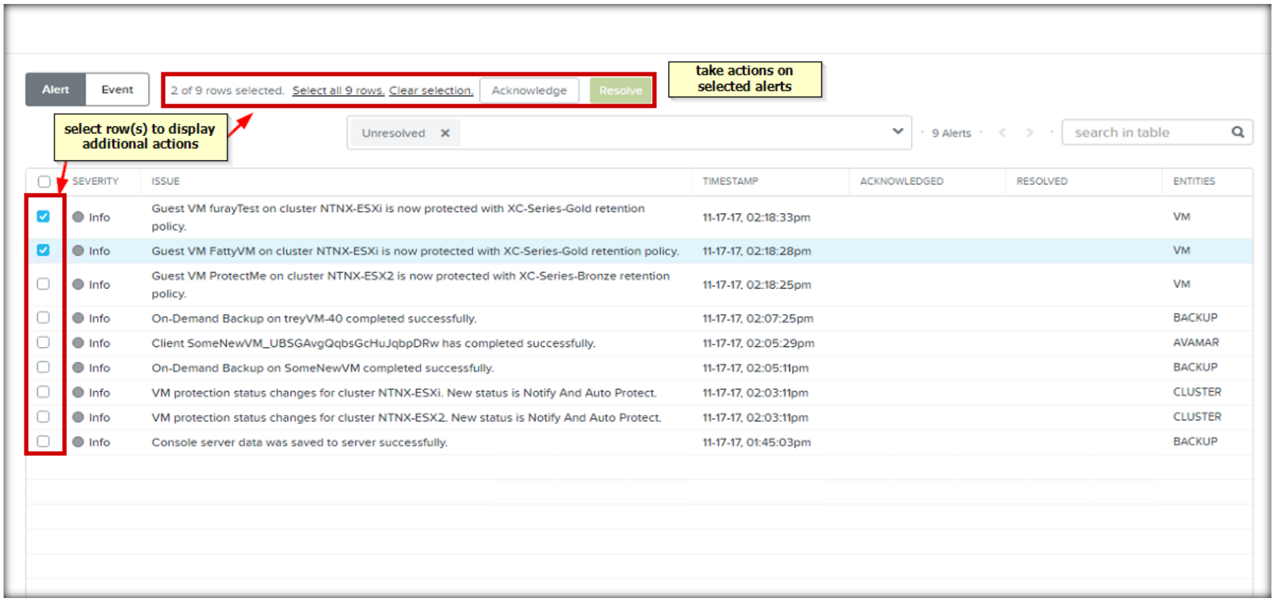
	SEVERITY	ISSUE
□	● Warning	VM protection status turned off for cluster HK-Cluster.
□	● Info	New cluster added - HK-Cluster.
□	● Info	Existing cluster removed - HK-Cluster.
□	● Warning	VM protection status turned off for cluster HK-Cluster.
□	● Info	New cluster added - HK-Cluster.

Figure 12 Select filter on Alerts page

When alert(s) are selected in the alerts table, you have the option to **Acknowledge** or **Resolve** the selected alerts.

Alert	Description
Acknowledge	Updates the acknowledge status of the alert with the date/time and user who performed the action
Resolve	Updates the resolve status of the alert with the date/time and User who performed the action.

You also have an option to perform the same action on all alerts or clear the selection.


Alert
Event
2 of 9 rows selected. Select all 9 rows. Clear selection.
Acknowledge
Resolve
take actions on selected alerts
select row(s) to display additional actions
Unresolved ✕
9 Alerts
search in table

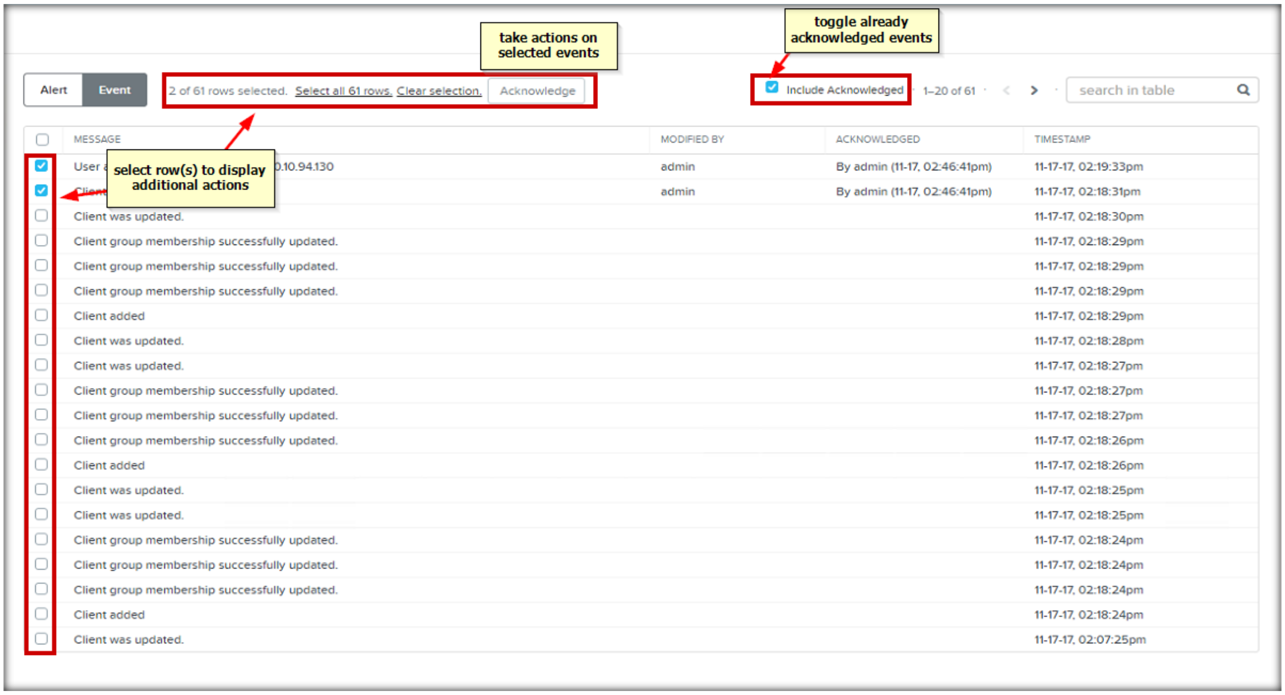
□	SEVERITY	ISSUE	TIMESTAMP	ACKNOWLEDGED	RESOLVED	ENTITIES
☑	● Info	Guest VM furayTest on cluster NTNX-ESXi is now protected with XC-Series-Gold retention policy.	11-17-17, 02:18:33pm			VM
☑	● Info	Guest VM FattyVM on cluster NTNX-ESXi is now protected with XC-Series-Gold retention policy.	11-17-17, 02:18:28pm			VM
□	● Info	Guest VM ProtectMe on cluster NTNX-ESX2 is now protected with XC-Series-Bronze retention policy.	11-17-17, 02:18:25pm			VM
□	● Info	On-Demand Backup on treyVM-40 completed successfully.	11-17-17, 02:07:25pm			BACKUP
□	● Info	Client SomeNewVM_UBSGAvgQqbsGcHuJqbpDRw has completed successfully.	11-17-17, 02:05:29pm			AVAMAR
□	● Info	On-Demand Backup on SomeNewVM completed successfully.	11-17-17, 02:05:11pm			BACKUP
□	● Info	VM protection status changes for cluster NTNX-ESXi. New status is Notify And Auto Protect.	11-17-17, 02:03:11pm			CLUSTER
□	● Info	VM protection status changes for cluster NTNX-ESX2. New status is Notify And Auto Protect.	11-17-17, 02:03:11pm			CLUSTER
□	● Info	Console server data was saved to server successfully.	11-17-17, 01:45:03pm			BACKUP

Figure 13 Acknowledge and Resolve on the Alerts page

The second tab on this page is for events. The **Event** page contains a sortable table that you can filter by one or all of the following:

Table 7 Event page items

Item	Description
Message	Description of the event
Modified by	Entity that generated the event
Acknowledged	Acknowledgment status
Time Stamped	Time the event occurred


take actions on selected events
toggle already acknowledged events
select row(s) to display additional actions
Alert
Event
Acknowledge
☑ Include Acknowledged
1–20 of 61
‹ ›
search in table

2 of 61 rows selected. Select all 61 rows. Clear selection.

□	MESSAGE	MODIFIED BY	ACKNOWLEDGED	TIMESTAMP
☑	User [illegible] 0.10.94.130	admin	By admin (11-17, 02:46:41pm)	11-17-17, 02:19:33pm
☑	Client [illegible]	admin	By admin (11-17, 02:46:41pm)	11-17-17, 02:18:31pm
□	Client was updated.			11-17-17, 02:18:30pm
□	Client group membership successfully updated.			11-17-17, 02:18:29pm
□	Client group membership successfully updated.			11-17-17, 02:18:29pm
□	Client group membership successfully updated.			11-17-17, 02:18:29pm
□	Client added			11-17-17, 02:18:29pm
□	Client was updated.			11-17-17, 02:18:28pm
□	Client was updated.			11-17-17, 02:18:27pm
□	Client group membership successfully updated.			11-17-17, 02:18:27pm
□	Client group membership successfully updated.			11-17-17, 02:18:27pm
□	Client group membership successfully updated.			11-17-17, 02:18:26pm
□	Client added			11-17-17, 02:18:26pm
□	Client was updated.			11-17-17, 02:18:25pm
□	Client was updated.			11-17-17, 02:18:25pm
□	Client group membership successfully updated.			11-17-17, 02:18:24pm
□	Client group membership successfully updated.			11-17-17, 02:18:24pm
□	Client group membership successfully updated.			11-17-17, 02:18:24pm
□	Client added			11-17-17, 02:18:24pm
□	Client was updated.			11-17-17, 02:07:25pm

Figure 14 Event page

You can manage the events from this page (review, acknowledge and other activities).

6.3.2 Settings (gear tool) menu

The **Settings** (gear tool) menu contains the following submenu options:

Table 8 Settings (gear tool) menu items

Menu item	**Description**
Associate with Deployed Avamar VE	This option only appears when DPMC has not been associated with an Avamar VE.
Manage XC Series Clusters	Monitors status and default Avamar Retention policy for each Nutanix cluster.
Avamar Registration	Update Avamar IP address or credentials.
Backup schedule	The VM backup schedule.
Retention Policies	Configure and manage VM retention policies.
On-demand Backup	Allows you to back up any individual from the VM table on the VM page
Deploy Avamar vSphere Proxies	Allows you to deploy the Avamar vSphere proxies (ESXi only).
Launch Avamar Administrator	Allows you to launch the Avamar administrator.
Support Bundle	Generate a log bundle that contains log files from both DPMC and Avamar.
UI Settings	Configure web session timeout.
Upgrade Software	Allows you to upgrade the DPMC.

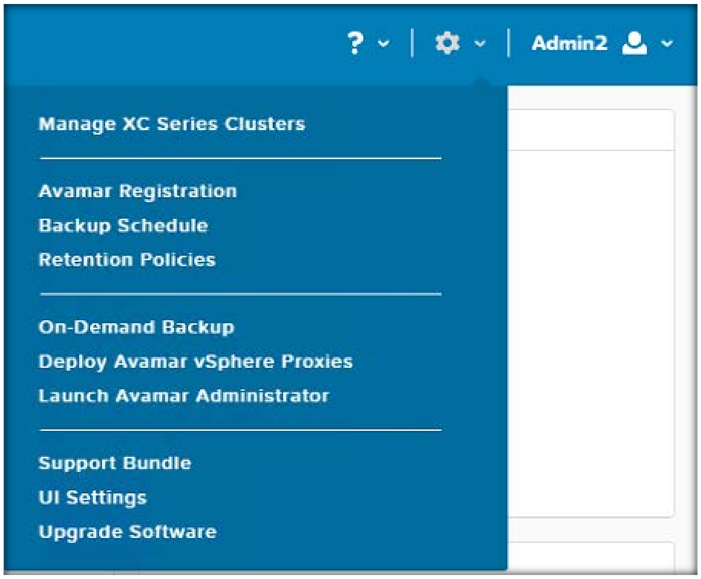


Figure 15 Settings (gear tool) menu

6.3.2.1 Associate with Deployed Avamar VE

This menu item allows the user to associate an existing AVE with DPMC. This menu item is explained in the Association of Avamar with DPMC Virtual Machine section.

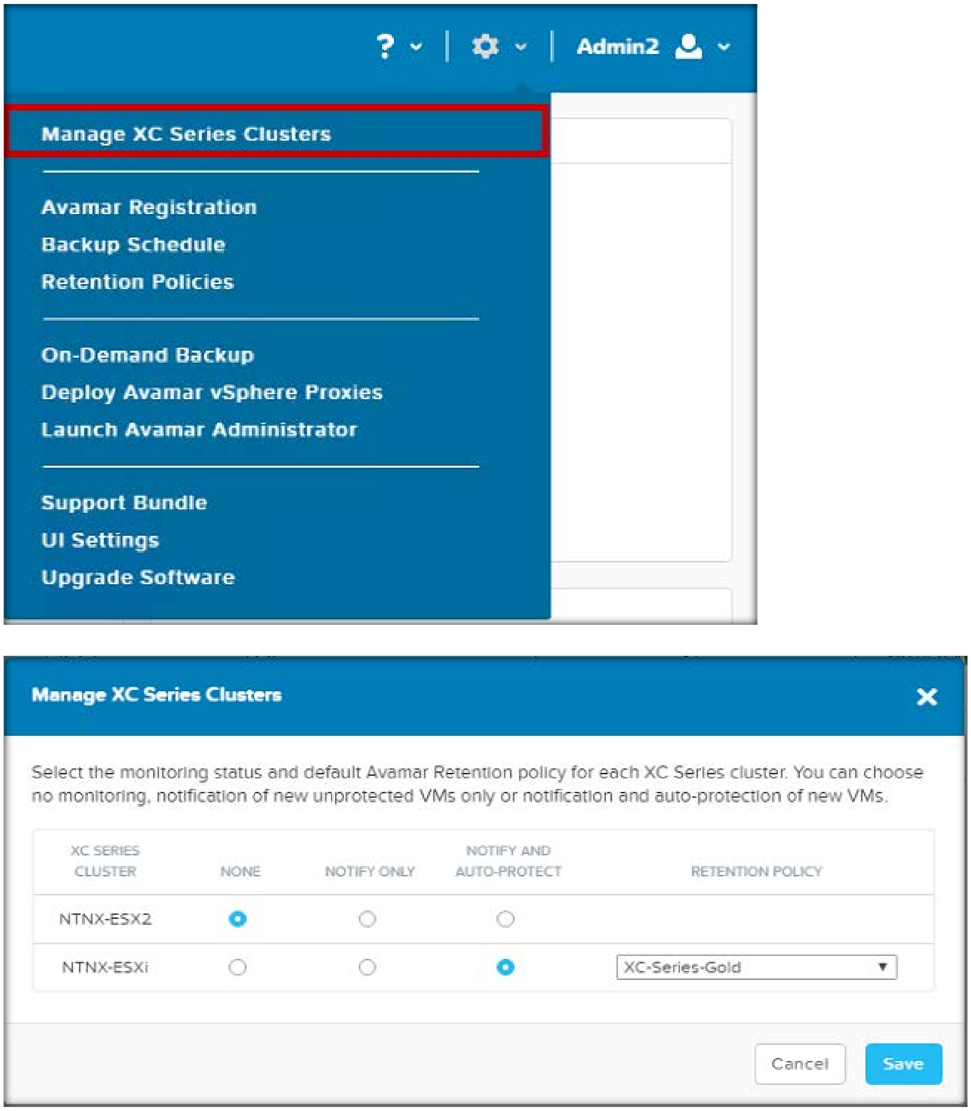
After the association and validation is complete, the menu item to associate an existing AVE with DPMC will no longer display in the Settings (gear tool) drop-down menu.

6.3.2.2 Manage XC Series Clusters

This menu item selects the monitoring status and default Avamar Retention policy for each Nutanix cluster. You can select no monitoring, notification of new unprotected VMs only or notification and auto-protection of new VMs.

On this setup page, you can manage the cluster. You can select the monitoring status of the cluster as well as the default retention policy. After selected, DPMC manages the cluster and all the VMs associated with that cluster based on the selection.

DPMC is notified when Nutanix clusters are joined to the Prism Central instance; therefore, if any new cluster is added, DPMC will display the new cluster. DPMC also checks the heartbeat of each cluster that Prism Central is connected. If the cluster is in an unreachable state, you are not able to initiate any actions on that cluster.



Select the monitoring status and default Avamar Retention policy for each XC Series cluster. You can choose no monitoring, notification of new unprotected VMs only or notification and auto-protection of new VMs.

XC SERIES CLUSTER	NONE	NOTIFY ONLY	NOTIFY AND AUTO-PROTECT	RETENTION POLICY
NTNX-ESX2	●	○	○	
NTNX-ESXi	○	○	●	XC-Series-Gold ▾

Figure 16 Manage XC Series Cluster

6.3.2.3 Avamar registration

This submenu item allows you to configure the Avamar instance being managed, update the IP address or change the credentials if needed.

NOTE: Updating the Avamar Registration does not update any settings on the Avamar server itself. This is to update DPMC with the correct information in the case where you have reconfigured one or more of the settings on Avamar.

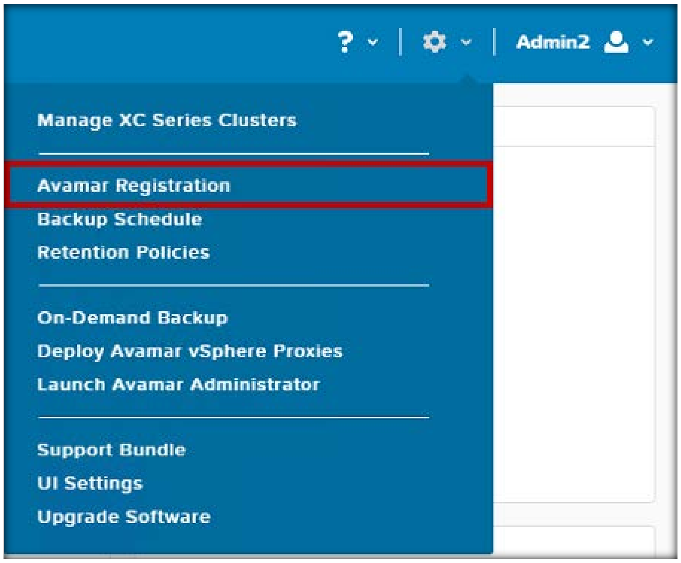
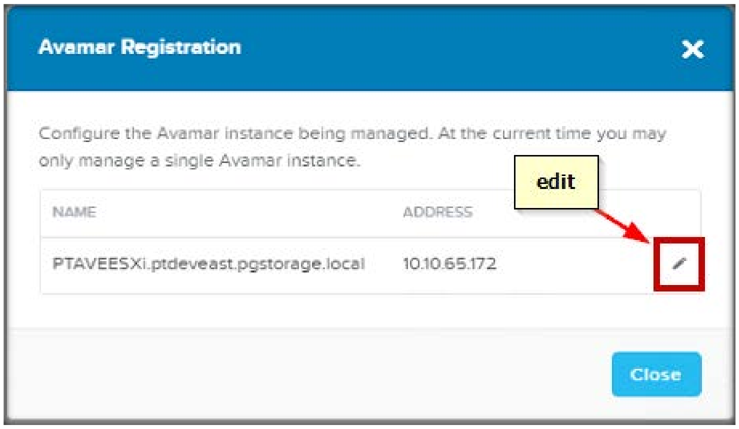


Figure 17 Avamar Registration

After the Avamar registration is selected, a pop-up window is displayed. To edit the Avamar setting, click the Edit icon, update the appropriate fields and then click **Save**.

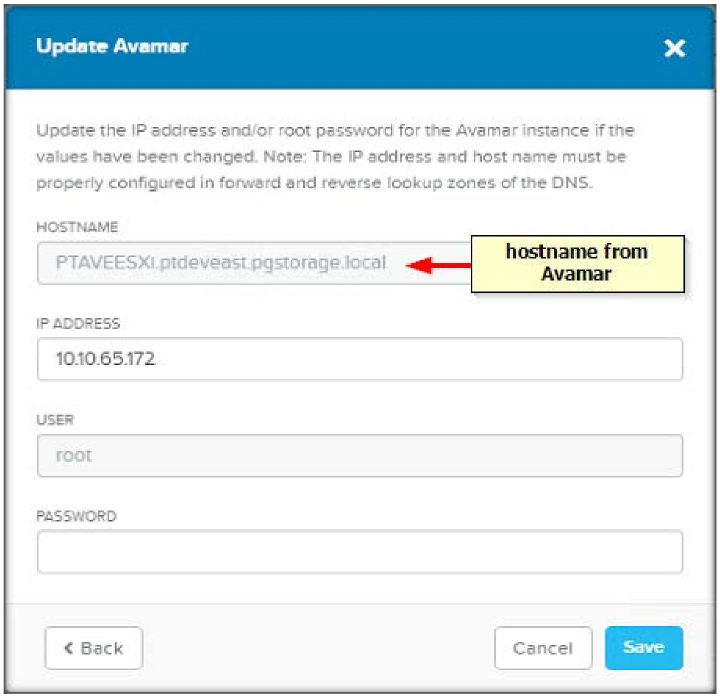


Avamar Registration

Configure the Avamar instance being managed. At the current time you may only manage a single Avamar instance.

NAME	ADDRESS
PTAVEESXi.ptdeveast.pgstorage.local	10.10.65.172

Figure 18 Edit icon



Update Avamar

Update the IP address and/or root password for the Avamar instance if the values have been changed. Note: The IP address and host name must be properly configured in forward and reverse lookup zones of the DNS.

HOSTNAME

PTAVEESXI.ptdeveast.pgstorage.local

hostname from Avamar

IP ADDRESS

10.10.65.172

USER

root

PASSWORD

Figure 19 HOSTNAME

6.3.2.4 Backup schedule

This menu item configures the frequency of Avamar scheduled backups for DPMC managed VMs. You can change the default as needed.

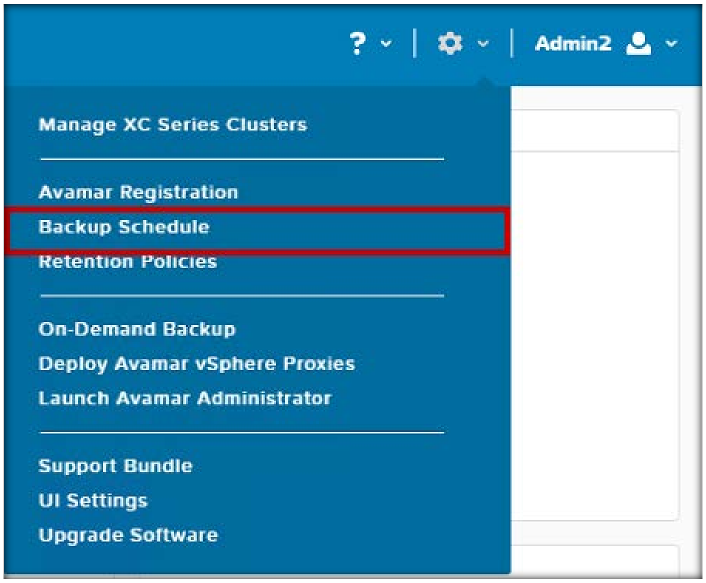
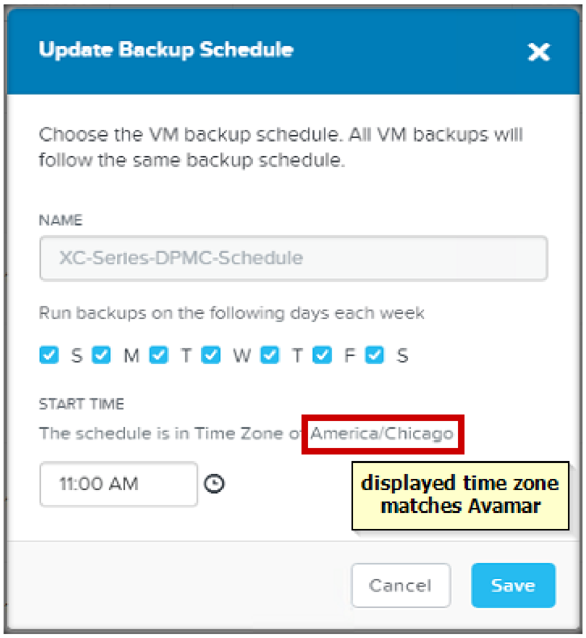


Figure 20 Backup Schedule

DPMC automatically defines a single backup schedule. The name of the Avamar backup schedule group is XC-Series-DPMC-Schedule. The default configuration for the backup schedule is to run daily backups at 10:00PM in the Avamar server’s time zone. DPMC expects less network traffic at 10PM. However, you can select a different schedule if necessary.



Update Backup Schedule

Choose the VM backup schedule. All VM backups will follow the same backup schedule.

NAME

XC-Series-DPMC-Schedule

Run backups on the following days each week

☑ S ☑ M ☑ T ☑ W ☑ T ☑ F ☑ S

START TIME

The schedule is in Time Zone of America/Chicago

11:00 AM

displayed time zone matches Avamar

Figure 21 Update Backup Schedule

6.3.2.5 Retention Policies

This menu item provides you the ability to create new retention policies. DPMC creates the following default Avamar retention policies:

- XC-Series-Gold (90 days)
- XC-Series-Silver (60 days)
- XC-Series-Bronze (30 days)

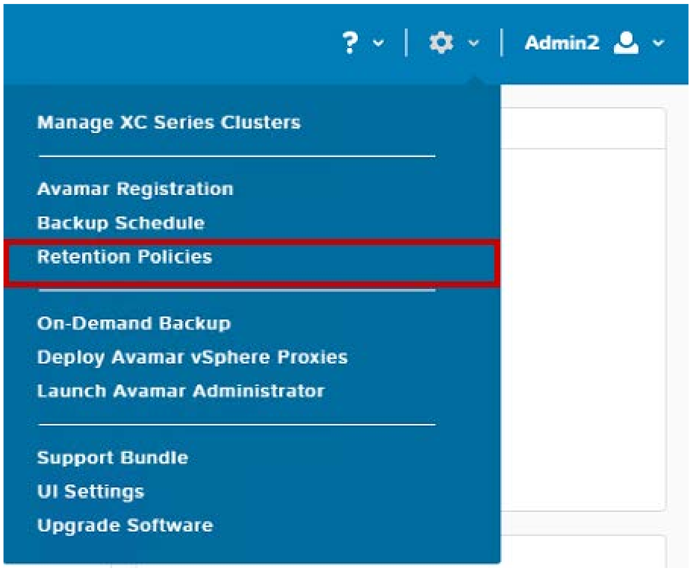
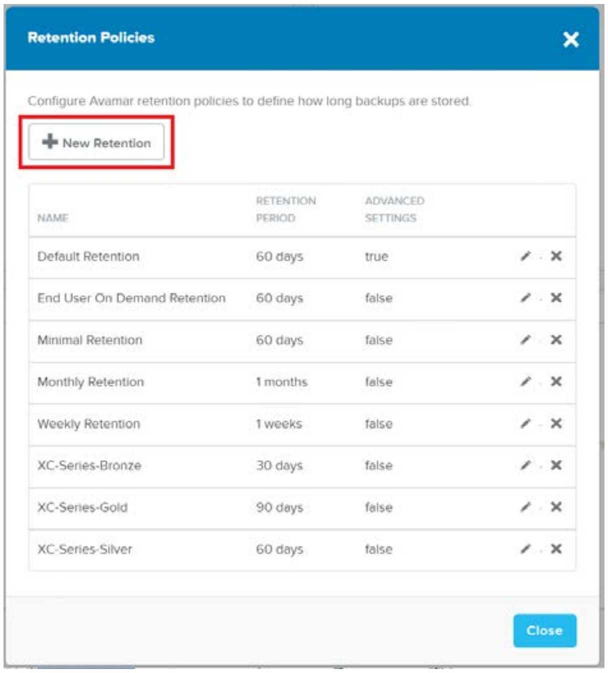


Figure 22 Retention Policies

After you select the **Retention Policy** button, a page is displayed that allows you to create a new retention policy.



Configure Avamar retention policies to define how long backups are stored.

NAME	RETENTION PERIOD	ADVANCED SETTINGS
Default Retention	60 days	true
End User On Demand Retention	60 days	false
Minimal Retention	60 days	false
Monthly Retention	1 months	false
Weekly Retention	1 weeks	false
XC-Series-Bronze	30 days	false
XC-Series-Gold	90 days	false
XC-Series-Silver	60 days	false

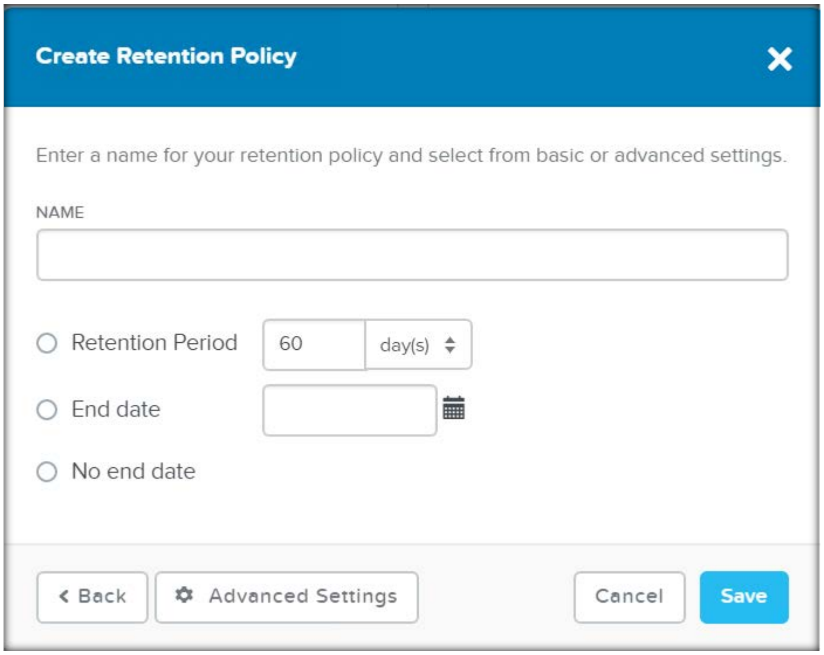
Figure 23 Add new retention

To create a new retention policy, click **+ New Retention**.

After the new retention policy window opens you can provide a name for the new policy and configure the retention of the backups using one of the basic options or the advanced settings.

For a basic retention policy select one of the following:

- Retention period
- End date
- No end date



Create Retention Policy

Enter a name for your retention policy and select from basic or advanced settings.

NAME

○ Retention Period 60 day(s)

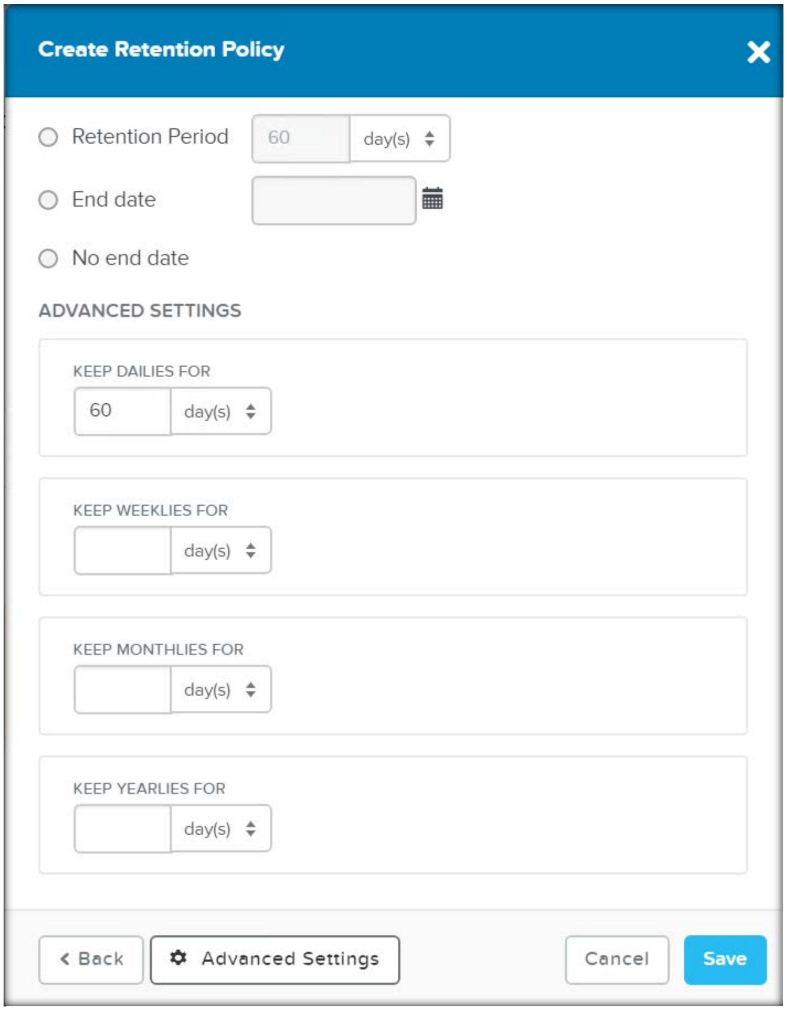
○ End date

○ No end date

Figure 24 Create basic Retention Policy

For an advanced retention policy, you may define the retention period in days, weeks, months or years for one or more of the following:

- Dailies
- Weeklies
- Monthlies
- Yearlies


Create Retention Policy

○ Retention Period 60 day(s)

○ End date

○ No end date

ADVANCED SETTINGS

KEEP DAILIES FOR 60 day(s)

KEEP WEEKLIES FOR day(s)

KEEP MONTHLIES FOR day(s)

KEEP YEARLIES FOR day(s)

6.3.2.6 On-demand Backup

On-Demand backup lets you initiate a one-time backup of one or more VMs managed by DPMC including VMs across multiple clusters.

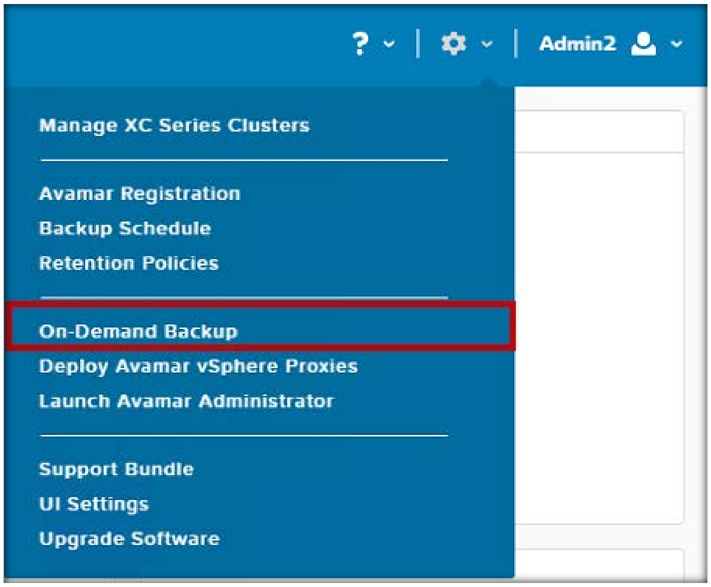
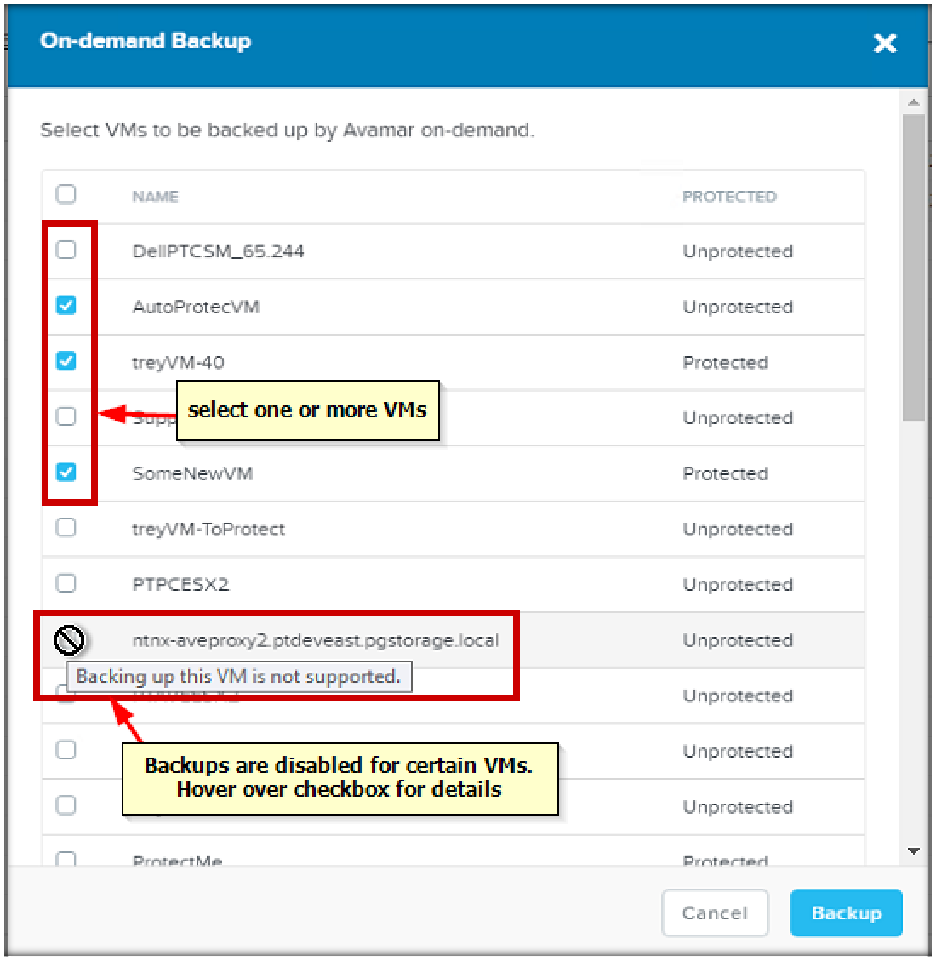


Figure 25 On-Demand Backup from Setting (gear tool)

You can select multiple VMs or a particular VM to backup. After the on-demand backup is requested, DPMC immediately initiates the backup action on the VM requested.



On-demand Backup

Select VMs to be backed up by Avamar on-demand.

□	NAME	PROTECTED
□	DellPTCSM_65.244	Unprotected
☑	AutoProtecVM	Unprotected
☑	treyVM-40	Protected
□	Supp	Unprotected
☑	SomeNewVM	Protected
□	treyVM-ToProtect	Unprotected
□	PTPCESX2	Unprotected
🚫	ntnx-aveproxy2.ptdeveast.pgstorage.local	Unprotected
□		Unprotected
□		Unprotected
□		Unprotected
□	ProtectMe	Protected

Backing up this VM is not supported.

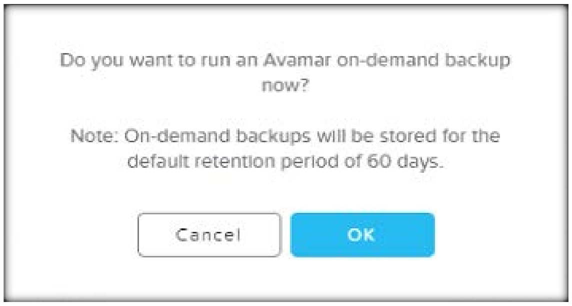
select one or more VMs

Backups are disabled for certain VMs. Hover over checkbox for details

Figure 26 On-Demand Backup

After you select the VM(s) that you want backed up, select **Backup**.

Click **OK** to confirm or cancel to go back and review.



Do you want to run an Avamar on-demand backup now?

Note: On-demand backups will be stored for the default retention period of 60 days.

Figure 27 On-demand backup confirmation window

A popup window is displayed momentarily informing you that the backup job was initiated successfully.

6.3.2.7 Deploy Avamar vSphere Proxies (ESXi only)

This menu item is always displayed but only applies to ESXi clusters.

This menu item deploys Avamar vSphere proxies according to the Avamar Server recommendation. Proxy VMs facilitate backup activities for Avamar on ESXi clusters and are required for backing up VMs. A proxy deployment recommendation may be performed at any time, but DPMC prompts the user to run the proxy deployment recommendation when a new ESXi cluster is discovered. DPMC deploys these proxy VMs with minimal effort. This action must be completed during the initial configuration.

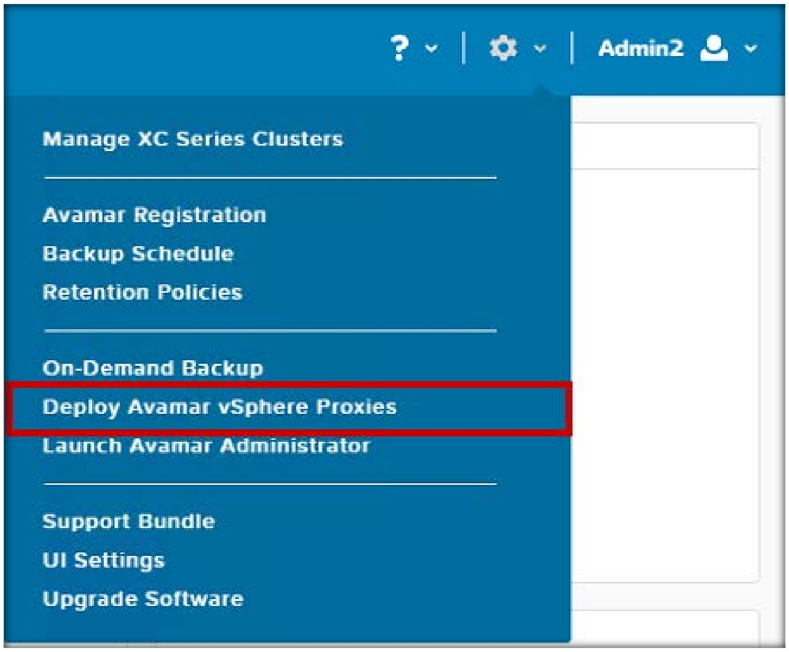


Figure 28 Deploy Avamar vSphere Proxies

Proxy VM creation is described in detail in the vSphere Proxies for ESXi section of this document. This step may take 10 minutes or more based on number of clusters to be configured.

NOTE: Proxy VMs are created using vCenter and must remain with the host (i.e. cannot be migrated). An Avamar or DPMC VM deletion will not delete the proxy VMs.

6.3.2.8 Launch Avamar Administrator

You can manage Avamar by using the Avamar Administrator applet.

DPMC provides a download option. You can select the *Launch Avamar Administrator* item and DPMC will install the administrator application on the management console.

You can also download the Avamar Administrator applet, directly from the Avamar web server located at https://xx.xx.xx.xx/dtlt/home.html, where xx.xx.xx.xx is the AVE web address.

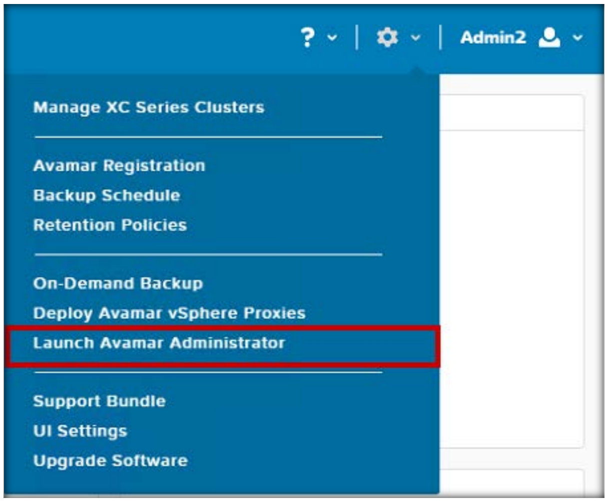
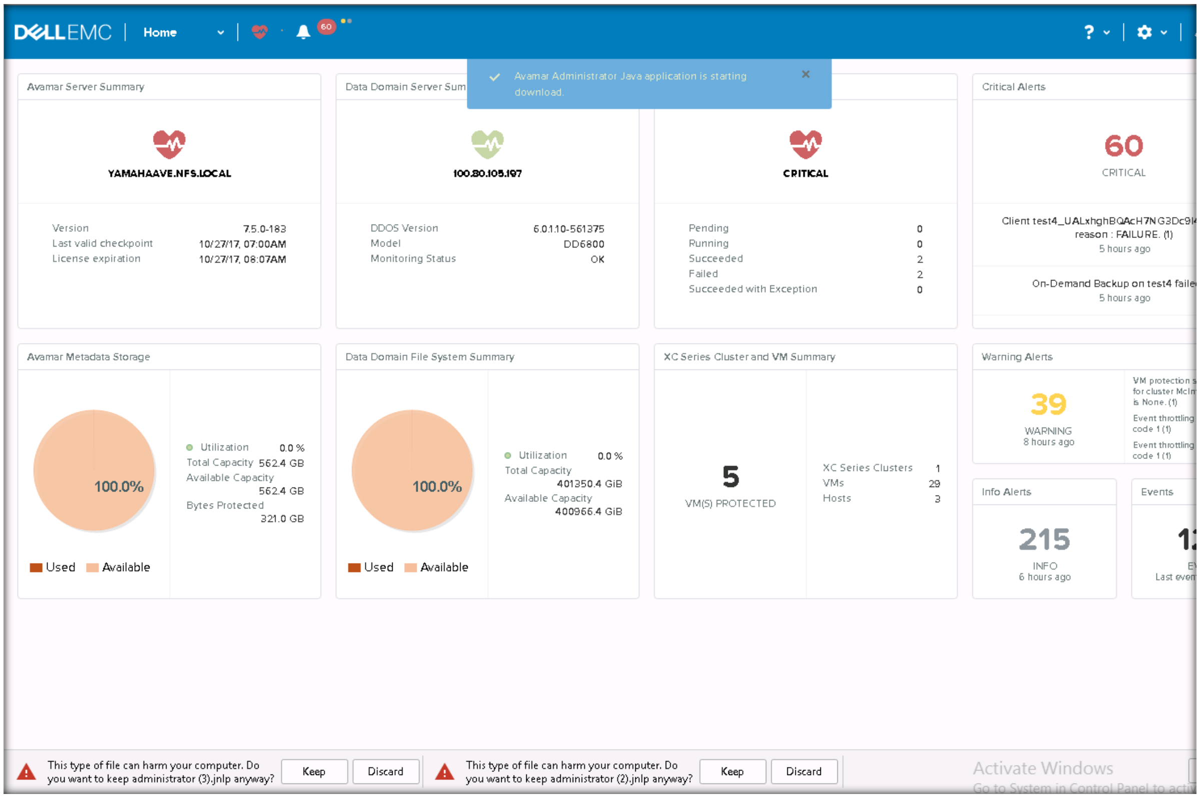


Figure 29 Launch Avamar Administrator

If you want to launch the administrator from DPMC, DPMC launches a java application, which downloads the application.



Avamar Administrator Java application is starting download.

Avamar Server Summary

YAMAHAAVE.NFS.LOCAL

Version	7.5.0-183
Last valid checkpoint	10/27/17, 07:00AM
License expiration	10/27/17, 08:07AM

Data Domain Server Sum

100.80.105.197

DDOS Version	6.0.1.10-561375
Model	DD6800
Monitoring Status	OK

CRITICAL

Pending	0
Running	0
Succeeded	2
Failed	2
Succeeded with Exception	0

Critical Alerts

60
CRITICAL

Client test4_UALxhghBQAcH7NG3Dc9l
reason : FAILURE. (1)
5 hours ago

On-Demand Backup on test4 faile
5 hours ago

Avamar Metadata Storage

Utilization	0.0 %
Total Capacity	562.4 GB
Available Capacity	562.4 GB
Bytes Protected	321.0 GB

Data Domain File System Summary

Utilization	0.0 %
Total Capacity	401350.4 GiB
Available Capacity	400966.4 GiB

XC Series Cluster and VM Summary

5
VM(S) PROTECTED

XC Series Clusters	1
VMs	29
Hosts	3

Warning Alerts

39
WARNING
8 hours ago

VM protection s
for cluster McIn
is None. (1)
Event throttling
code 1 (1)
Event throttling
code 1 (1)

Info Alerts

215
INFO
6 hours ago

Events

1
E
Last even

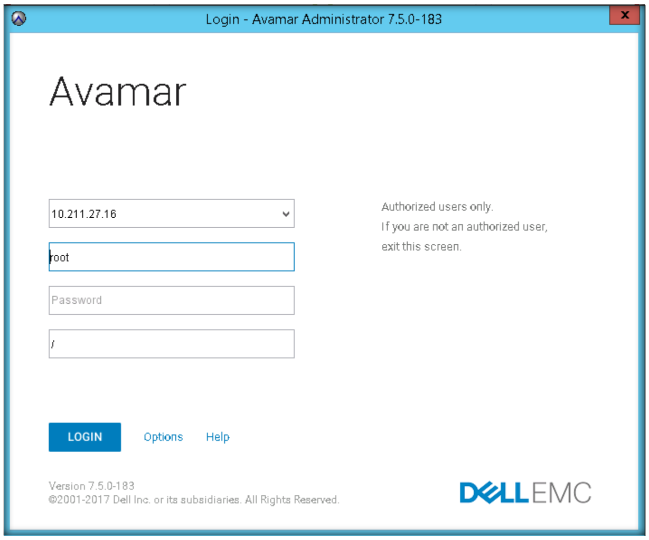
This type of file can harm your computer. Do you want to keep administrator (3).jnlp anyway? Keep Discard

This type of file can harm your computer. Do you want to keep administrator (2).jnlp anyway? Keep Discard

Activate Windows
Go to System in Control Panel to acti

Figure 30 Avamar Administrator Java Application download

The DPMC runs the administrator application, which will start the Avamar Management Console Client. After the application launches successfully, a window opens requesting the Avamar IP address and credentials.



10.211.27.16

root

Password

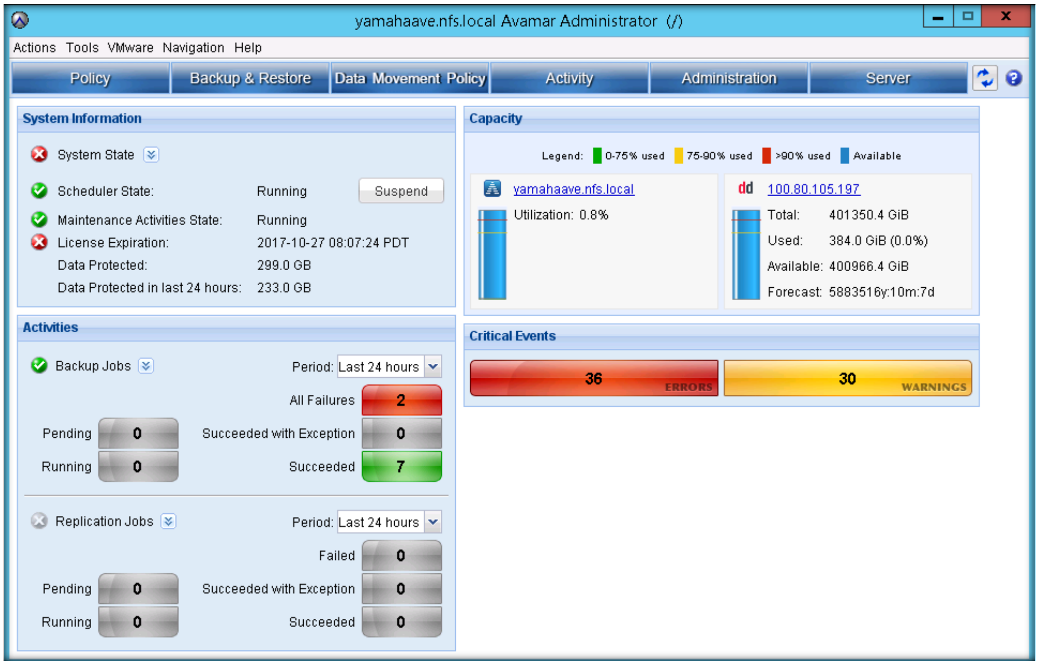
/

Authorized users only.
If you are not an authorized user,
exit this screen.

Version 7.5.0-183
©2001-2017 Dell Inc. or its subsidiaries. All Rights Reserved.

Figure 31 Login – Avamar Administrator

After you enter the proper credentials, the Avamar Administrator Console is displayed.



System Information

System State	
Scheduler State:	Running
Maintenance Activities State:	Running
License Expiration:	2017-10-27 08:07:24 PDT
Data Protected:	299.0 GB
Data Protected in last 24 hours:	233.0 GB

Capacity

Legend: 🟩 0-75% used 🟨 75-90% used 🟥 >90% used 🟦 Available

yamahaave.nfs.local
Utilization: 0.8%

100.80.105.197

Total:	401350.4 GiB
Used:	384.0 GiB (0.0%)
Available:	400966.4 GiB
Forecast:	5883516y:10m:7d

Critical Events

36 ERRORS
30 WARNINGS

Activities

Backup Jobs — Period: Last 24 hours

		All Failures	2
Pending	0	Succeeded with Exception	0
Running	0	Succeeded	7

Replication Jobs — Period: Last 24 hours

		Failed	0
Pending	0	Succeeded with Exception	0
Running	0	Succeeded	0

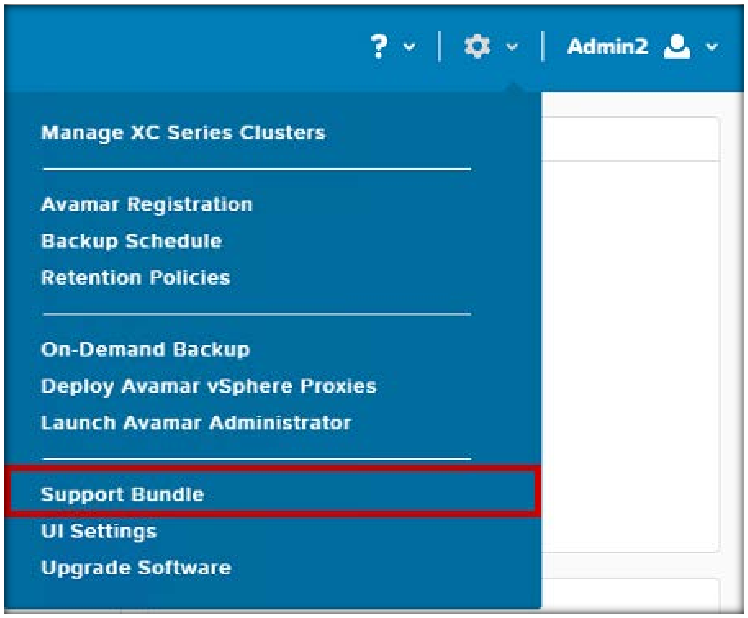
Figure 32 Avamar Administrator Console

6.3.2.9 Support Bundle

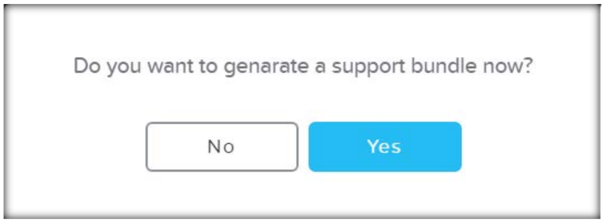
This menu item provides you a way to collect logs easily from DPMC. The Support Bundle is a unified compressed support bundle or diagnostic file that is downloaded to the download folder. It includes configuration information, licensing and log files for DPMC and the Avamar server.

To download the file:

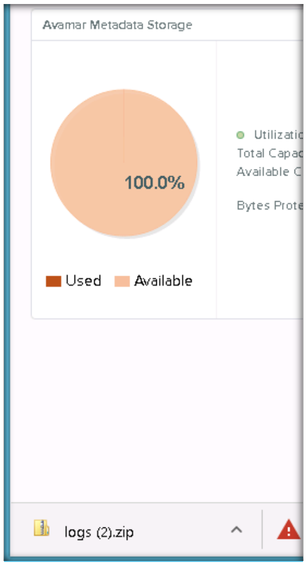
1. From the **Settings** (gear tool), click **Support Bundle**.



2. A popup is displayed requesting confirmation. Click **OK**.

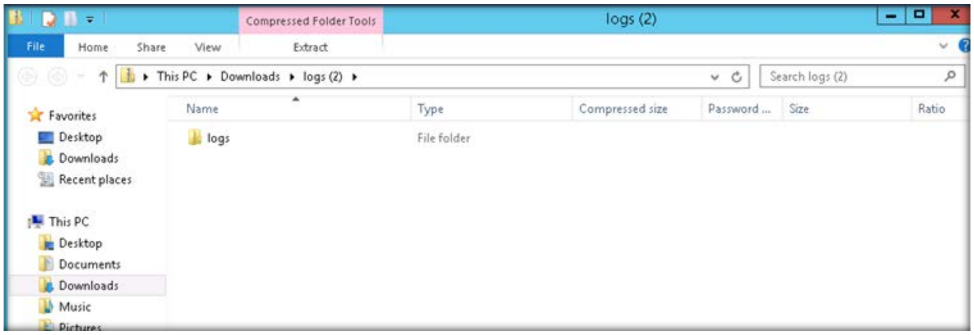

Do you want to genarate a support bundle now?

3. After the file is generated, DPMC displays the log file downloaded in the left corner. The file is also available in the Downloads folder of the management node.



4. DPMC and Avamar logs are downloaded to the browser in a single zip archive.

NOTE: Keep the DPMC Web Console open until the bundle has downloaded completely. Otherwise, the system cancels the operation.



6.3.2.10 UI Settings

UI settings set the security policy of the DPMC web session.

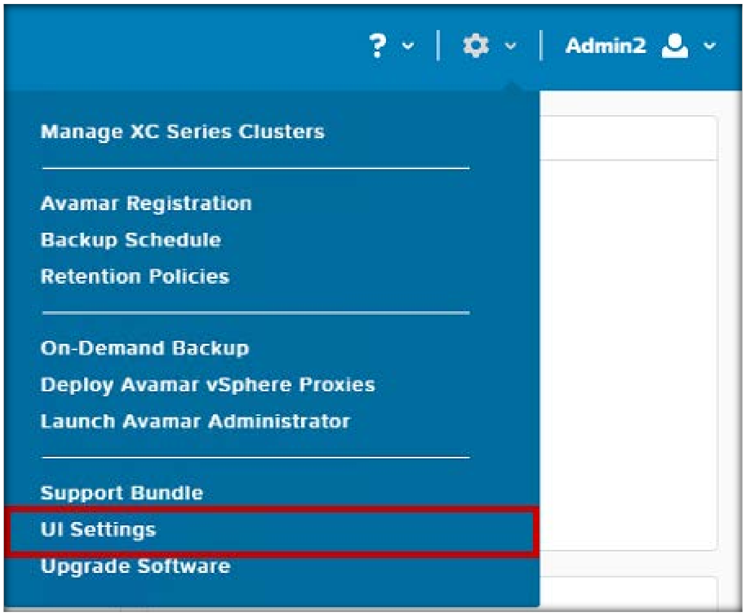
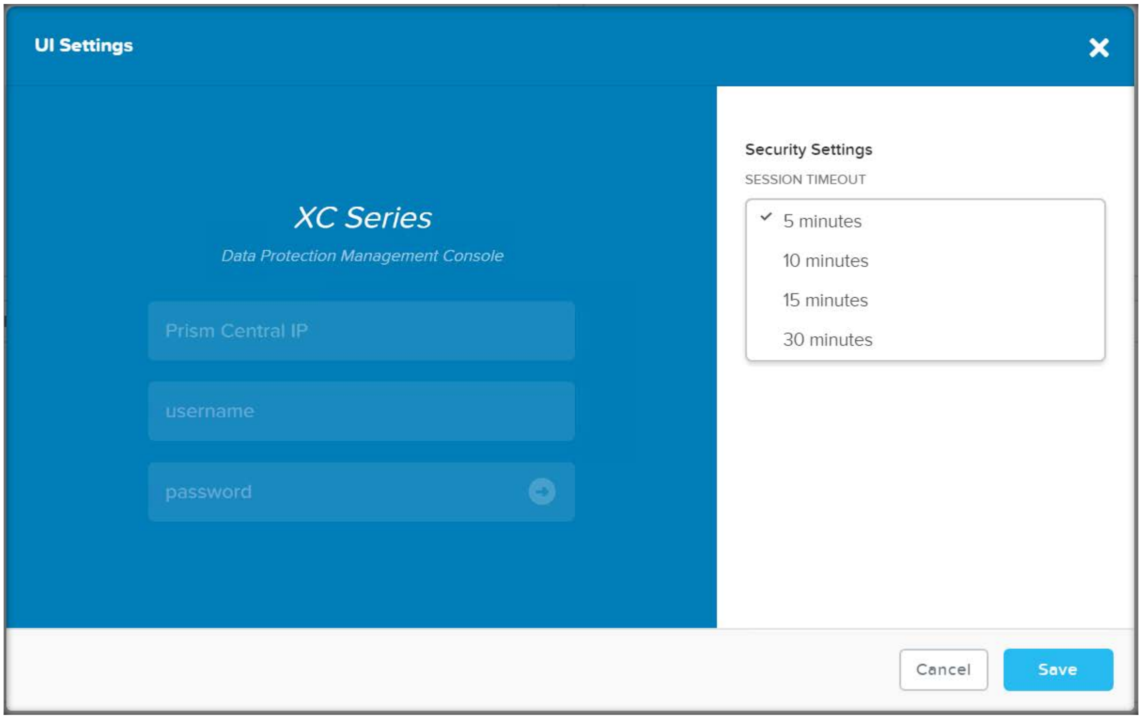


Figure 33 UI Settings

The UI Settings allow you to change the session timeout as needed.


UI Settings

Security Settings

SESSION TIMEOUT

✓ 5 minutes

10 minutes

15 minutes

30 minutes

Figure 34 Session Timeout

6.3.2.11 Upgrade Software

This item provides you the current build version and an easy way to upgrade the DPMC software if needed.

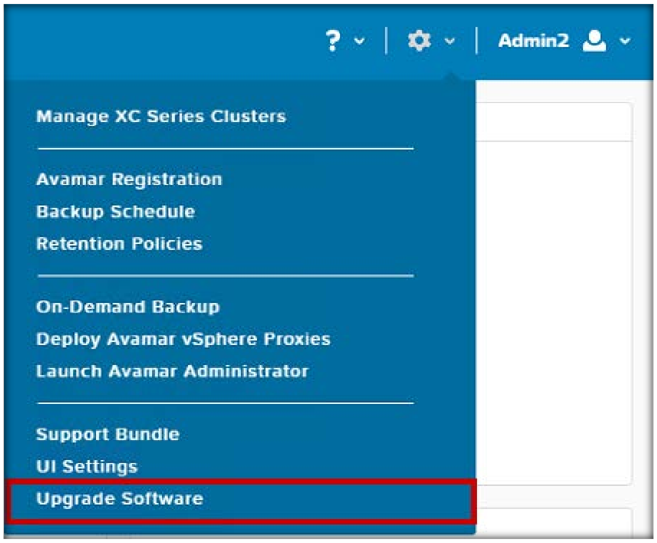
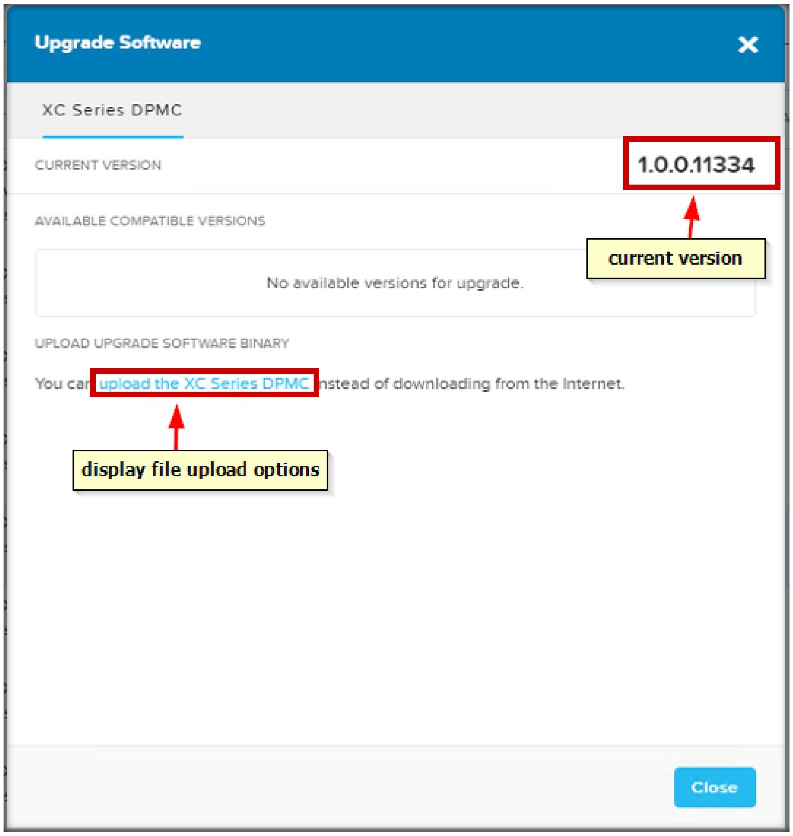


Figure 35 Upgrade Software

If you select the upgrade menu item, DPMC displays the current version and provides an upgrade choice.



Upgrade Software

XC Series DPMC

CURRENT VERSION 1.0.0.11334

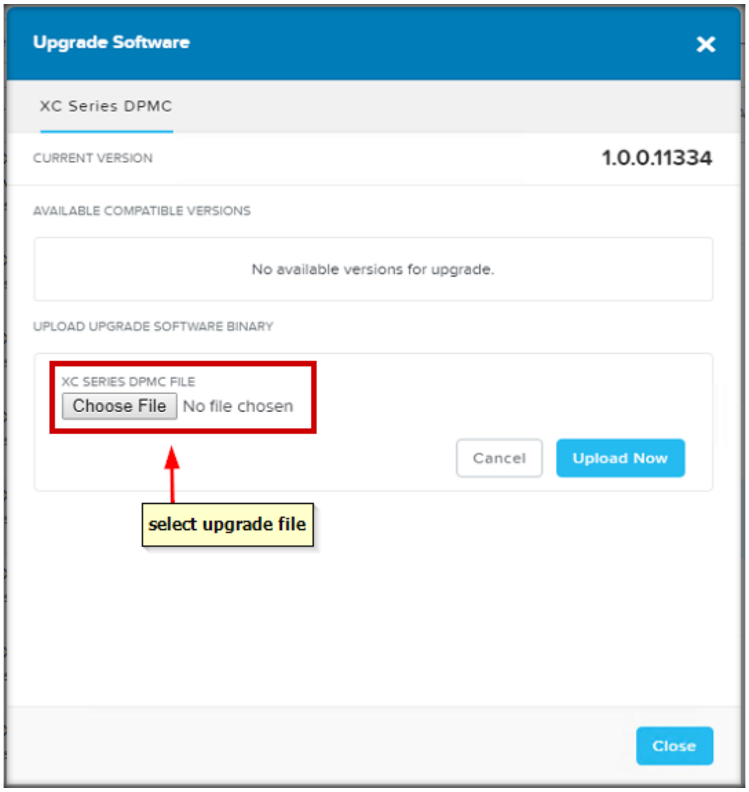
AVAILABLE COMPATIBLE VERSIONS

No available versions for upgrade.

UPLOAD UPGRADE SOFTWARE BINARY

You can upload the XC Series DPMC instead of downloading from the Internet.

Figure 36 Version and upgrade choice



Upgrade Software

XC Series DPMC

CURRENT VERSION 1.0.0.11334

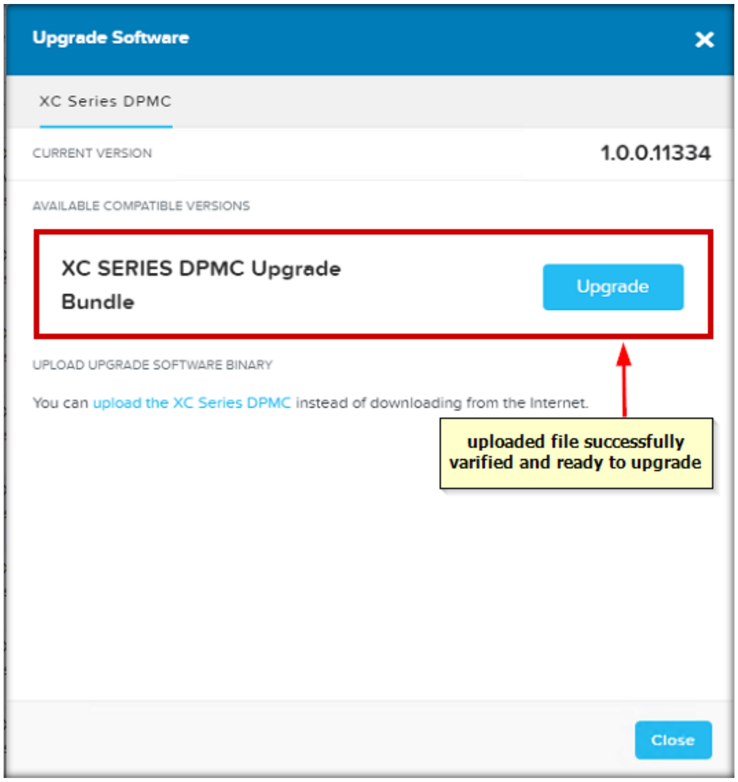
AVAILABLE COMPATIBLE VERSIONS

No available versions for upgrade.

UPLOAD UPGRADE SOFTWARE BINARY

XC SERIES DPMC FILE

No file chosen



Upgrade Software

XC Series DPMC

CURRENT VERSION 1.0.0.11334

AVAILABLE COMPATIBLE VERSIONS

XC SERIES DPMC Upgrade Bundle

UPLOAD UPGRADE SOFTWARE BINARY

You can upload the XC Series DPMC instead of downloading from the Internet.

uploaded file successfully varified and ready to upgrade

Figure 37 Upgrade

If DPMC is running the latest version, it displays a message that there is not an available version for upgrade. You can download the upgraded version of DPMC from the internet, if necessary.

6.3.3 Admin menu

The home page has a drop-down Admin menu item that contains the following:

- About Dell EMC
- Sign Out

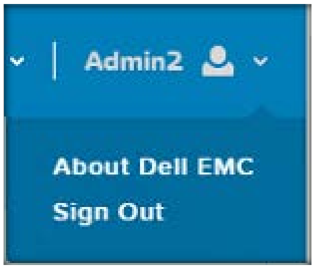


Figure 38 Admin drop-down menu

6.3.3.1 About Dell EMC

This menu item provides information about DPMC.

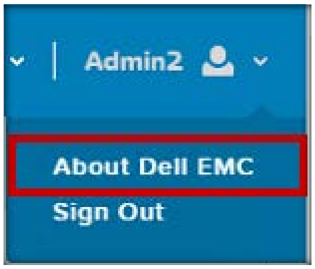
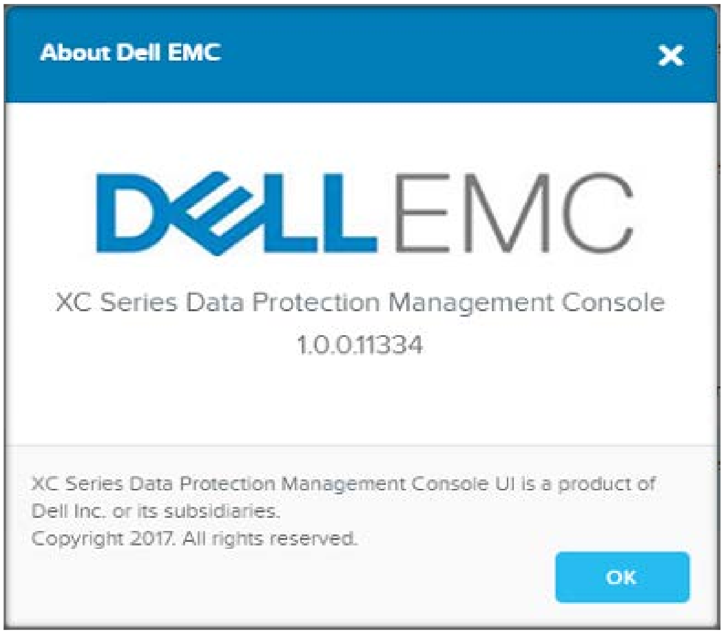


Figure 39 About Dell EMC



XC Series Data Protection Management Console
1.0.0.11334

XC Series Data Protection Management Console UI is a product of Dell Inc. or its subsidiaries.
Copyright 2017. All rights reserved.

Figure 40 About Dell EMC

6.3.3.2 Sign out

This menu item lets you sign out of the system.

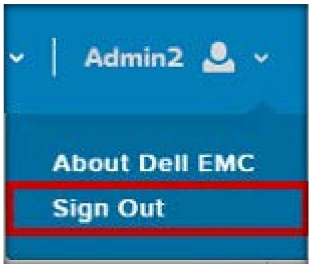


Figure 41 Sign Out

After signing out you are returned to the DPMC login page.

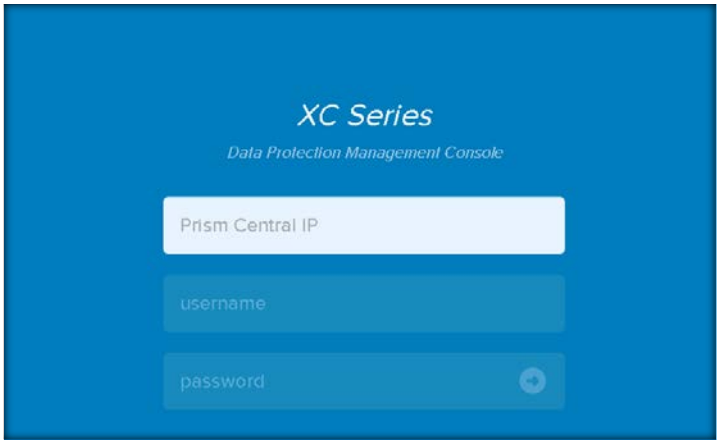


Figure 42 DPMC login page

7 Initial Configuration

After an Avamar instance is associated with DPMC, you need to deploy the proxy VM (for ESXi) or configure Avamar clients for Hyper-V.

7.1 vSphere Proxies for ESXi

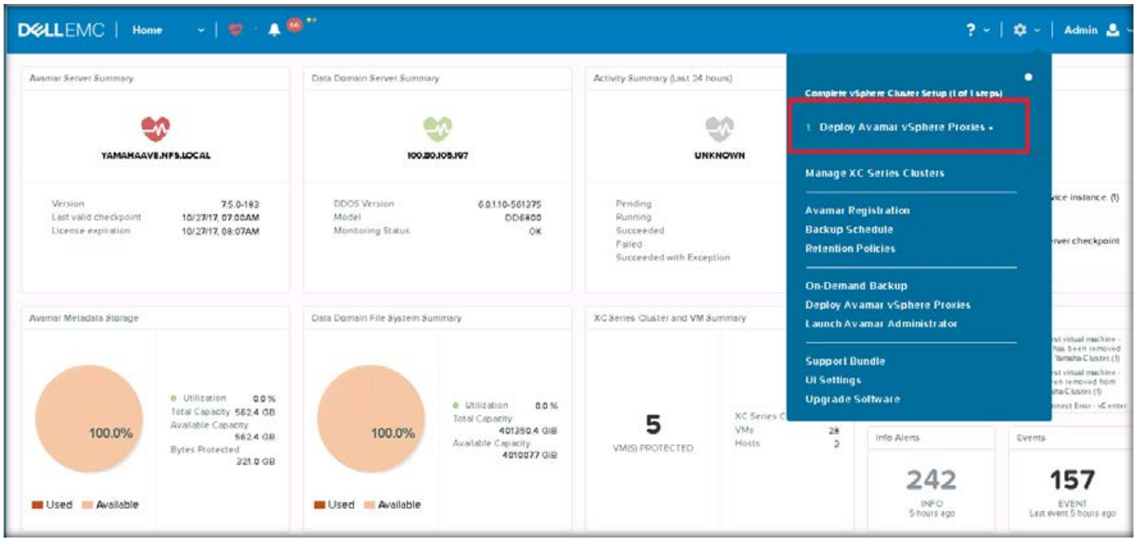
Avamar reduces the backup workload movement across clusters; therefore, the Avamar agent needs to be installed on the cluster that you want to back up. This is accomplished by deploying an Avamar Proxy. The proxy VM works with VMware infrastructure and is required for ESXi cluster backups/restores.

DPMC can install and configure the Avamar vSphere Proxy VM. This option becomes available after an ESXi cluster is discovered by DPMC or during initial setup.

Installing a proxy VM needs to be completed when DPMC associates an Avamar instance. Additionally, the proxy VM deployment needs to be completed when a new cluster is added. After the cluster is added, DPMC prompts to deploy the proxy VM.

After you select the **Deploy Avamar vSphere Proxies** menu item, DPMC performs a series of tasks to install and configure the Avamar Proxy VM. If a failure occurs, identify which step failed by checking the following progression.

1. To configure, click Deploy Avamar vSphere Proxy.


DELLEMC
Home
Admin
Avamar Server Summary
Data Domain Server Summary
Activity Summary (Last 24 hours)
Complete vSphere Cluster Setup (1 of 1 steps)
1. Deploy Avamar vSphere Proxies
Manage XC Series Clusters
Avamar Registration
Backup Schedule
Retention Policies
On-Demand Backup
Deploy Avamar vSphere Proxies
Launch Avamar Administrator
Support Bundle
UI Settings
Upgrade Software
Avamar Metadata Storage
Data Domain File System Summary
XC Series Cluster and VM Summary
100.0%
100.0%
Used
Available
Info Alerts
Events

YAMAHAAVE.NFS.LOCAL

Version 7.5.0-183
Last valid checkpoint 10/27/17, 07:00AM
License expiration 10/27/17, 08:07AM

100.80.105.197

DDOS Version 6.0.1.10-561375
Model DD6800
Monitoring Status OK

UNKNOWN

Pending
Running
Succeeded
Failed
Succeeded with Exception

Utilization 0.0 %
Total Capacity 562.4 GB
Available Capacity 562.4 GB
Bytes Protected 321.0 GB

Utilization 0.0 %
Total Capacity 401350.4 GiB
Available Capacity 401007.7 GiB

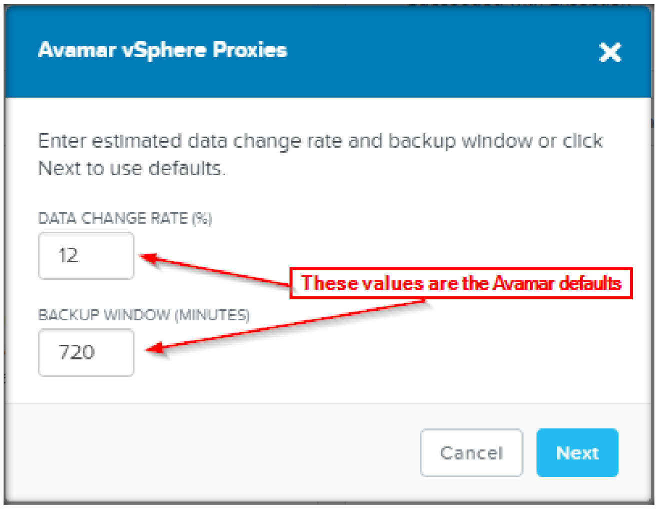
5
VM(S) PROTECTED

XC Series C
VMs 28
Hosts 3

242
INFO
5 hours ago

157
EVENT
Last event 5 hours ago

2. Configure the data change rate and the backup window.



Avamar vSphere Proxies

Enter estimated data change rate and backup window or click Next to use defaults.

DATA CHANGE RATE (%)

12

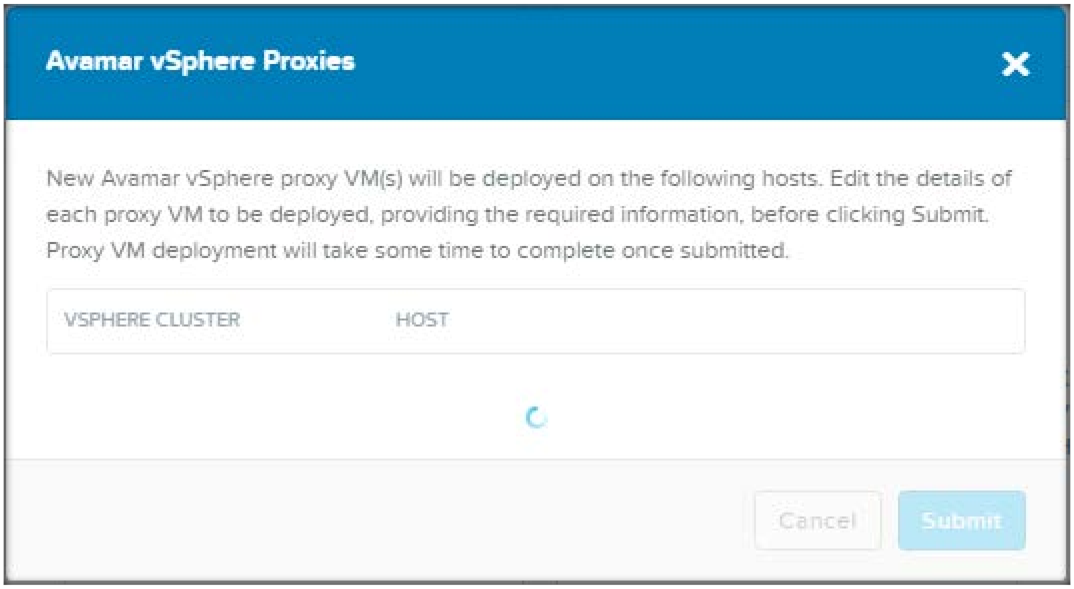
BACKUP WINDOW (MINUTES)

720

These values are the Avamar defaults

3. After you provide the change rate and backup window time, DPMC queries the cluster structure.

   This operation may take a few minutes because DPMC needs to retrieve all the cluster information from Avamar. After the proxy deployment recommendation is generated, DPMC creates the proxy based on the input provided.

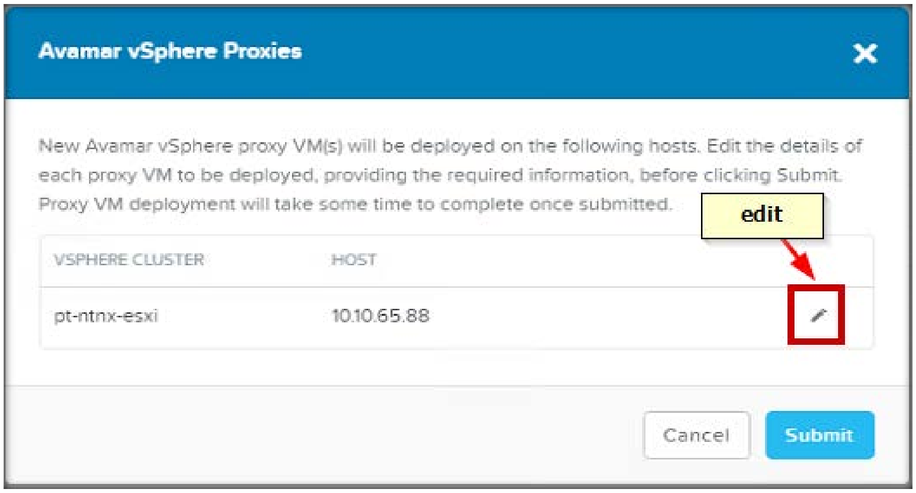


Avamar vSphere Proxies

New Avamar vSphere proxy VM(s) will be deployed on the following hosts. Edit the details of each proxy VM to be deployed, providing the required information, before clicking Submit. Proxy VM deployment will take some time to complete once submitted.

VSPHERE CLUSTER	HOST

4. Configure the Proxy VM by clicking the edit button.



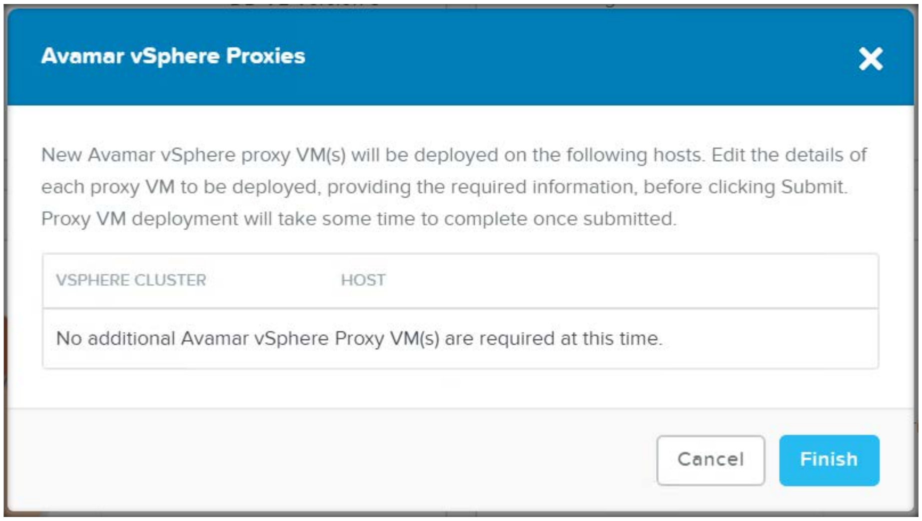
Avamar vSphere Proxies

New Avamar vSphere proxy VM(s) will be deployed on the following hosts. Edit the details of each proxy VM to be deployed, providing the required information, before clicking Submit. Proxy VM deployment will take some time to complete once submitted.

VSPHERE CLUSTER	HOST
pt-ntnx-esxi	10.10.65.88

NOTE: If the recommendation determines that no additional proxy VM(s) are required, indicating they have already been previously deployed through DPMC or Avamar Administrator, you will see the message below.

5. Click **Finish** to exit the proxy deployment wizard.

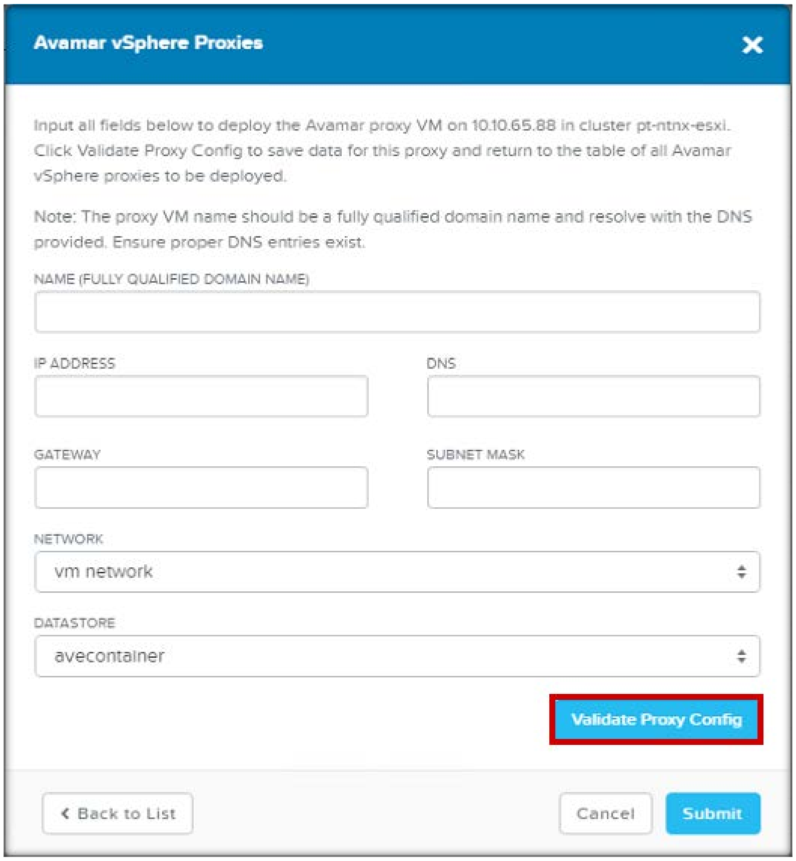


Avamar vSphere Proxies

New Avamar vSphere proxy VM(s) will be deployed on the following hosts. Edit the details of each proxy VM to be deployed, providing the required information, before clicking Submit. Proxy VM deployment will take some time to complete once submitted.

VSPHERE CLUSTER	HOST
No additional Avamar vSphere Proxy VM(s) are required at this time.	

6. Validate the Proxy VM configuration.



Avamar vSphere Proxies

Input all fields below to deploy the Avamar proxy VM on 10.10.65.88 in cluster pt-ntnx-esxi. Click Validate Proxy Config to save data for this proxy and return to the table of all Avamar vSphere proxies to be deployed.

Note: The proxy VM name should be a fully qualified domain name and resolve with the DNS provided. Ensure proper DNS entries exist.

NAME (FULLY QUALIFIED DOMAIN NAME)

IP ADDRESS

DNS

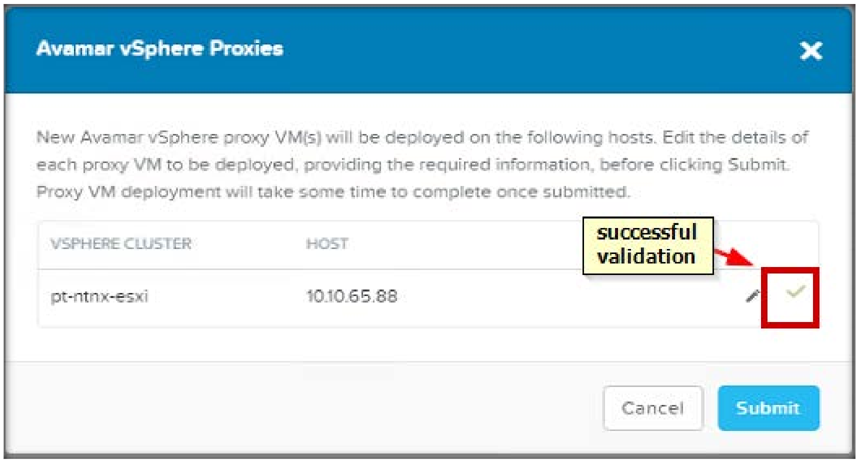
GATEWAY

SUBNET MASK

NETWORK: vm network

DATASTORE: avecontainer

7. DPMC attempts to validate forward and reverse DNS name resolution. If successful, the system prompts you to deploy the proxy VM.

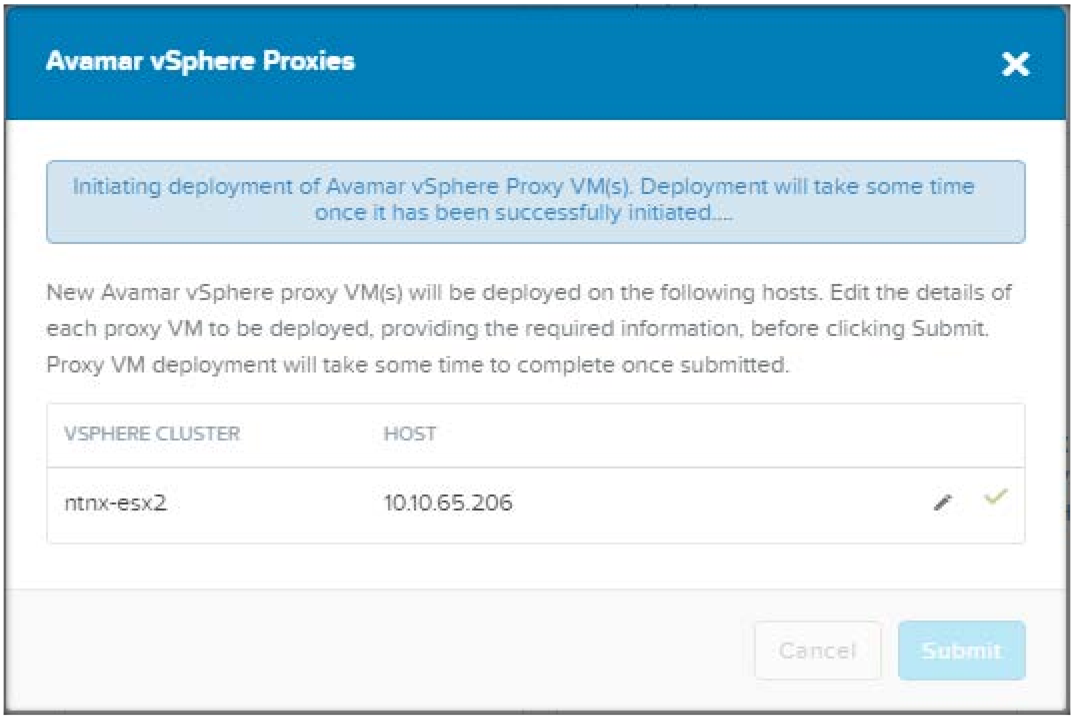


Avamar vSphere Proxies

New Avamar vSphere proxy VM(s) will be deployed on the following hosts. Edit the details of each proxy VM to be deployed, providing the required information, before clicking Submit. Proxy VM deployment will take some time to complete once submitted.

VSPHERE CLUSTER	HOST	
pt-ntnx-esxi	10.10.65.88	✓

8. Submit the Proxy VM for creation after validation.
9. Status of Proxy VM creation is displayed.



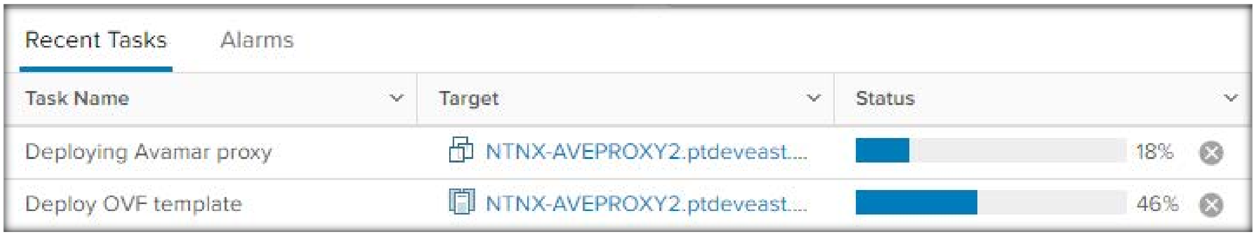
Avamar vSphere Proxies

Initiating deployment of Avamar vSphere Proxy VM(s). Deployment will take some time once it has been successfully initiated....

New Avamar vSphere proxy VM(s) will be deployed on the following hosts. Edit the details of each proxy VM to be deployed, providing the required information, before clicking Submit. Proxy VM deployment will take some time to complete once submitted.

VSPHERE CLUSTER	HOST	
ntnx-esx2	10.10.65.206	✓

10. Check the vCenter for the proxy VM deployment status.



Task Name	Target	Status
Deploying Avamar proxy	NTNX-AVEPROXY2.ptdeveast....	18%
Deploy OVF template	NTNX-AVEPROXY2.ptdeveast....	46%

7.1.1 DPMC behavior if no proxy is created after adding a new cluster

A pop-up window is displayed every 30 seconds when DPMC detects that a new ESXi cluster has been registered to Prism Central, prompting you to complete a proxy deployment recommendation. After you have completed the steps for creating and deploying the proxy VM(s), the prompt disappears.

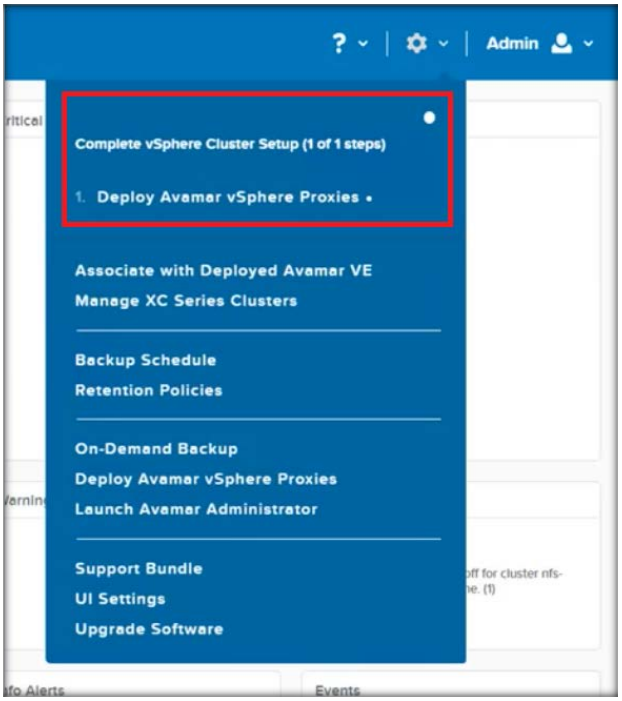

?
Admin
Complete vSphere Cluster Setup (1 of 1 steps)
1. Deploy Avamar vSphere Proxies
Associate with Deployed Avamar VE
Manage XC Series Clusters
Backup Schedule
Retention Policies
On-Demand Backup
Deploy Avamar vSphere Proxies
Launch Avamar Administrator
Support Bundle
UI Settings
Upgrade Software
Events

Figure 43 Deploy Avamar vSphere Proxies

7.2 Avamar client configuration in Hyper-V

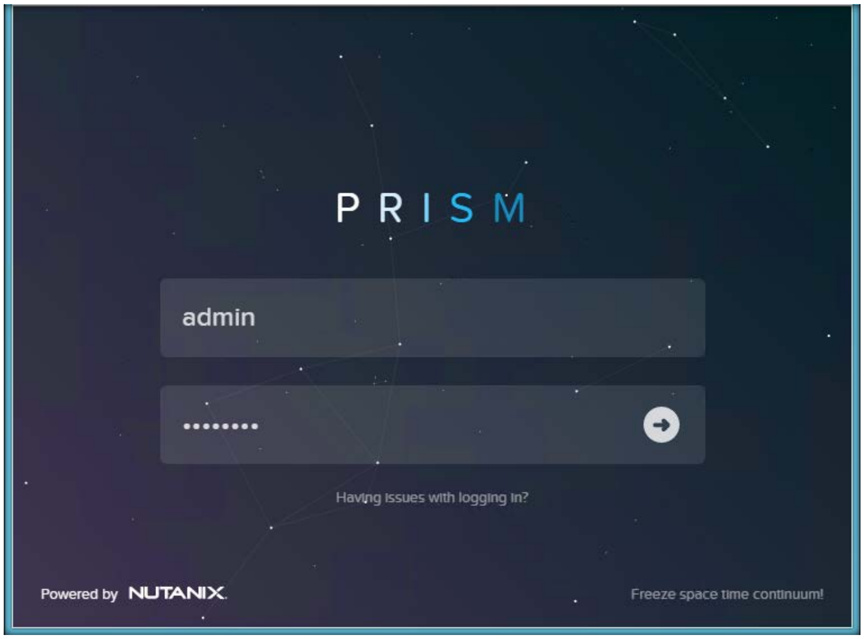
DPMC can install and configure the EMC Avamar Client and the EMC Avamar Backup Hyper-V VSS Plugin to an iSCSI target using Acropolis Block Services on each Windows host that exists on a cluster. This option becomes available once a Hyper-V cluster is discovered by DPMC or during initial setup.

NOTE: If multiple Hyper-V clusters are discovered by DPMC at the same time, you need to perform all steps in this section for each cluster.

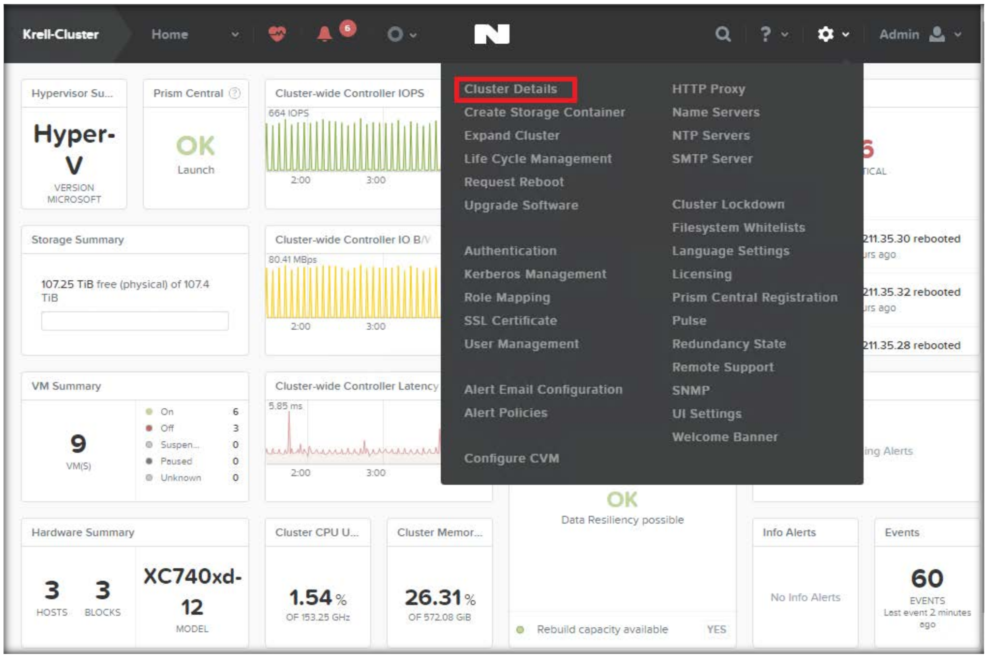
7.2.1 Setting iSCSI Data Services IP address

You need to set the iSCSI Data Services IP address in the Prism web interface to provide target discovery to clients and simplify external iSCSI configuration on clients with Acropolis Block Services.

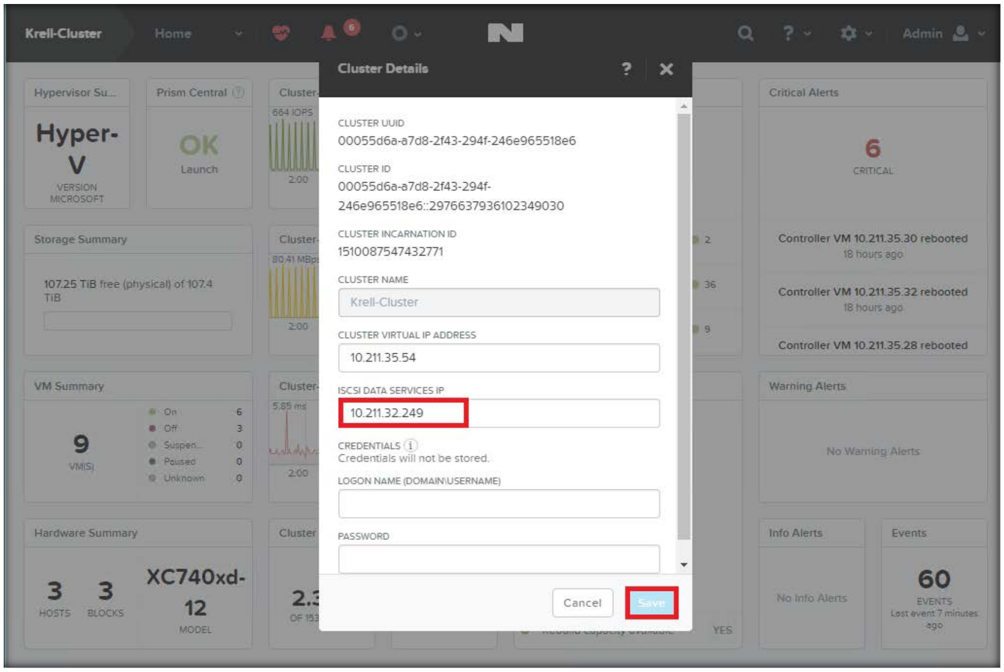
1. Access the Prism web page using the Nutanix cluster IP address and log in.



2. In the upper right corner of the page click on the **Settings** (gear tool) and select **Cluster Details**.



3. Enter the iSCSI Data Services IP address in the field and select **Save**.



Cluster Details

CLUSTER UUID
00055d6a-a7d8-2f43-294f-246e965518e6

CLUSTER ID
00055d6a-a7d8-2f43-294f-246e965518e6::2976637936102349030

CLUSTER INCARNATION ID
1510087547432771

CLUSTER NAME
Krell-Cluster

CLUSTER VIRTUAL IP ADDRESS
10.211.35.54

ISCSI DATA SERVICES IP
10.211.32.249

CREDENTIALS
Credentials will not be stored.

LOGON NAME (DOMAIN\USERNAME)

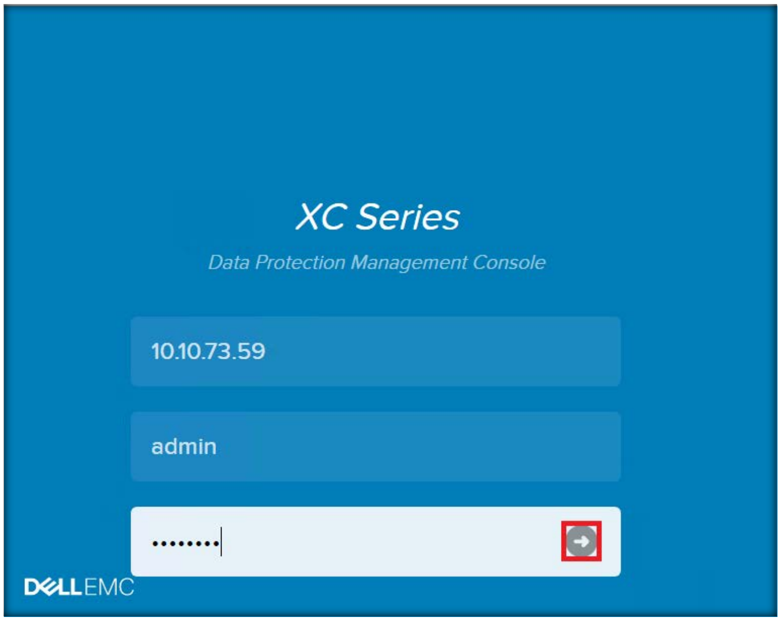
PASSWORD

7.2.2 Step 1: Configure Avamar Clients

DPMC performs a series of tasks to install the necessary applications correctly on all Windows hosts.

NOTE: Before you follow the steps to configure the Avamar clients, you must complete the steps for **Setting iSCSI Data Services IP address**.

1. Log in the DPMC by entering the Prism Central login information.


XC Series

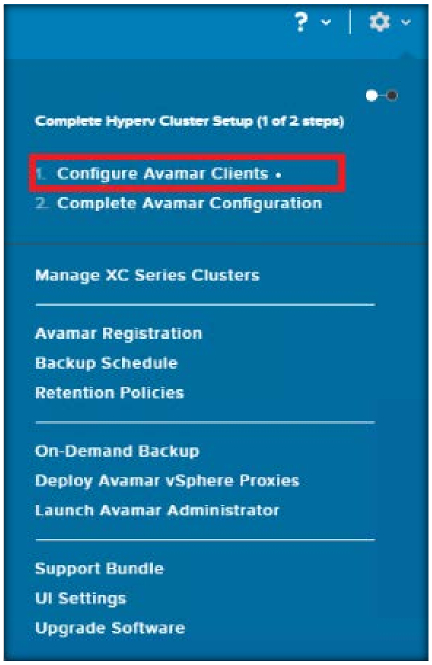
Data Protection Management Console

10.10.73.59

admin

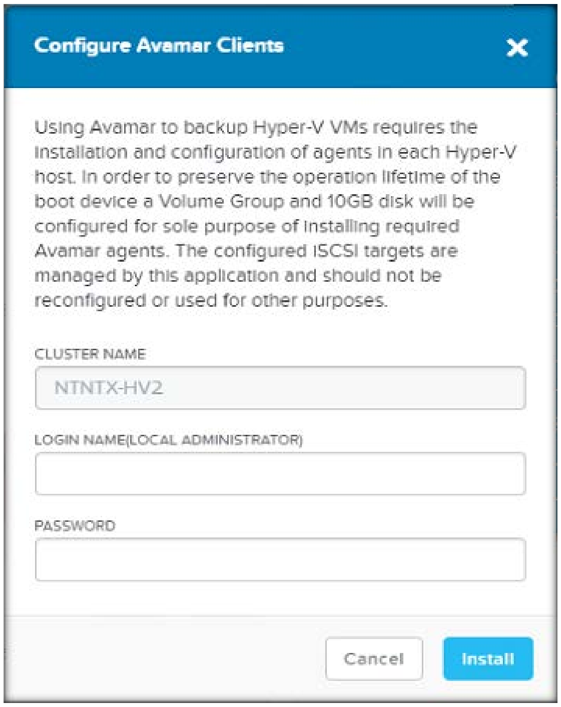
••••••••

2. To start step 1 of Hyper-V Cluster Setup, click on **Settings** (gear tool) in the upper right corner of the page and then select **Configure Avamar Client**.


?
Complete Hyperv Cluster Setup (1 of 2 steps)
1. Configure Avamar Clients •
2. Complete Avamar Configuration
Manage XC Series Clusters
Avamar Registration
Backup Schedule
Retention Policies
On-Demand Backup
Deploy Avamar vSphere Proxies
Launch Avamar Administrator
Support Bundle
UI Settings
Upgrade Software

3. Enter the local administrator credentials to initiate the client configuration on each host.

NOTE: This step may take some time, depending on the number of nodes in the cluster. Do not navigate away from the page during this time.



Configure Avamar Clients

Using Avamar to backup Hyper-V VMs requires the installation and configuration of agents in each Hyper-V host. In order to preserve the operation lifetime of the boot device a Volume Group and 10GB disk will be configured for sole purpose of installing required Avamar agents. The configured iSCSI targets are managed by this application and should not be reconfigured or used for other purposes.

CLUSTER NAME: NTNTX-HV2

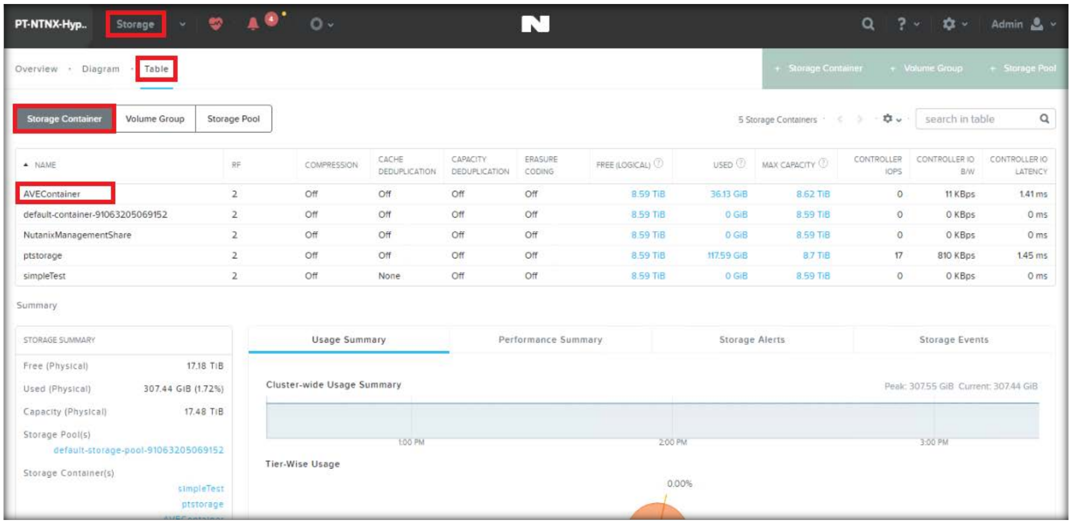
LOGIN NAME(LOCAL ADMINISTRATOR)

PASSWORD

A series of automated steps are executed and completed by DPMC automatically. In the event of a failure, identify the step on which the error occurred and then manually fix it by checking the following progression.

AVEContainer is created

4. A new Storage Container is created on the cluster with the name AVEContainer. To find it, go to the cluster’s Prism Web Console.
5. Navigate to the Storage page, then click **Table**, and then **Storage Container**.



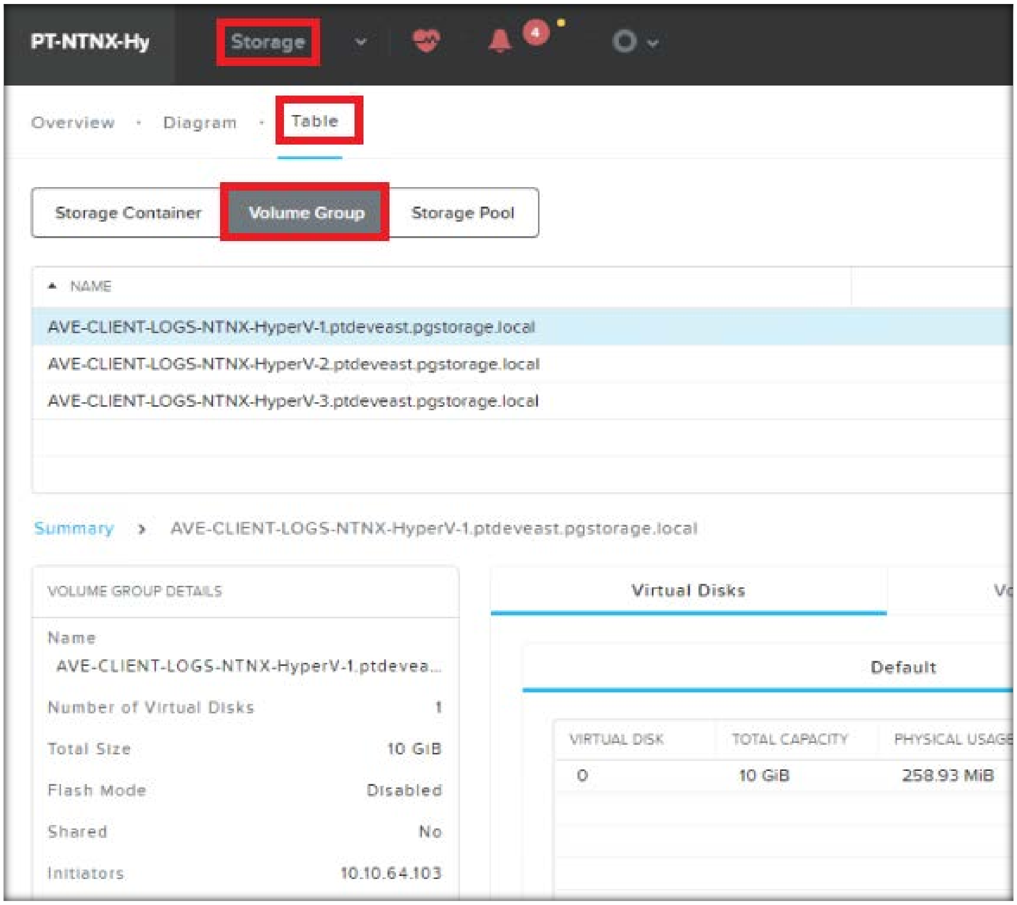
NAME	RF	COMPRESSION	CACHE DEDUPLICATION	CAPACITY DEDUPLICATION	ERASURE CODING	FREE (LOGICAL)	USED	MAX CAPACITY	CONTROLLER IOPS	CONTROLLER IO B/W	CONTROLLER IO LATENCY
AVEContainer	2	Off	Off	Off	Off	8.59 TiB	36.13 GiB	8.62 TiB	0	11 KBps	1.41 ms
default-container-91063205069152	2	Off	Off	Off	Off	8.59 TiB	0 GiB	8.59 TiB	0	0 KBps	0 ms
NutanixManagementShare	2	Off	Off	Off	Off	8.59 TiB	0 GiB	8.59 TiB	0	0 KBps	0 ms
ptstorage	2	Off	Off	Off	Off	8.59 TiB	117.59 GiB	8.7 TiB	17	810 KBps	1.45 ms
simpleTest	2	Off	None	Off	Off	8.59 TiB	0 GiB	8.59 TiB	0	0 KBps	0 ms

Summary

STORAGE SUMMARY	
Free (Physical)	17.18 TiB
Used (Physical)	307.44 GiB (1.72%)
Capacity (Physical)	17.48 TiB
Storage Pool(s)	default-storage-pool-91063205069152
Storage Container(s)	simpleTest ptstorage

Volume group is created

6. A Volume Groups with a 10GB disk is created for each Windows host. To find it, go to the cluster’s Prism Web Client.
7. Navigate to Storage page, then click on **Table**, and then **Volume Group**.
8. An iSCSI connection on each host is made to one of the Volume Groups as depicted in image below.



NAME
AVE-CLIENT-LOGS-NTNX-HyperV-1.ptdeveast.pgstorage.local
AVE-CLIENT-LOGS-NTNX-HyperV-2.ptdeveast.pgstorage.local
AVE-CLIENT-LOGS-NTNX-HyperV-3.ptdeveast.pgstorage.local

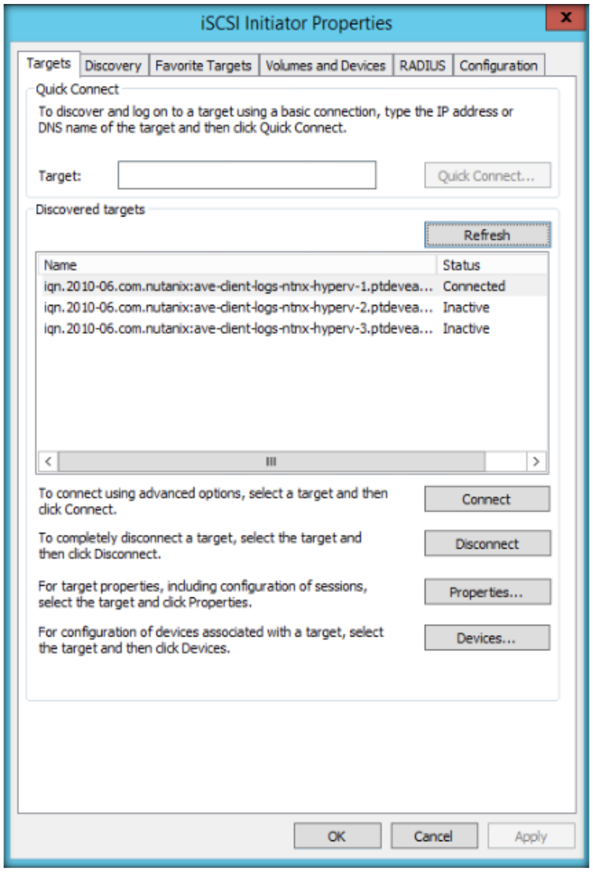
Summary > AVE-CLIENT-LOGS-NTNX-HyperV-1.ptdeveast.pgstorage.local

VOLUME GROUP DETAILS

Name	AVE-CLIENT-LOGS-NTNX-HyperV-1.ptdevea...
Number of Virtual Disks	1
Total Size	10 GiB
Flash Mode	Disabled
Shared	No
Initiators	10.10.64.103

VIRTUAL DISK	TOTAL CAPACITY	PHYSICAL USAGE
0	10 GiB	258.93 MiB

9. Connect **Volume Group** to the iSCSI Target by going to the Remote Desktop, then to the Windows Host and then open the iSCSI Initiator.
10. The new disk is then initialized and formatted with an NTFS partition as depicted in image below.



To discover and log on to a target using a basic connection, type the IP address or DNS name of the target and then click Quick Connect.

Target:

Name	Status
iqn.2010-06.com.nutanix:ave-client-logs-ntnx-hyperv-1.ptdevea...	Connected
iqn.2010-06.com.nutanix:ave-client-logs-ntnx-hyperv-2.ptdevea...	Inactive
iqn.2010-06.com.nutanix:ave-client-logs-ntnx-hyperv-3.ptdevea...	Inactive

To connect using advanced options, select a target and then click Connect.

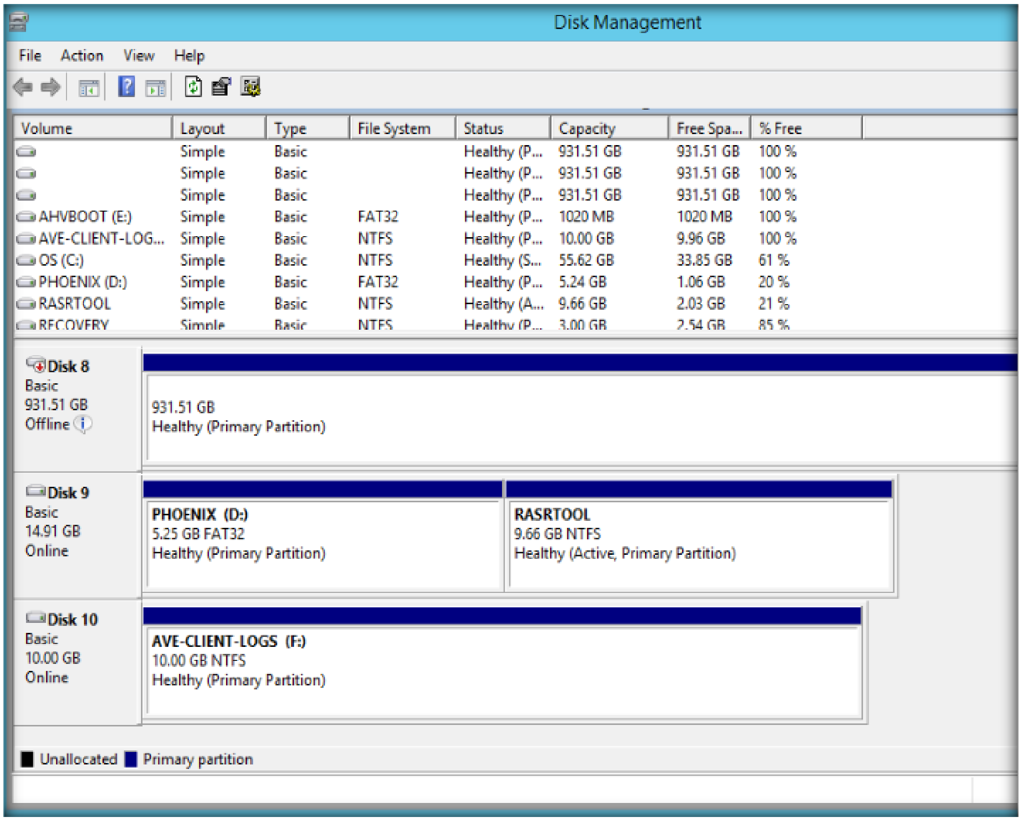
To completely disconnect a target, select the target and then click Disconnect.

For target properties, including configuration of sessions, select the target and click Properties.

For configuration of devices associated with a target, select the target and then click Devices.

A new disk is initialized and formatted

11. The name of the disk is AVE-CLIENT-LOGS and is assigned a drive letter. To find it, open Disk Management and locate the last disk.



Disk Management

Volume	Layout	Type	File System	Status	Capacity	Free Spa...	% Free
	Simple	Basic		Healthy (P...	931.51 GB	931.51 GB	100 %
	Simple	Basic		Healthy (P...	931.51 GB	931.51 GB	100 %
	Simple	Basic		Healthy (P...	931.51 GB	931.51 GB	100 %
AHVBOOT (E:)	Simple	Basic	FAT32	Healthy (P...	1020 MB	1020 MB	100 %
AVE-CLIENT-LOG...	Simple	Basic	NTFS	Healthy (P...	10.00 GB	9.96 GB	100 %
OS (C:)	Simple	Basic	NTFS	Healthy (S...	55.62 GB	33.85 GB	61 %
PHOENIX (D:)	Simple	Basic	FAT32	Healthy (P...	5.24 GB	1.06 GB	20 %
RASRTOOL	Simple	Basic	NTFS	Healthy (A...	9.66 GB	2.03 GB	21 %
RECOVERY	Simple	Basic	NTFS	Healthy (P...	3.00 GB	2.54 GB	85 %

Disk 8
Basic
931.51 GB
Offline

931.51 GB
Healthy (Primary Partition)

Disk 9
Basic
14.91 GB
Online

PHOENIX (D:)
5.25 GB FAT32
Healthy (Primary Partition)

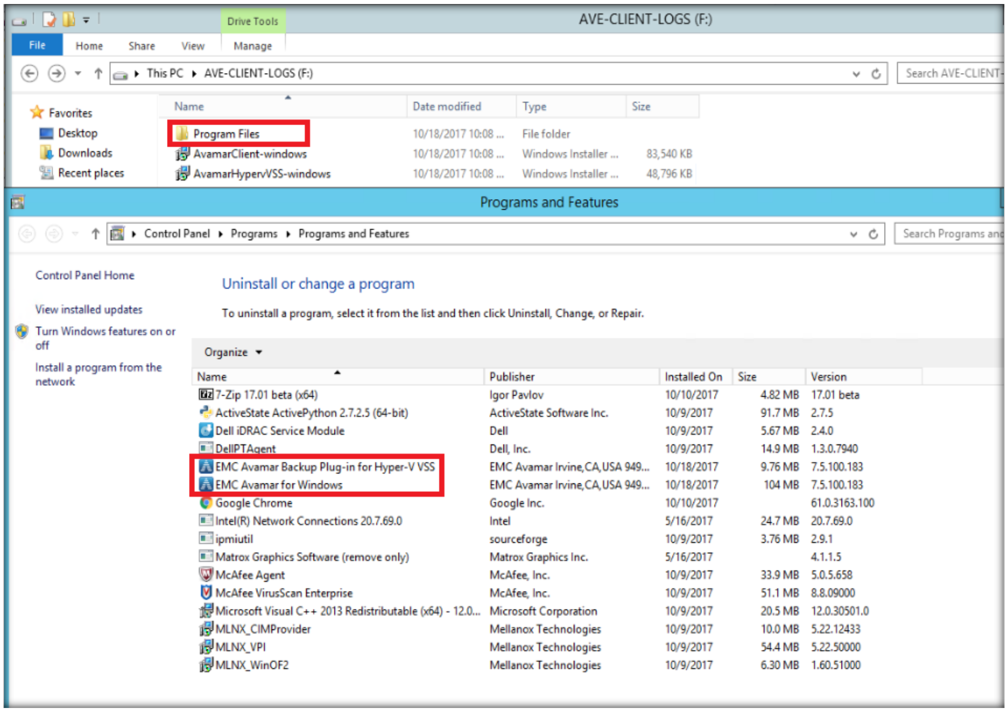
RASRTOOL
9.66 GB NTFS
Healthy (Active, Primary Partition)

Disk 10
Basic
10.00 GB
Online

AVE-CLIENT-LOGS (F:)
10.00 GB NTFS
Healthy (Primary Partition)

Avamar Client and the Avamar Hyper-V VSS Plugin are installed.

12. On each host, the Avamar Client and the Avamar Hyper-V VSS Plugin are installed on the AVE-CLIENT-LOGS disk.



AVE-CLIENT-LOGS (F:)

This PC ▸ AVE-CLIENT-LOGS (F:)

Name	Date modified	Type	Size
Program Files	10/18/2017 10:08 ...	File folder	
AvamarClient-windows	10/18/2017 10:08 ...	Windows Installer ...	83,540 KB
AvamarHypervVSS-windows	10/18/2017 10:08 ...	Windows Installer ...	48,796 KB

Programs and Features

Control Panel ▸ Programs ▸ Programs and Features

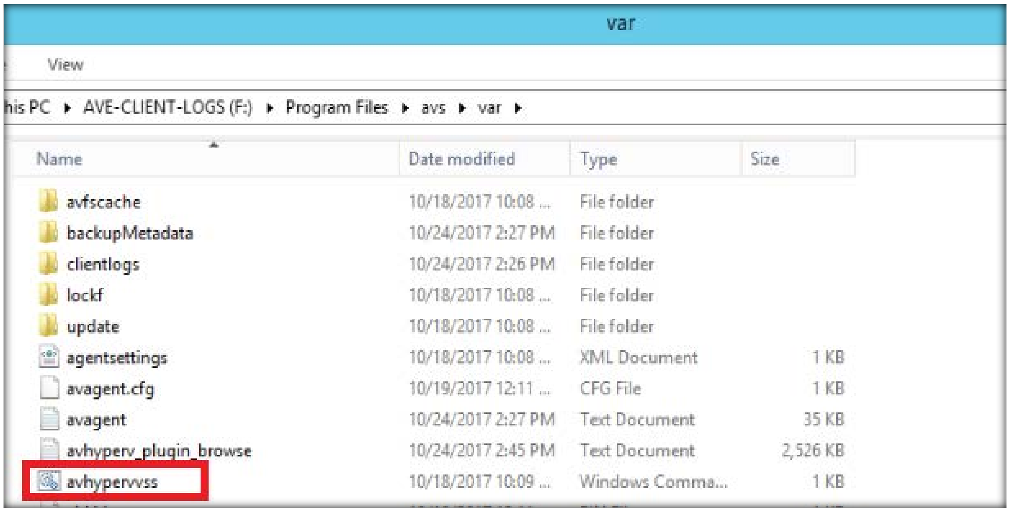
Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

Name	Publisher	Installed On	Size	Version
7-Zip 17.01 beta (x64)	Igor Pavlov	10/10/2017	4.82 MB	17.01 beta
ActiveState ActivePython 2.7.2.5 (64-bit)	ActiveState Software Inc.	10/9/2017	91.7 MB	2.7.5
Dell iDRAC Service Module	Dell	10/9/2017	5.67 MB	2.4.0
DellPTAgent	Dell, Inc.	10/9/2017	14.9 MB	1.3.0.7940
EMC Avamar Backup Plug-in for Hyper-V VSS	EMC Avamar Irvine,CA,USA 949...	10/18/2017	9.76 MB	7.5.100.183
EMC Avamar for Windows	EMC Avamar Irvine,CA,USA 949...	10/18/2017	104 MB	7.5.100.183
Google Chrome	Google Inc.	10/10/2017		61.0.3163.100
Intel(R) Network Connections 20.7.69.0	Intel	5/16/2017	24.7 MB	20.7.69.0
ipmiutil	sourceforge	10/9/2017	3.76 MB	2.9.1
Matrox Graphics Software (remove only)	Matrox Graphics Inc.	5/16/2017		4.1.1.5
McAfee Agent	McAfee, Inc.	10/9/2017	33.9 MB	5.0.5.658
McAfee VirusScan Enterprise	McAfee, Inc.	10/9/2017	51.1 MB	8.8.09000
Microsoft Visual C++ 2013 Redistributable (x64) - 12.0...	Microsoft Corporation	10/9/2017	20.5 MB	12.0.30501.0
MLNX_CIMProvider	Mellanox Technologies	10/9/2017	10.0 MB	5.22.12433
MLNX_VPI	Mellanox Technologies	10/9/2017	54.4 MB	5.22.50000
MLNX_WinOF2	Mellanox Technologies	10/9/2017	6.30 MB	1.60.51000

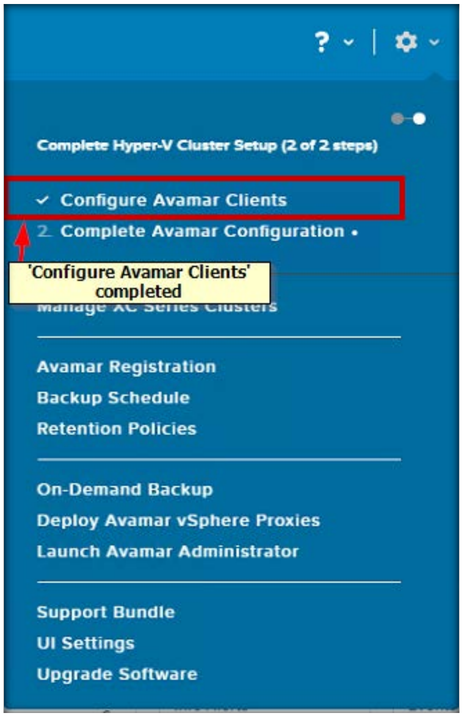
`avhypervvss.cmd` configuration file is created:

The `avhypervvss.cmd` configuration file is created in `\Program Files\avs\var`



Name	Date modified	Type	Size
avfscache	10/18/2017 10:08 ...	File folder	
backupMetadata	10/24/2017 2:27 PM	File folder	
clientlogs	10/24/2017 2:26 PM	File folder	
lockf	10/18/2017 10:08 ...	File folder	
update	10/18/2017 10:08 ...	File folder	
agentsettings	10/18/2017 10:08 ...	XML Document	1 KB
avagent.cfg	10/19/2017 12:11 ...	CFG File	1 KB
avagent	10/24/2017 2:27 PM	Text Document	35 KB
avhyperv_plugin_browse	10/24/2017 2:45 PM	Text Document	2,526 KB
avhypervvss	10/18/2017 10:09 ...	Windows Comma...	1 KB

13. Once the configuration has completed, the first step is displayed as completed in the **Settings** (gear tool) prompt. Proceed to Running Windows Cluster Configuration wizard before attempting step 2.

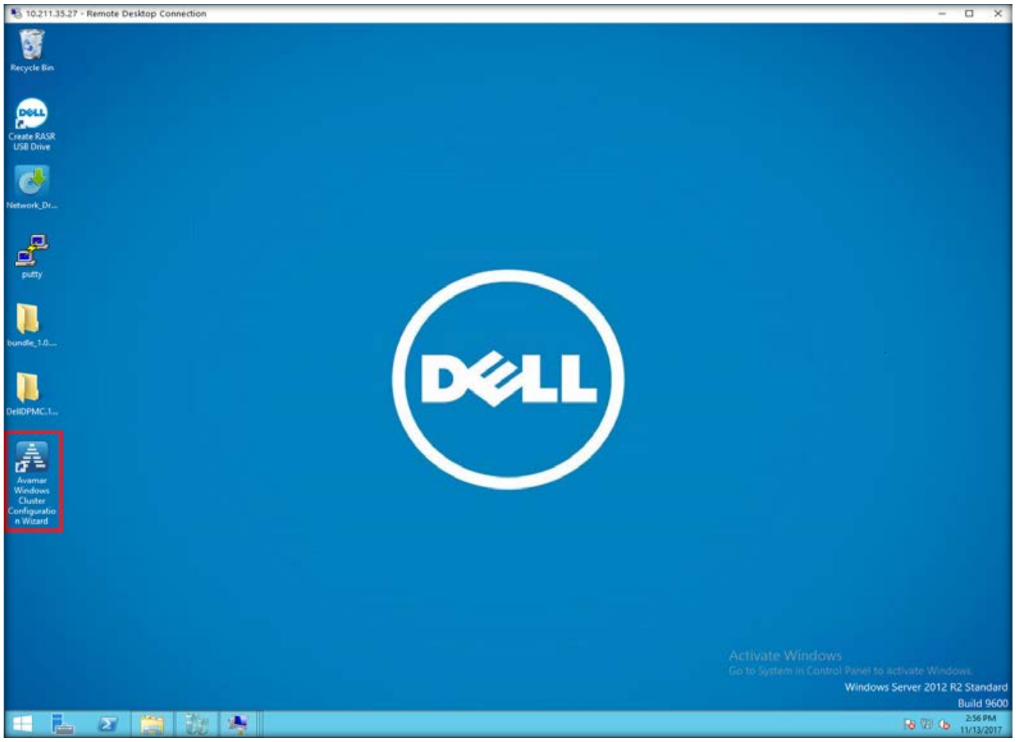

?
Complete Hyper-V Cluster Setup (2 of 2 steps)
✓ Configure Avamar Clients
2. Complete Avamar Configuration •
Manage XC Series Clusters
Avamar Registration
Backup Schedule
Retention Policies
On-Demand Backup
Deploy Avamar vSphere Proxies
Launch Avamar Administrator
Support Bundle
UI Settings
Upgrade Software

'Configure Avamar Clients' completed

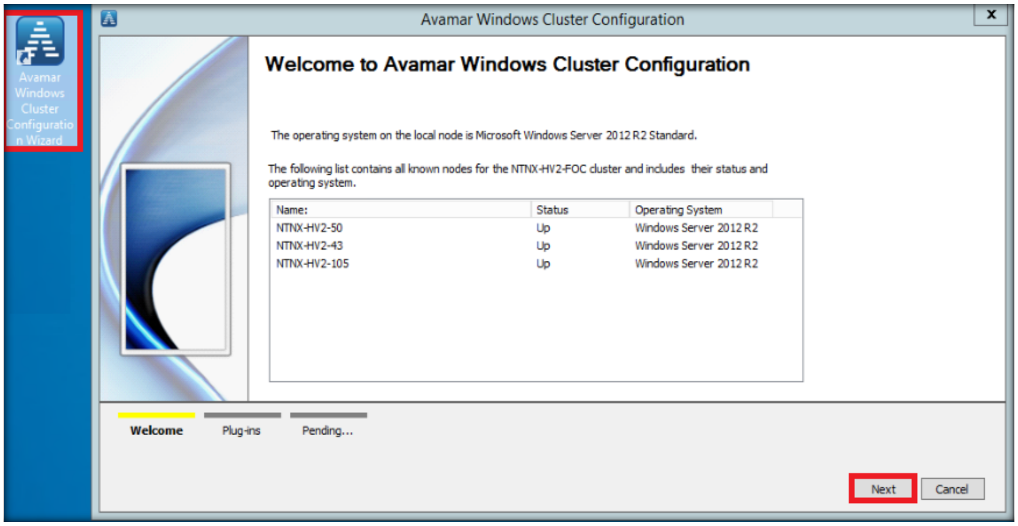
7.2.3 Running Windows Cluster Configuration wizard

Once the **Configure Avamar Clients** process is successfully completed, the next process is to run Windows Cluster Configuration wizard.

1. Remote desktop into one of the Windows hosts. Double click on the **Avamar Windows Cluster Configuration Wizard** icon on the desktop to launch the wizard.


10.211.35.27 - Remote Desktop Connection
Recycle Bin
Create RASR USB Drive
Network_Dr...
putty
bundle_1.0....
DellDPMC.1...
Avamar Windows Cluster Configuration Wizard
DELL
Activate Windows
Go to System in Control Panel to activate Windows.
Windows Server 2012 R2 Standard
Build 9600
2:56 PM
11/13/2017

2. The first page displays all the Windows hosts that are part of the Windows Failover Cluster. Confirm that the information is correct and then click **Next**.


Avamar Windows Cluster Configuration Wizard
Avamar Windows Cluster Configuration
Welcome
Plug-ins
Pending...
Next
Cancel

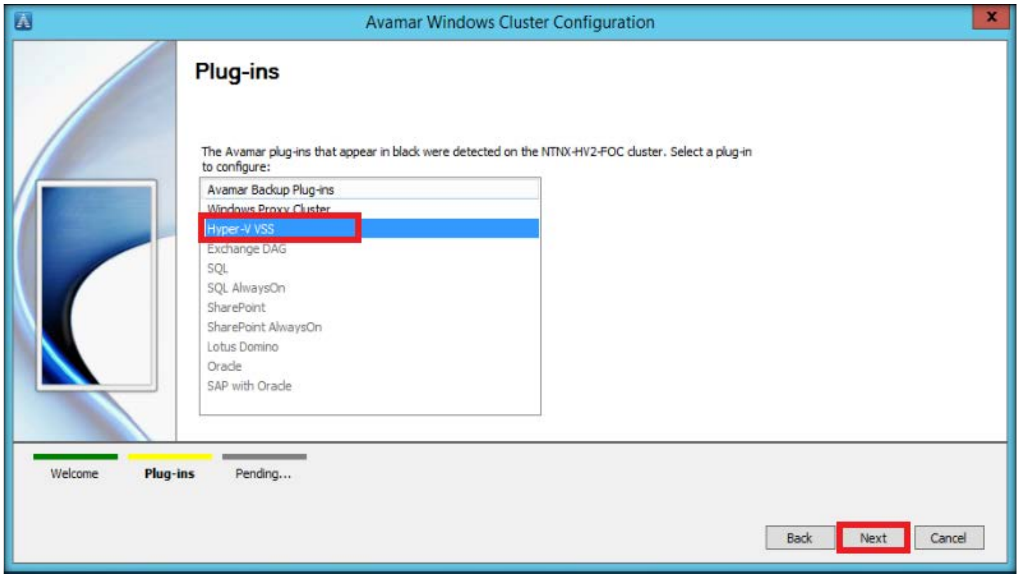
Welcome to Avamar Windows Cluster Configuration

The operating system on the local node is Microsoft Windows Server 2012 R2 Standard.

The following list contains all known nodes for the NTNX-HV2-FOC cluster and includes their status and operating system.

Name:	Status	Operating System
NTNX-HV2-50	Up	Windows Server 2012 R2
NTNX-HV2-43	Up	Windows Server 2012 R2
NTNX-HV2-105	Up	Windows Server 2012 R2

3. On the Plug-ins page, select **Hyper-V VSS** and then click **Next**.

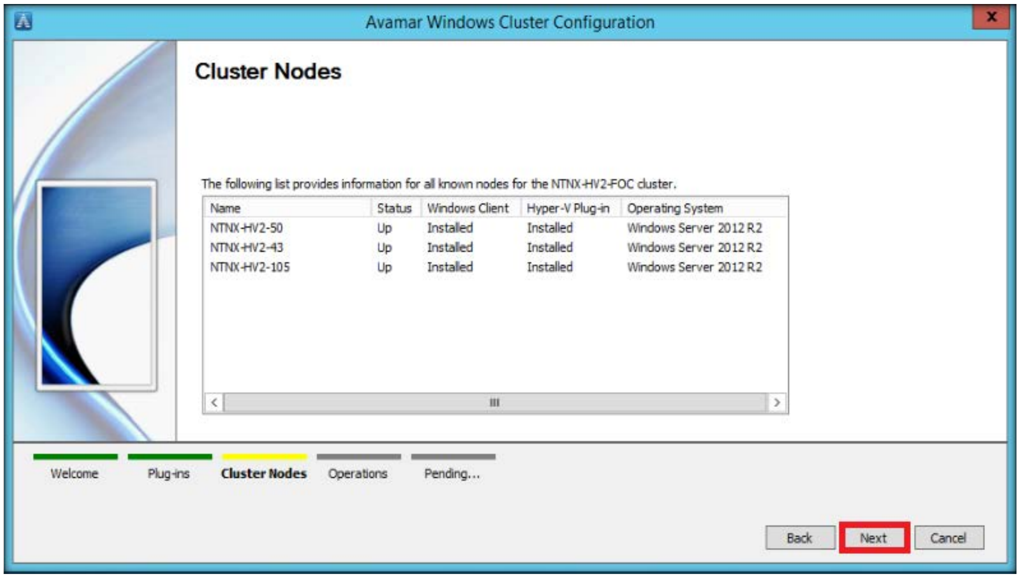


Plug-ins

The Avamar plug-ins that appear in black were detected on the NTNX-HV2-FOC cluster. Select a plug-in to configure:

- Avamar Backup Plug-ins
- Windows Proxy Cluster
- Hyper-V VSS
- Exchange DAG
- SQL
- SQL AlwaysOn
- SharePoint
- SharePoint AlwaysOn
- Lotus Domino
- Oracle
- SAP with Oracle

4. Confirm that the correct *Cluster Nodes* are displayed and that they all have the Avamar Windows Client and the Hyper-V VSS Plug-In installed. Click **Next**.

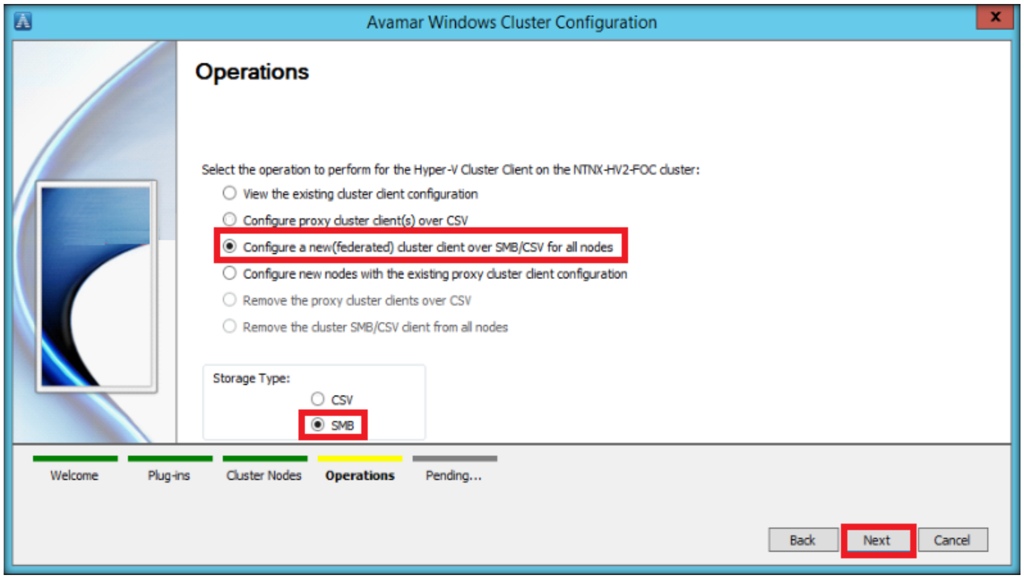


Cluster Nodes

The following list provides information for all known nodes for the NTNX-HV2-FOC cluster.

Name	Status	Windows Client	Hyper-V Plug-in	Operating System
NTNX-HV2-50	Up	Installed	Installed	Windows Server 2012 R2
NTNX-HV2-43	Up	Installed	Installed	Windows Server 2012 R2
NTNX-HV2-105	Up	Installed	Installed	Windows Server 2012 R2

5. On the Operations page, select Configure a new (federated) cluster client over SMB/CSV for all nodes. For Storage Type, select SMB. Click Next.



Avamar Windows Cluster Configuration

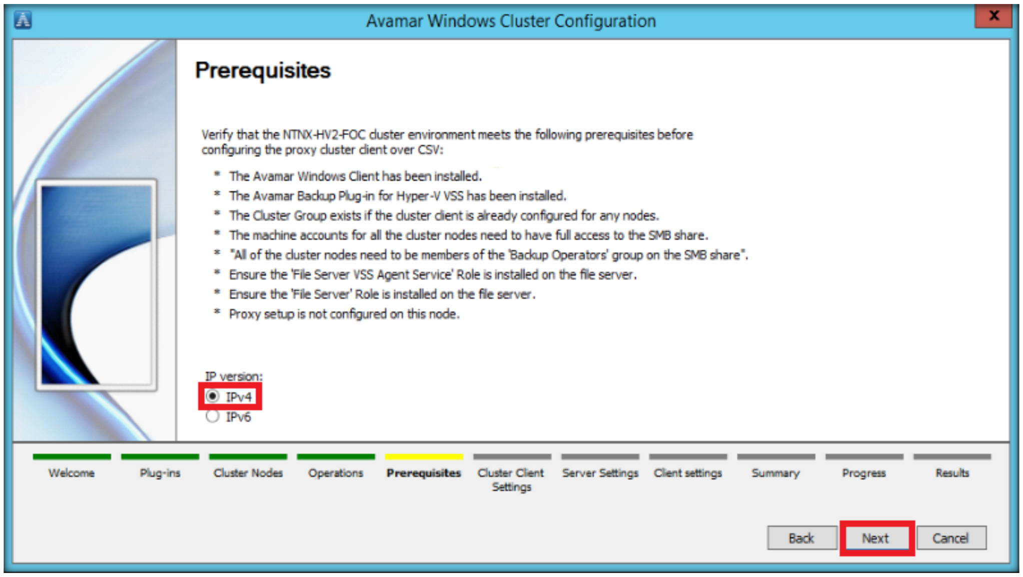
Operations

Select the operation to perform for the Hyper-V Cluster Client on the NTNX-HV2-FOC cluster:

○ View the existing cluster client configuration
○ Configure proxy cluster client(s) over CSV
● Configure a new(federated) cluster client over SMB/CSV for all nodes
○ Configure new nodes with the existing proxy cluster client configuration
○ Remove the proxy cluster clients over CSV
○ Remove the cluster SMB/CSV client from all nodes

Storage Type:
○ CSV
● SMB

6. On the Prerequisites page, select **IPv4** as your IP version and then click **Next**.



Avamar Windows Cluster Configuration

Prerequisites

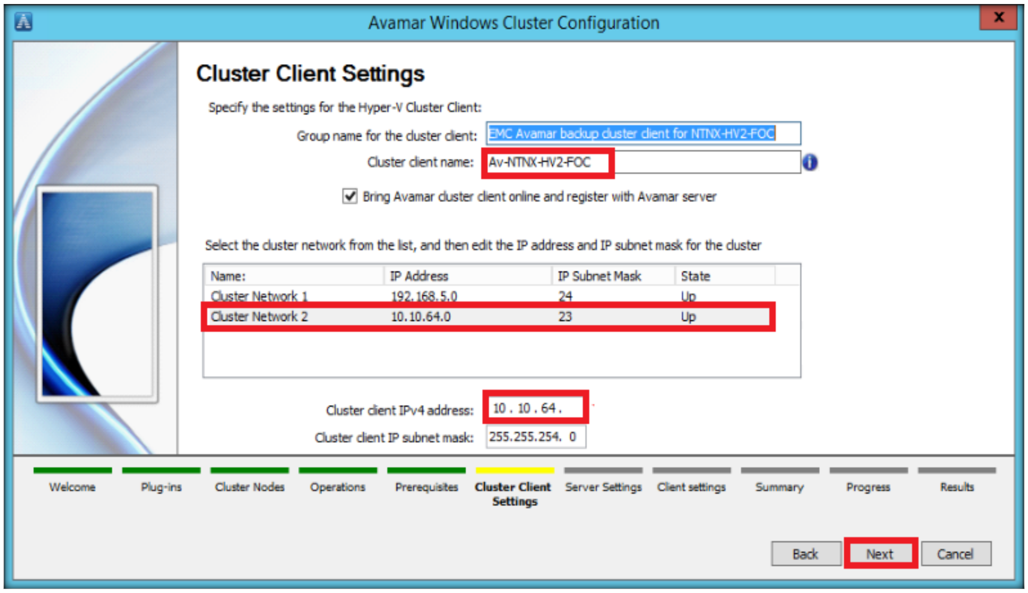
Verify that the NTNX-HV2-FOC cluster environment meets the following prerequisites before configuring the proxy cluster client over CSV:

* The Avamar Windows Client has been installed.
* The Avamar Backup Plug-in for Hyper-V VSS has been installed.
* The Cluster Group exists if the cluster client is already configured for any nodes.
* The machine accounts for all the cluster nodes need to have full access to the SMB share.
* "All of the cluster nodes need to be members of the 'Backup Operators' group on the SMB share".
* Ensure the 'File Server VSS Agent Service' Role is installed on the file server.
* Ensure the 'File Server' Role is installed on the file server.
* Proxy setup is not configured on this node.

IP version:
● IPv4
○ IPv6

7. Before proceeding with the **Cluster Client Settings** section, make sure that you have an available IP address for the new Avamar cluster client VM. If no errors appear, click **Next.**

NOTE: The cluster client name **must be under 15 characters** long. Dell EMC recommends that the name does not contain any special characters. Hyphens are used in the name in this example but should be avoided. Also, ensure that this name does not already exist on your DNS server. Avamar creates a new DNS entry with the name and IP address that you provide.



Cluster Client Settings

Specify the settings for the Hyper-V Cluster Client:

Group name for the cluster client: EMC Avamar backup cluster client for NTNX-HV2-FOC

Cluster client name: Av-NTNX-HV2-FOC

☑ Bring Avamar cluster client online and register with Avamar server

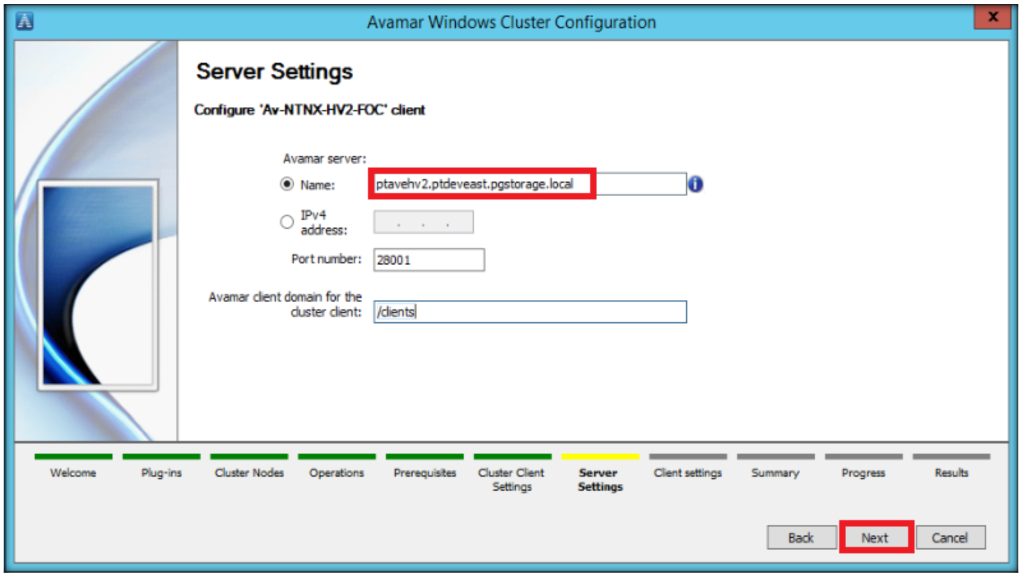
Select the cluster network from the list, and then edit the IP address and IP subnet mask for the cluster

Name:	IP Address	IP Subnet Mask	State
Cluster Network 1	192.168.5.0	24	Up
Cluster Network 2	10.10.64.0	23	Up

Cluster client IPv4 address: 10 . 10 . 64 .

Cluster client IP subnet mask: 255.255.254. 0

8. Under the **Server Settings** section, provide your Avamar server information. Use a server Name and provide an FQDN. Keep the Avamar client domain for the cluster client at the default value (/clients). If no errors appear, click **Next**.



Server Settings

Configure 'Av-NTNX-HV2-FOC' client

Avamar server:

● Name: ptavehv2.ptdeveast.pgstorage.local

○ IPv4 address: . . .

Port number: 28001

Avamar client domain for the cluster client: /clients

9. On the **Client Settings** page, you are prompted for paths to two directories:

   var directory
   SYSDIR directory

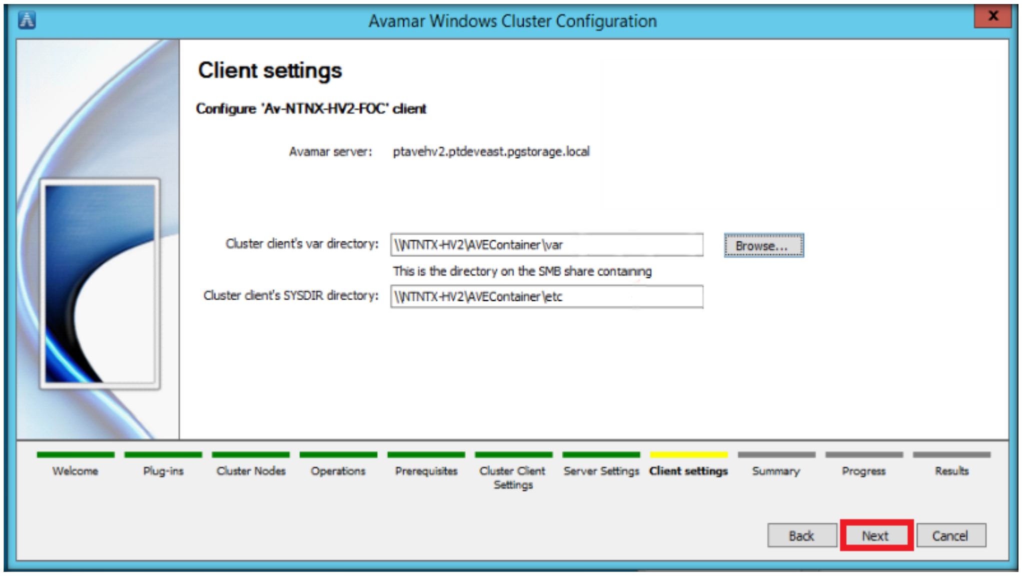
   Provide the path to the **AVEContainer**.

   The location of the container should be:

   `\\<CLUSTERNAME>\AVEContainer`
   The recommended path to use is:

```
\\<CLUSTERNAME>\AVEContainer\var
\\<CLUSTERNAME>\AVEContainer\etc
```

NOTE: Notate the location of the Cluster client's var directory because it will be used later for the final Complete Avamar Configuration step in the DPMC Web Console.



Client settings

Configure 'Av-NTNX-HV2-FOC' client

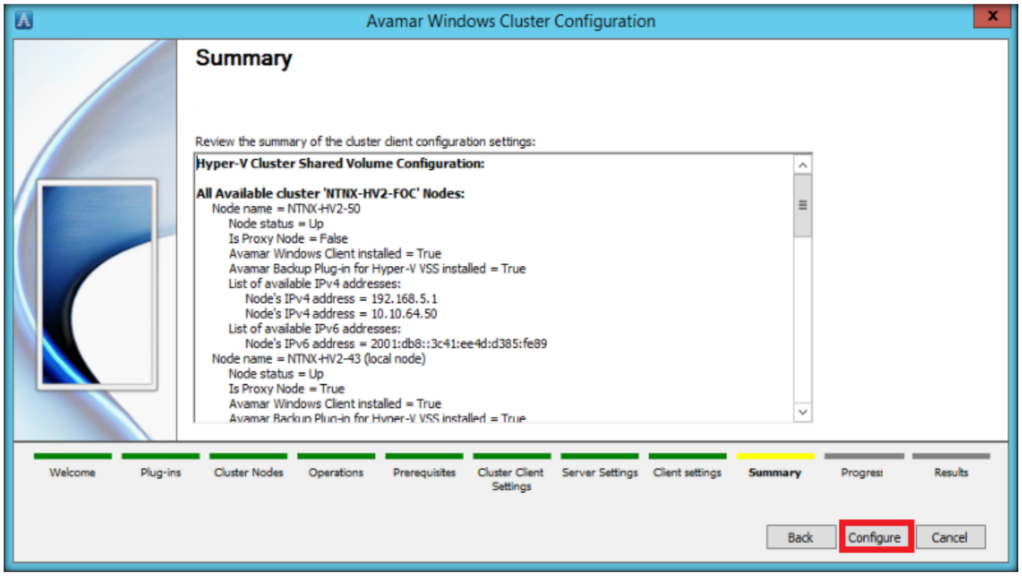
Avamar server: ptavehv2.ptdeveast.pgstorage.local

Cluster client's var directory: \\NTNTX-HV2\AVEContainer\var

This is the directory on the SMB share containing

Cluster client's SYSDIR directory: \\NTNTX-HV2\AVEContainer\etc

10. The final **Summary** page lists information that the Wizard uses to set up the Federated cluster. Confirm that the information is correct and then click **Configure**.



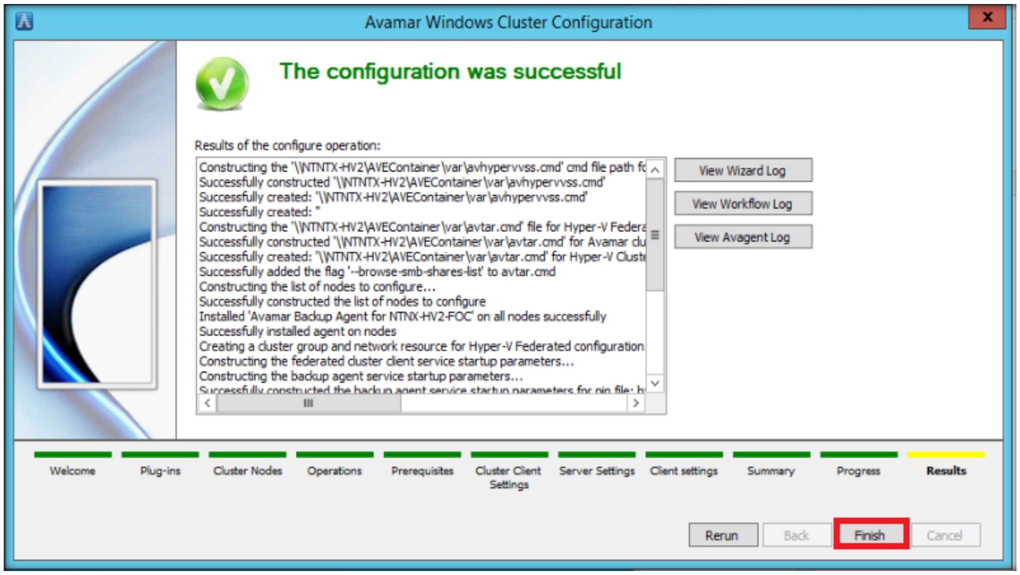
Summary

Review the summary of the cluster client configuration settings:

```
Hyper-V Cluster Shared Volume Configuration:

All Available cluster 'NTNX-HV2-FOC' Nodes:
   Node name = NTNX-HV2-50
      Node status = Up
      Is Proxy Node = False
      Avamar Windows Client installed = True
      Avamar Backup Plug-in for Hyper-V VSS installed = True
      List of available IPv4 addresses:
         Node's IPv4 address = 192.168.5.1
         Node's IPv4 address = 10.10.64.50
      List of available IPv6 addresses:
         Node's IPv6 address = 2001:db8::3c41:ee4d:d385:fe89
   Node name = NTNX-HV2-43 (local node)
      Node status = Up
      Is Proxy Node = True
      Avamar Windows Client installed = True
      Avamar Backup Plug-in for Hyper-V VSS installed = True
```

11. After the Federated Cluster is successfully created, the follow page is displayed.



Results of the configure operation:

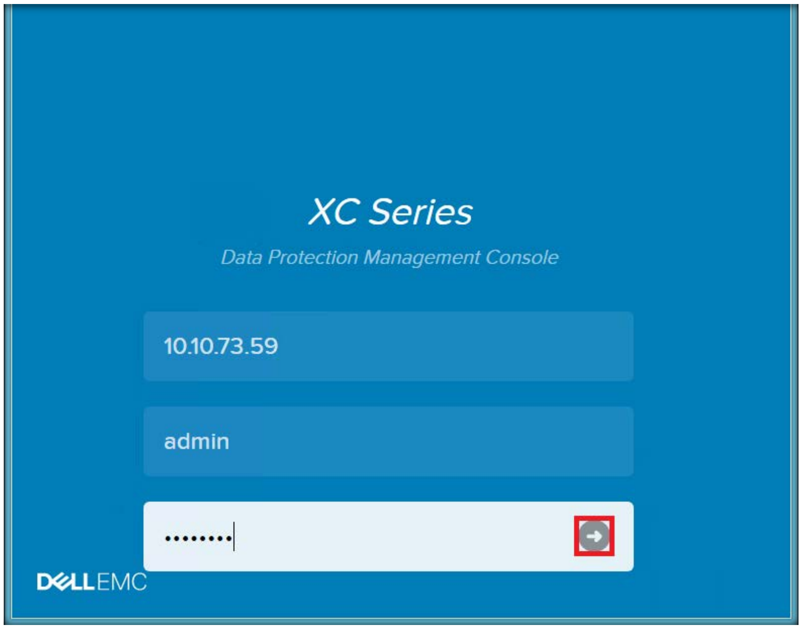
```
Constructing the '\\NTNTX-HV2\AVEContainer\var\avhypervvss.cmd' cmd file path fo
Successfully constructed '\\NTNTX-HV2\AVEContainer\var\avhypervvss.cmd'
Successfully created: '\\NTNTX-HV2\AVEContainer\var\avhypervvss.cmd'
Successfully created: ''
Constructing the '\\NTNTX-HV2\AVEContainer\var\avtar.cmd' file for Hyper-V Federa
Successfully constructed '\\NTNTX-HV2\AVEContainer\var\avtar.cmd' for Avamar clu
Successfully created: '\\NTNTX-HV2\AVEContainer\var\avtar.cmd' for Hyper-V Cluste
Successfully added the flag '--browse-smb-shares-list' to avtar.cmd
Constructing the list of nodes to configure...
Successfully constructed the list of nodes to configure
Installed 'Avamar Backup Agent for NTNX-HV2-FOC' on all nodes successfully
Successfully installed agent on nodes
Creating a cluster group and network resource for Hyper-V Federated configuration.
Constructing the federated cluster client service startup parameters...
Constructing the backup agent service startup parameters...
Successfully constructed the backup agent service startup parameters for pin file: h
```

NOTE: If the wizard was unsuccessful, make sure the cluster client name does not contain any special characters.

7.2.4 Step 2: Complete Avamar Configuration

This is the final step in the configuration process which sets up the Avamar federated cluster.

1. Log into the DPMC by entering the Prism Central login information.



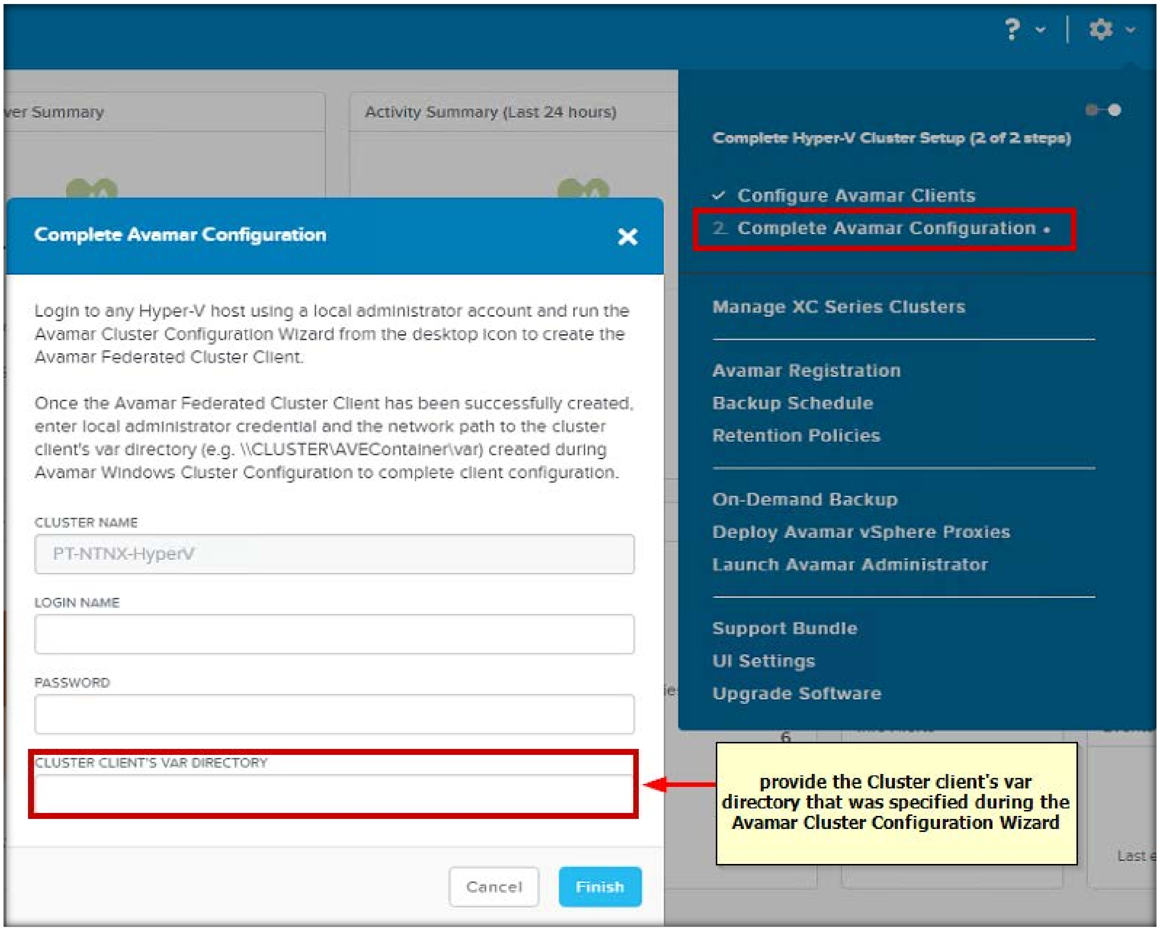
10.10.73.59

admin

••••••••

2. Click on **Settings** (gear tool) in the upper right corner of the page and select **Complete Avamar Configuration.**
3. Provide the credentials for a user with administrative rights (for example, local Administrator).
4. In the **PATH** field enter the cluster client's var directory specified during the Avamar Cluster Configuration wizard.

5. Confirm that the information is correct and then click **Finish**.


ver Summary
Activity Summary (Last 24 hours)
Complete Hyper-V Cluster Setup (2 of 2 steps)
✓ Configure Avamar Clients
2. Complete Avamar Configuration •
Manage XC Series Clusters
Avamar Registration
Backup Schedule
Retention Policies
On-Demand Backup
Deploy Avamar vSphere Proxies
Launch Avamar Administrator
Support Bundle
UI Settings
Upgrade Software
Cancel
Finish

Complete Avamar Configuration

Login to any Hyper-V host using a local administrator account and run the Avamar Cluster Configuration Wizard from the desktop icon to create the Avamar Federated Cluster Client.

Once the Avamar Federated Cluster Client has been successfully created, enter local administrator credential and the network path to the cluster client's var directory (e.g. \\CLUSTER\AVEContainer\var) created during Avamar Windows Cluster Configuration to complete client configuration.

CLUSTER NAME: PT-NTNX-HyperV

LOGIN NAME:

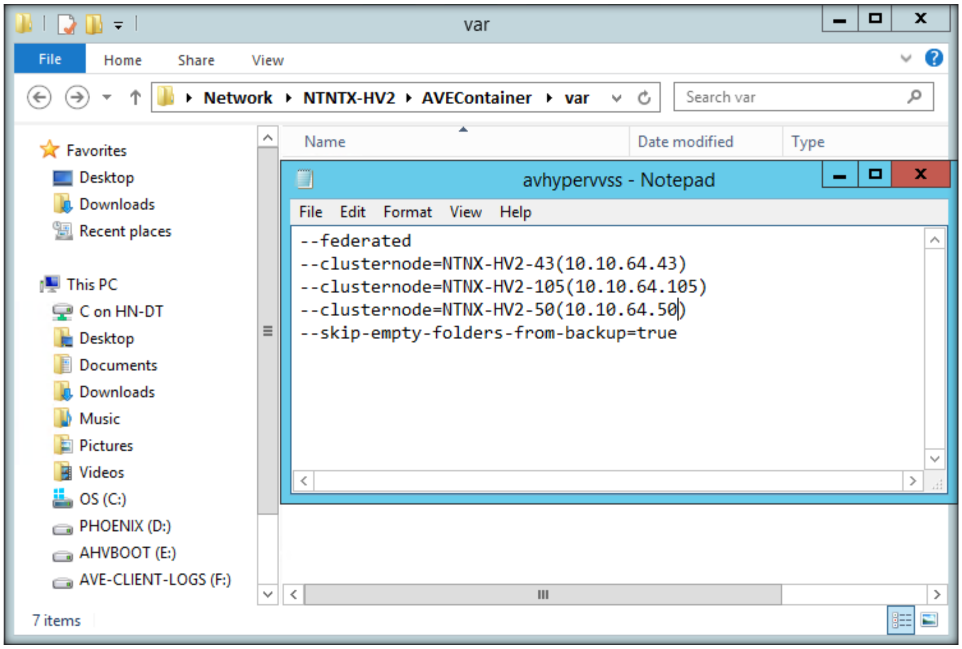
PASSWORD:

CLUSTER CLIENT'S VAR DIRECTORY:

provide the Cluster client's var directory that was specified during the Avamar Cluster Configuration Wizard

6. Execution above concludes Step 2. In the event of a failure at any point during the process. You can finish or fix the configuration manually by completing the following steps:

   a. Remote Desktop onto any of the Windows Host.
   b. Navigate to the Cluster client’s var directory path.
   c. In that directory, locate the avhypervvss.cmd file.
   d. Right-click on the file and click **Edit**.
   e. Make sure the file has data and format similar to the image below.



```
--federated
--clusternode=NTNX-HV2-43(10.10.64.43)
--clusternode=NTNX-HV2-105(10.10.64.105)
--clusternode=NTNX-HV2-50(10.10.64.50)
--skip-empty-folders-from-backup=true
```

7. Save and exit the file.

NOTE: If the configuration is completed manually, the DPMC Web Console will continue to prompt you to complete the Avamar configuration. Contact Dell.com/support for assistance.

8 Runtime backup management

DPMC provides many options for runtime backup management. You can use the drop-down menu from the **Settings** (gear tool) to access and manage the backup activity during runtime.

A list of helpful options available during runtime include:

- Manage Nutanix Cluster
- Avamar Registration
- Backup Schedule
- Retention Policies
- On-Demand Backup
- Deploy Avamar vSphere Proxies (ESXi only)
- Launch Avamar Administrator

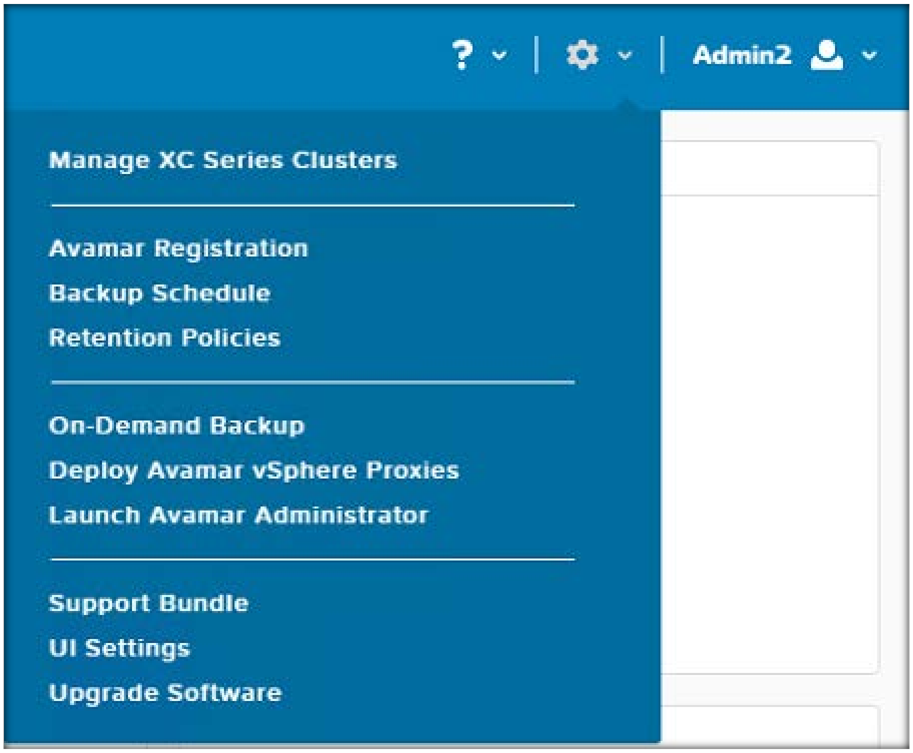


Figure 44 Runtime backup management

8.1 Manage Nutanix Clusters

If you want to manage the backup protection at a cluster level, during runtime, you can do it from this menu. You can select the monitoring status, auto protect the clusters (all VMs within the cluster) and add the default retention policy. This feature is useful when a new cluster is added and needs to be managed.

Select the DPMC monitoring level for each XC Series from the following:

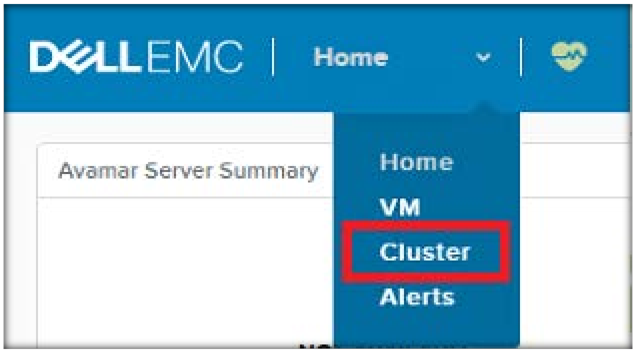
- **None** – DPMC performs no action. You can still perform manual operations on VMs.
- **Notify Only** – DPMC sends a Warning alert every time a new VM is detected on the cluster.
- **Notify and Auto-protect** – DPMC automatically protects a new VM with the chosen retention policy when it is detected and notifies the user of this action.

This option is described in detail in the XC Series Cluster submenu section.

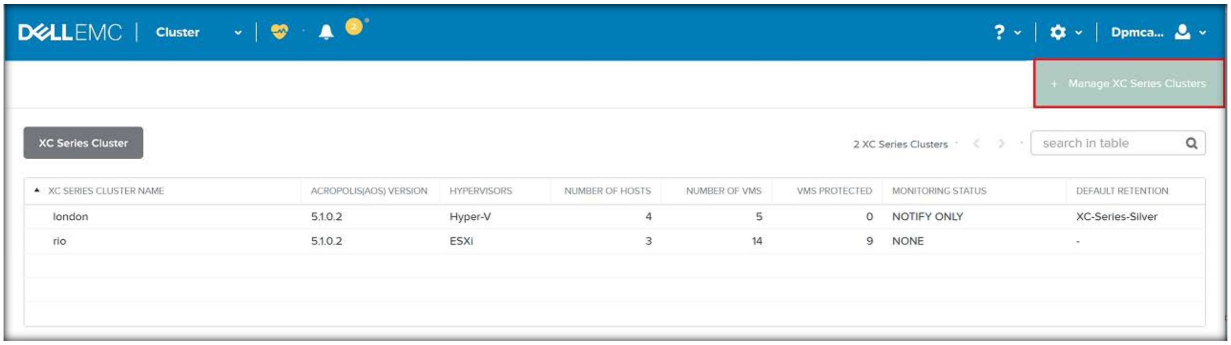
8.1.1 Configure Notify and Auto-protect

The following procedure outlines the steps to configure automatic protection of VMs on a cluster through DPMC.

1. From DPMC, navigate to **Home>Cluster**.

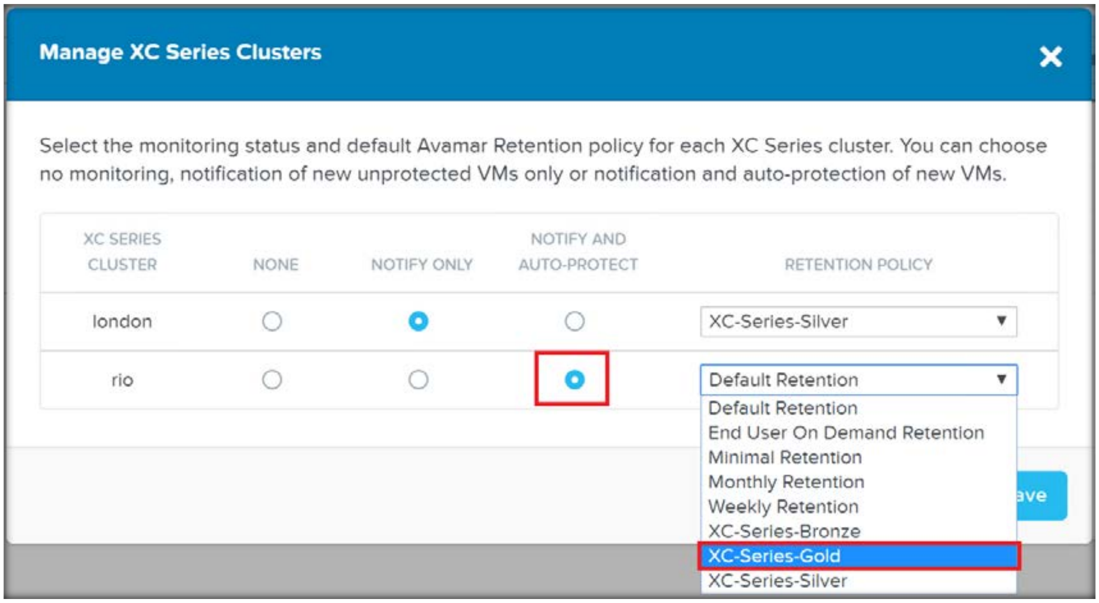


2. In the upper-right corner of the page, click **+ Manage Clusters.**



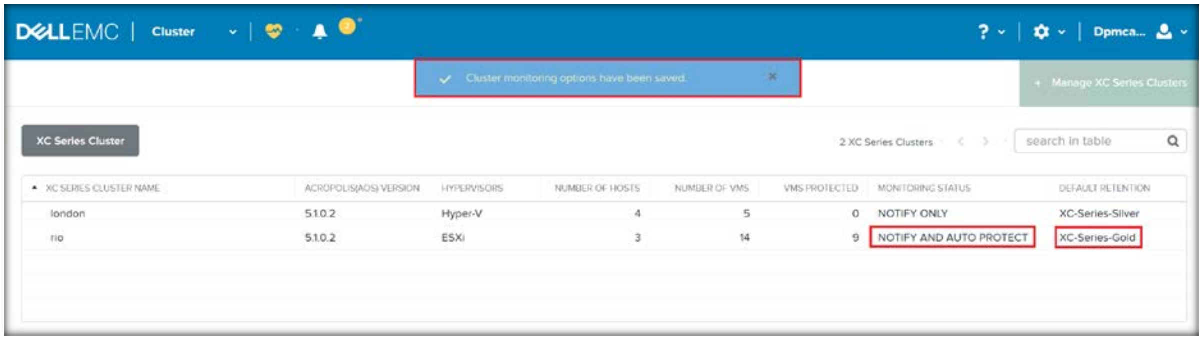
XC SERIES CLUSTER NAME	ACROPOLIS(AOS) VERSION	HYPERVISORS	NUMBER OF HOSTS	NUMBER OF VMS	VMS PROTECTED	MONITORING STATUS	DEFAULT RETENTION
london	5.1.0.2	Hyper-V	4	5	0	NOTIFY ONLY	XC-Series-Silver
rio	5.1.0.2	ESXi	3	14	9	NONE	-

3. Select **NOTIFY AND AUTO-PROTECT** and the **RETENTION POLICY** for the cluster that you want to enable VM backups for and then click **Save**.



Select the monitoring status and default Avamar Retention policy for each XC Series cluster. You can choose no monitoring, notification of new unprotected VMs only or notification and auto-protection of new VMs.

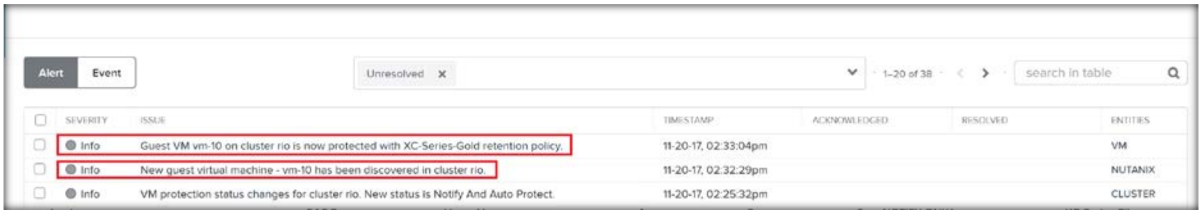
XC SERIES CLUSTER	NONE	NOTIFY ONLY	NOTIFY AND AUTO-PROTECT	RETENTION POLICY
london	○	●	○	XC-Series-Silver ▼
rio	○	○	●	Default Retention ▼



✓ Cluster monitoring options have been saved.

XC SERIES CLUSTER NAME	ACROPOLIS(AOS) VERSION	HYPERVISORS	NUMBER OF HOSTS	NUMBER OF VMS	VMS PROTECTED	MONITORING STATUS	DEFAULT RETENTION
london	5.1.0.2	Hyper-V	4	5	0	NOTIFY ONLY	XC-Series-Silver
rio	5.1.0.2	ESXi	3	14	9	NOTIFY AND AUTO PROTECT	XC-Series-Gold

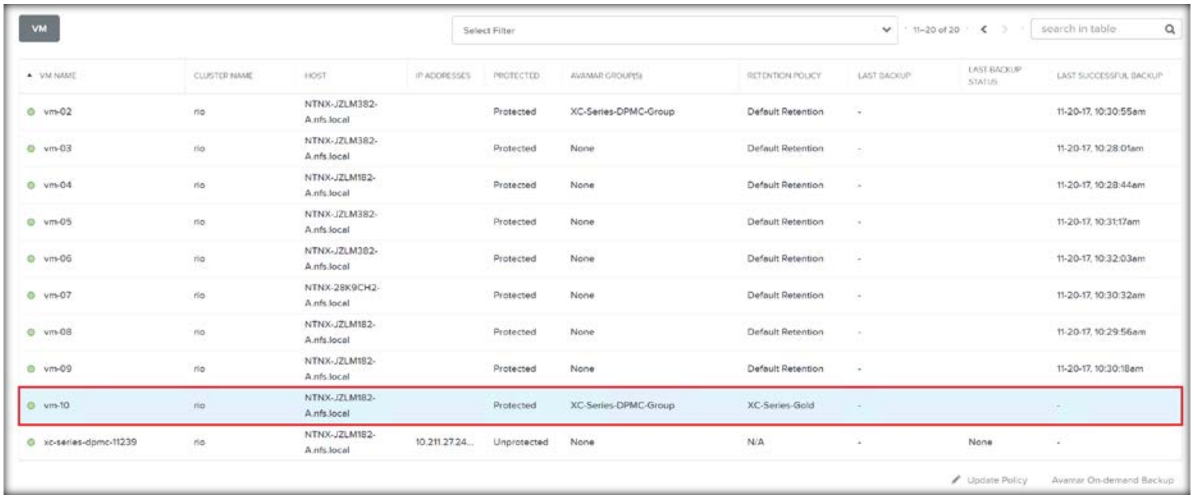
You will now receive the following alerts when new VMs are created and DPMC protects them automatically



□	SEVERITY	ISSUE	TIMESTAMP	ACKNOWLEDGED	RESOLVED	ENTITIES
□	● Info	Guest VM vm-10 on cluster rio is now protected with XC-Series-Gold retention policy.	11-20-17, 02:33:04pm			VM
□	● Info	New guest virtual machine - vm-10 has been discovered in cluster rio.	11-20-17, 02:32:29pm			NUTANIX
□	● Info	VM protection status changes for cluster rio. New status is Notify And Auto Protect.	11-20-17, 02:25:32pm			CLUSTER

Checking the VM table shows the new VM has been automatically added to the XC-Series-DPMC-Group with the default retention policy of the cluster, XC-Series-Gold in this case.

NOTE: It may take up to 5 minutes before group and retention policy information populates the VM table.

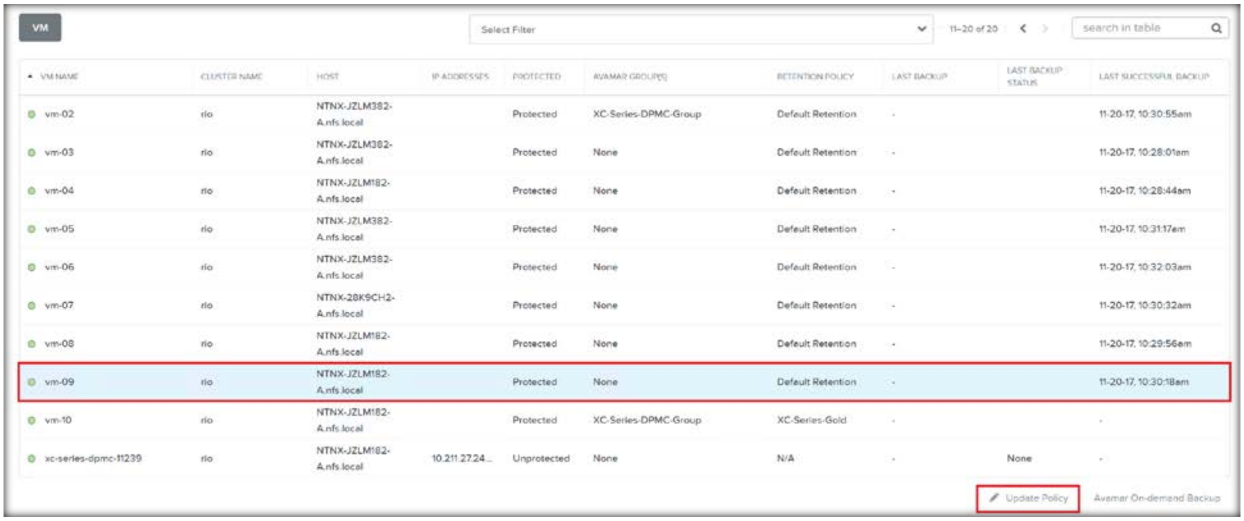


VM NAME	CLUSTER NAME	HOST	IP ADDRESSES	PROTECTED	AVAMAR GROUP(S)	RETENTION POLICY	LAST BACKUP	LAST BACKUP STATUS	LAST SUCCESSFUL BACKUP
vm-02	rio	NTNX-JZLM382-A.nfs.local		Protected	XC-Series-DPMC-Group	Default Retention	-		11-20-17, 10:30:55am
vm-03	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:28:01am
vm-04	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:28:44am
vm-05	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:31:17am
vm-06	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:32:03am
vm-07	rio	NTNX-28K9CH2-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:30:32am
vm-08	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:29:56am
vm-09	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:30:18am
vm-10	rio	NTNX-JZLM182-A.nfs.local		Protected	XC-Series-DPMC-Group	XC-Series-Gold	-		-
xc-series-dpmc-11239	rio	NTNX-JZLM182-A.nfs.local	10.211.27.24...	Unprotected	None	N/A	-	None	-

8.1.2 Updating VM Backup Policies

The following procedure outlines the steps to update the backup policies for a VM to add scheduled backups through DPMC.

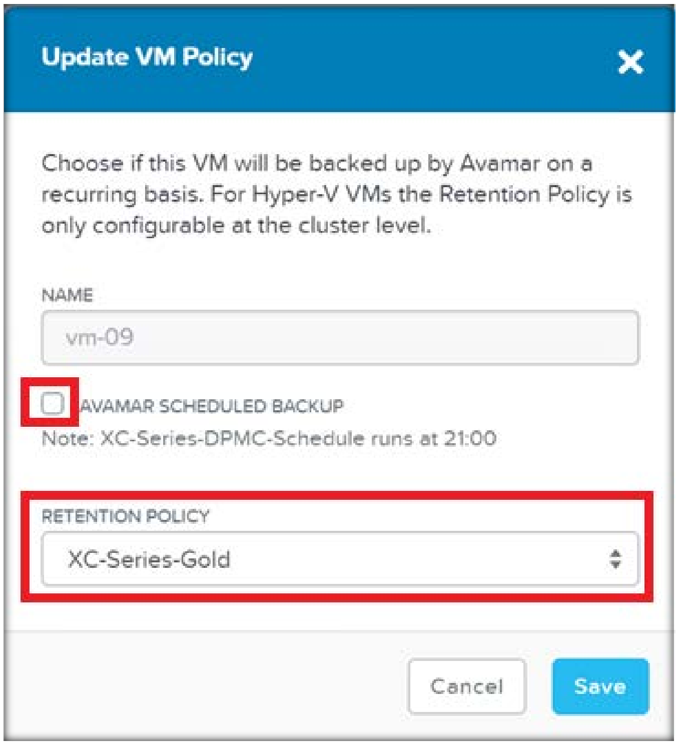
1. In the VM table, select the VM you would like to update and click Update Policy, which appears underneath the table.



VM NAME	CLUSTER NAME	HOST	IP ADDRESSES	PROTECTED	AVAMAR GROUP(S)	RETENTION POLICY	LAST BACKUP	LAST BACKUP STATUS	LAST SUCCESSFUL BACKUP
vm-02	rio	NTNX-JZLM382-A.nfs.local		Protected	XC-Series-DPMC-Group	Default Retention	-		11-20-17, 10:30:55am
vm-03	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:28:01am
vm-04	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:28:44am
vm-05	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:31:17am
vm-06	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:32:03am
vm-07	rio	NTNX-28K9CH2-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:30:32am
vm-08	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:29:56am
vm-09	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:30:18am
vm-10	rio	NTNX-JZLM182-A.nfs.local		Protected	XC-Series-DPMC-Group	XC-Series-Gold	-		-
xc-series-dpmc-11239	rio	NTNX-JZLM182-A.nfs.local	10.211.27.24...	Unprotected	None	N/A	-	None	-

2. To enable scheduled backups for a VM check (or un-check if you want to discontinue scheduled backups) the box for Avamar Scheduled Backup and optionally select a Retention Policy if you would like a policy different from the cluster's default value.

NOTE: For Hyper-V clusters, you cannot select a retention policy for an individual VM. This must be configured at the cluster level.



Update VM Policy

Choose if this VM will be backed up by Avamar on a recurring basis. For Hyper-V VMs the Retention Policy is only configurable at the cluster level.

NAME

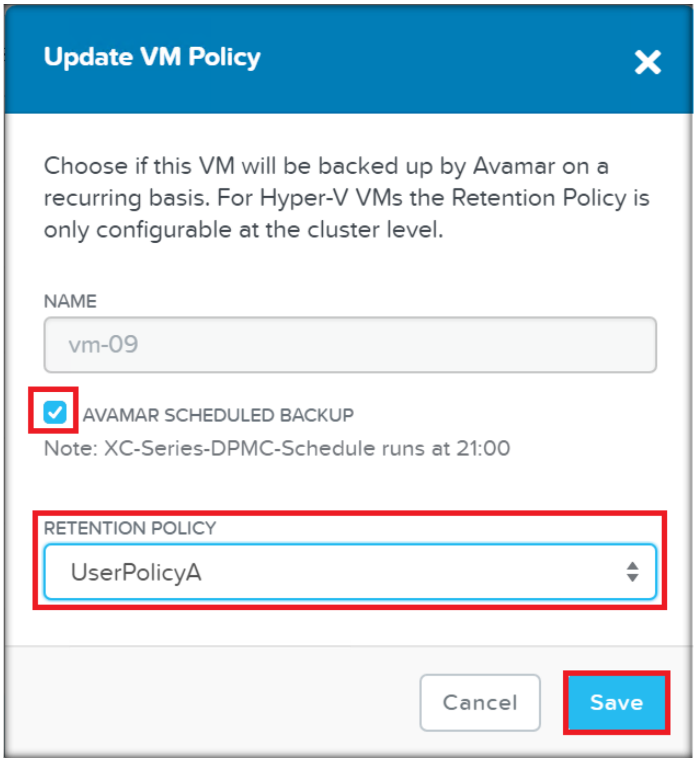
vm-09

□ AVAMAR SCHEDULED BACKUP

Note: XC-Series-DPMC-Schedule runs at 21:00

RETENTION POLICY

XC-Series-Gold



Update VM Policy

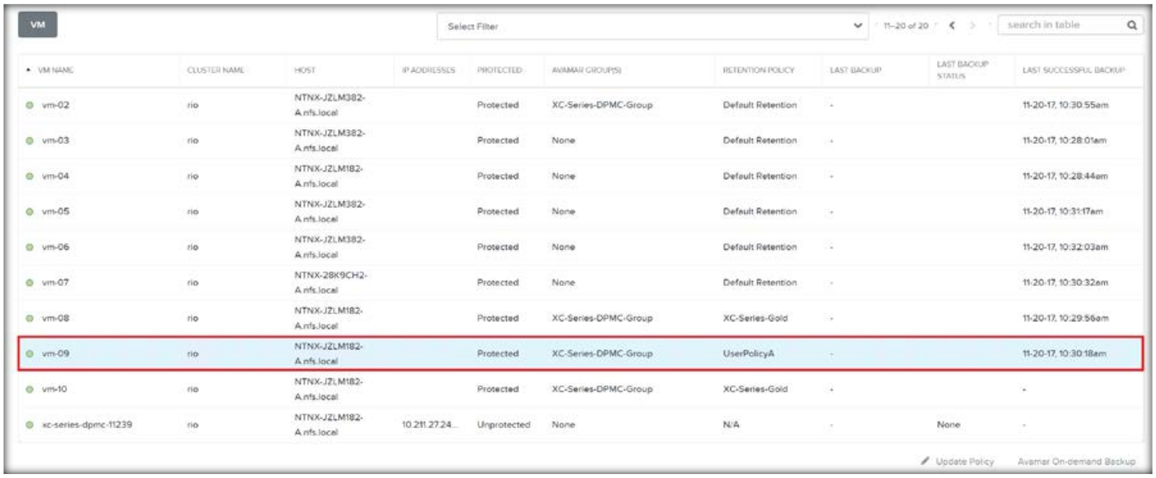
Choose if this VM will be backed up by Avamar on a recurring basis. For Hyper-V VMs the Retention Policy is only configurable at the cluster level.

NAME: vm-09

☑ AVAMAR SCHEDULED BACKUP

Note: XC-Series-DPMC-Schedule runs at 21:00

RETENTION POLICY: UserPolicyA



VM NAME	CLUSTER NAME	HOST	IP ADDRESSES	PROTECTED	AVAMAR GROUP(S)	RETENTION POLICY	LAST BACKUP	LAST BACKUP STATUS	LAST SUCCESSFUL BACKUP
vm-02	rio	NTNX-JZLM382-A.nfs.local		Protected	XC-Series-DPMC-Group	Default Retention	-		11-20-17, 10:30:55am
vm-03	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:28:01am
vm-04	rio	NTNX-JZLM182-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:28:44am
vm-05	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:31:17am
vm-06	rio	NTNX-JZLM382-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:32:03am
vm-07	rio	NTNX-28K9CH2-A.nfs.local		Protected	None	Default Retention	-		11-20-17, 10:30:32am
vm-08	rio	NTNX-JZLM182-A.nfs.local		Protected	XC-Series-DPMC-Group	XC-Series-Gold	-		11-20-17, 10:29:56am
vm-09	rio	NTNX-JZLM182-A.nfs.local		Protected	XC-Series-DPMC-Group	UserPolicyA	-		11-20-17, 10:30:18am
vm-10	rio	NTNX-JZLM182-A.nfs.local		Protected	XC-Series-DPMC-Group	XC-Series-Gold	-		-
xc-series-dpmc-11239	rio	NTNX-JZLM182-A.nfs.local	10.211.27.24...	Unprotected	None	N/A	-	None	-

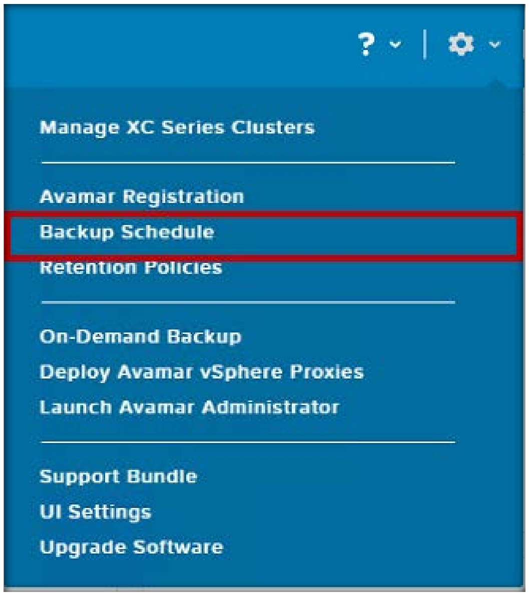
8.2 Avamar Registration (runtime management)

This menu item is used to update credentials used by DPMC to connect to Avamar.

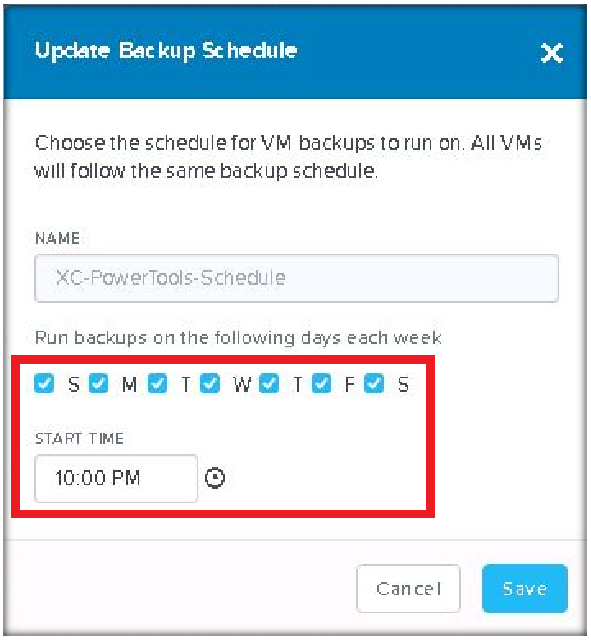
This option is described in detail in the Avamar Registration section.

8.3 Updating the Backup Schedule

To change the automated backup schedule, from the **Settings** (gear tool) menu, click **Backup Schedule**.



The **Update Backup Schedule** window is displayed and lets you adjust the day of the week and the time of day that scheduled backups occur.


Update Backup Schedule

Choose the schedule for VM backups to run on. All VMs will follow the same backup schedule.

NAME

XC-PowerTools-Schedule

Run backups on the following days each week

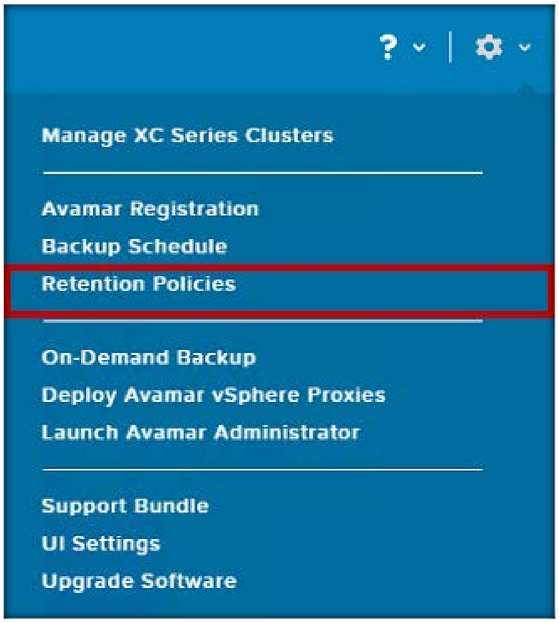
☑ S ☑ M ☑ T ☑ W ☑ T ☑ F ☑ S

START TIME

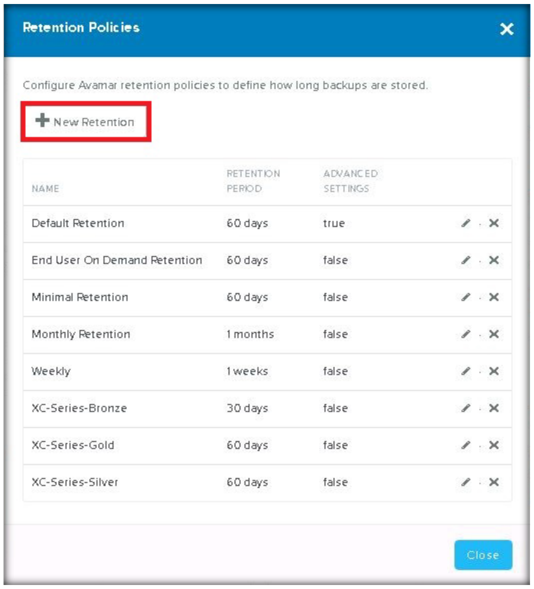
10:00 PM

8.4 Managing Retention Policies

1. To create or edit retention policies, choose **Retention Policies** from the **Settings (gear tool)** menu.



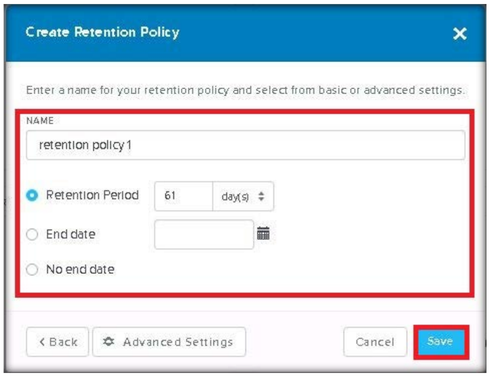
2. The Retention Policy control is displayed. To create a new retention policy, click **+ New Retention**.



Configure Avamar retention policies to define how long backups are stored.

NAME	RETENTION PERIOD	ADVANCED SETTINGS
Default Retention	60 days	true
End User On Demand Retention	60 days	false
Minimal Retention	60 days	false
Monthly Retention	1 months	false
Weekly	1 weeks	false
XC-Series-Bronze	30 days	false
XC-Series-Gold	60 days	false
XC-Series-Silver	60 days	false

3. The Create Retention Policy controls page is displayed. Type a **Name** for your new policy and set the **Retention Period** or set an **End date** or choose **No end date** to set the time for which your VM backups will be stored. Click **Save** after making desired entries.



Create Retention Policy

Enter a name for your retention policy and select from basic or advanced settings.

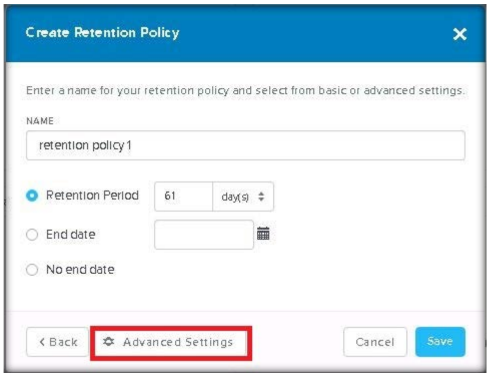
NAME: retention policy 1

● Retention Period: 61 day(s)

○ End date

○ No end date

4. If more retention options are desired, click the **Advanced Settings** button.



Create Retention Policy

Enter a name for your retention policy and select from basic or advanced settings.

NAME: retention policy 1

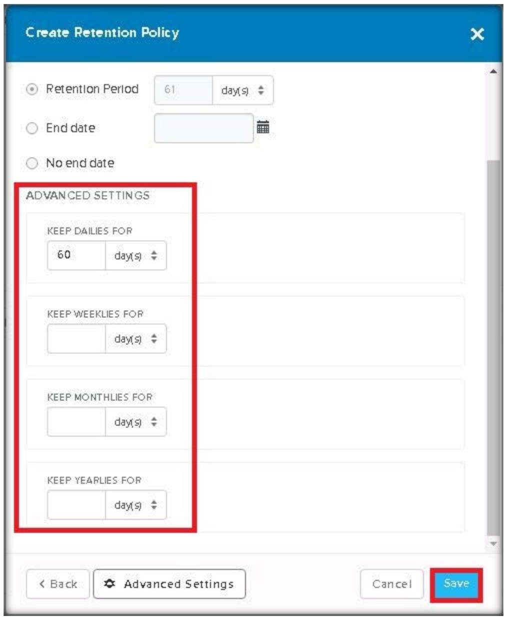
● Retention Period: 61 day(s)

○ End date

○ No end date

5. The **Advanced Settings** option is displayed. This provides options for setting retention periods for daily, weekly, monthly and yearly backups. Click **Save** after making changes.

NOTE: To return to the basic settings, click **Advanced Settings** again.



Create Retention Policy

○ Retention Period: 61 day(s)

○ End date

○ No end date

ADVANCED SETTINGS

KEEP DAILIES FOR: 60 day(s)

KEEP WEEKLIES FOR: day(s)

KEEP MONTHLIES FOR: day(s)

KEEP YEARLIES FOR: day(s)

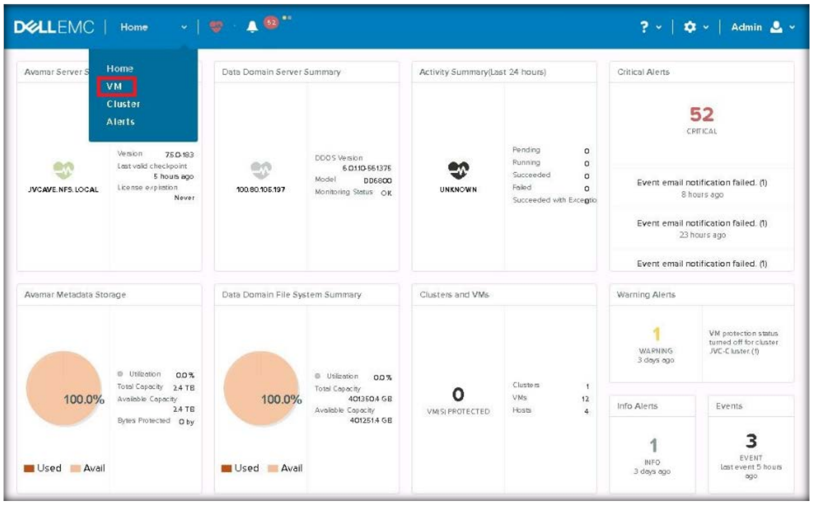
8.5 Launch Avamar Administrator

This option is described in detail in the Launch Avamar Administrator section.

8.6 On-Demand VM Backup

The following procedure outlines the steps to perform an on-demand backup through DPMC.

1. Navigate to **Home>VM**.



Avamar Server S
JVCAVE.NFS.LOCAL
Version 7.5.0-183
Last valid checkpoint 5 hours ago
License expiration Never

Data Domain Server Summary
100.80.105.197
DDOS Version 6.0.1.10-561375
Model DD6800
Monitoring Status OK

Activity Summary(Last 24 hours)
UNKNOWN
Pending 0
Running 0
Succeeded 0
Failed 0
Succeeded with Exceptio 0

Critical Alerts
52 CRITICAL
Event email notification failed. (1) 8 hours ago
Event email notification failed. (1) 23 hours ago
Event email notification failed. (1)

Avamar Metadata Storage
100.0%
Utilization 0.0 %
Total Capacity 2.4 TB
Available Capacity 2.4 TB
Bytes Protected 0 by
■ Used ■ Avail

Data Domain File System Summary
100.0%
Utilization 0.0 %
Total Capacity 4013504 GB
Available Capacity 4012514 GB
■ Used ■ Avail

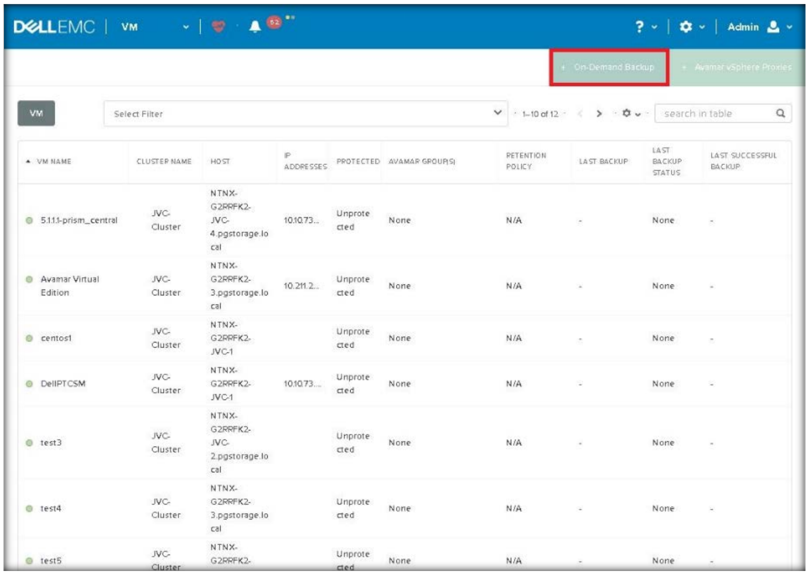
Clusters and VMs
0 VM(S) PROTECTED
Clusters 1
VMs 12
Hosts 4

Warning Alerts
1 WARNING 3 days ago
VM protection status turned off for cluster JVC-Cluster (1)

Info Alerts
1 INFO 3 days ago

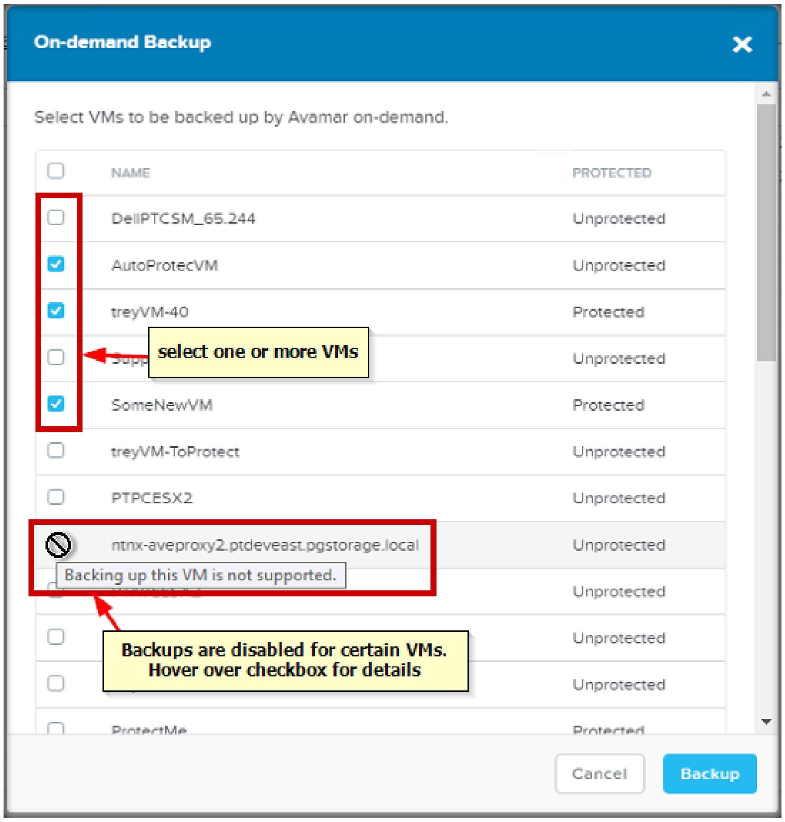
Events
3 EVENT last event 5 hours ago

2. Click on the **+ On-Demand Backup** button in the upper right corner of VM page.



▲ VM NAME	CLUSTER NAME	HOST	IP ADDRESSES	PROTECTED	AVAMAR GROUP(S)	RETENTION POLICY	LAST BACKUP	LAST BACKUP STATUS	LAST SUCCESSFUL BACKUP
● 5.1.1.1-prism_central	JVC-Cluster	NTNX-G2RRFK2-JVC-4.pgstorage.local	10.10.73...	Unprotected	None	N/A	-	None	-
● Avamar Virtual Edition	JVC-Cluster	NTNX-G2RRFK2-3.pgstorage.local	10.211.2...	Unprotected	None	N/A	-	None	-
● centos1	JVC-Cluster	NTNX-G2RRFK2-JVC-1		Unprotected	None	N/A	-	None	-
● DellPTCSM	JVC-Cluster	NTNX-G2RRFK2-JVC-1	10.10.73....	Unprotected	None	N/A	-	None	-
● test3	JVC-Cluster	NTNX-G2RRFK2-JVC-2.pgstorage.local		Unprotected	None	N/A	-	None	-
● test4	JVC-Cluster	NTNX-G2RRFK2-3.pgstorage.local		Unprotected	None	N/A	-	None	-
● test5	JVC-Cluster	NTNX-G2RRFK2-		Unprotected	None	N/A	-	None	-

3. Select the VM that you want to backup and then click the **Backup** button.



On-demand Backup

Select VMs to be backed up by Avamar on-demand.

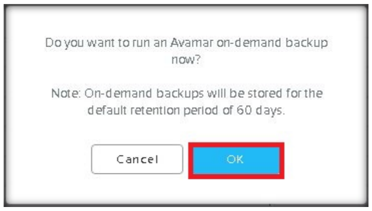
☐	NAME	PROTECTED
☐	DellPTCSM_65.244	Unprotected
☑	AutoProtecVM	Unprotected
☑	treyVM-40	Protected
☐	Supp	Unprotected
☑	SomeNewVM	Protected
☐	treyVM-ToProtect	Unprotected
☐	PTPCESX2	Unprotected
⊘	ntnx-aveproxy2.ptdeveast.pgstorage.local	Unprotected
☐		Unprotected
☐		Unprotected
☐		Unprotected
☐	ProtectMe	Protected

Backing up this VM is not supported.

select one or more VMs

Backups are disabled for certain VMs.
Hover over checkbox for details

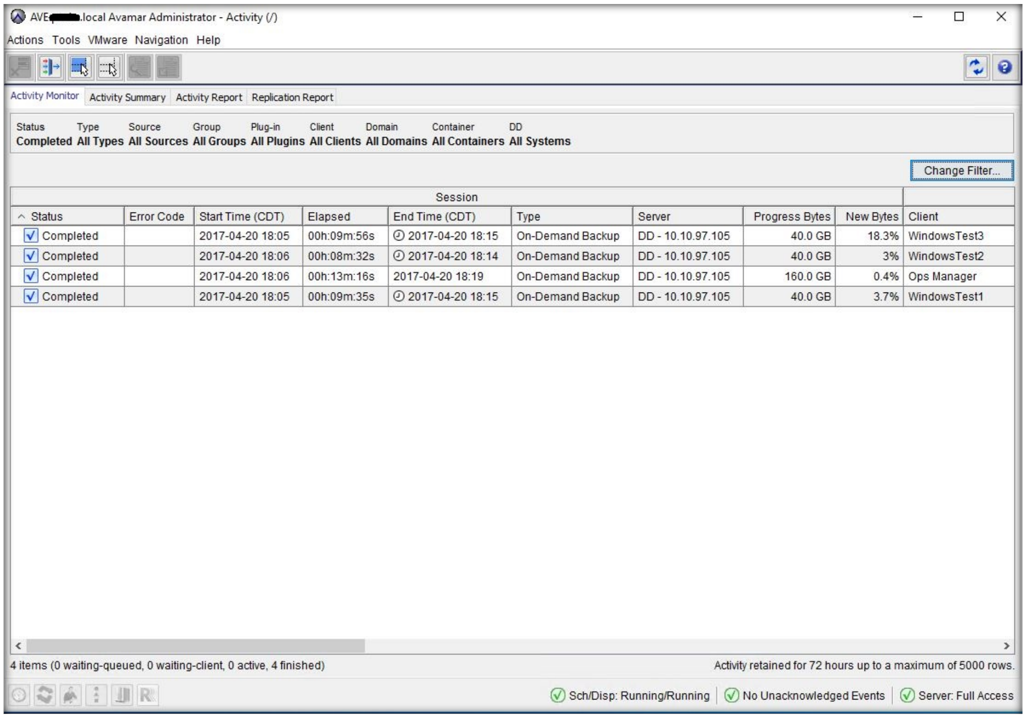
4. Click **OK** to start the backup.



Do you want to run an Avamar on-demand backup now?

Note: On-demand backups will be stored for the default retention period of 60 days.

5. Backups are tracked in the **Activity** window of the Avamar Administrator panel. An example of successful backups is shown below.



AVE[redacted].local Avamar Administrator - Activity (/)

Status	Type	Source	Group	Plug-in	Client	Domain	Container	DD
Completed	All Types	All Sources	All Groups	All Plugins	All Clients	All Domains	All Containers	All Systems

Session									
Status	Error Code	Start Time (CDT)	Elapsed	End Time (CDT)	Type	Server	Progress Bytes	New Bytes	Client
☑ Completed		2017-04-20 18:05	00h:09m:56s	2017-04-20 18:15	On-Demand Backup	DD - 10.10.97.105	40.0 GB	18.3%	WindowsTest3
☑ Completed		2017-04-20 18:06	00h:08m:32s	2017-04-20 18:14	On-Demand Backup	DD - 10.10.97.105	40.0 GB	3%	WindowsTest2
☑ Completed		2017-04-20 18:06	00h:13m:16s	2017-04-20 18:19	On-Demand Backup	DD - 10.10.97.105	160.0 GB	0.4%	Ops Manager
☑ Completed		2017-04-20 18:05	00h:09m:35s	2017-04-20 18:15	On-Demand Backup	DD - 10.10.97.105	40.0 GB	3.7%	WindowsTest1

4 items (0 waiting-queued, 0 waiting-client, 0 active, 4 finished)

Activity retained for 72 hours up to a maximum of 5000 rows.

✓ Sch/Disp: Running/Running | ✓ No Unacknowledged Events | ✓ Server: Full Access

8.7 Hyper-V Cluster – Protection of VM

For Windows Server 2012 solution, Microsoft uses a failover cluster concept where the VM and the failover VM can exist in different nodes for business continuity. Failover clusters provide high availability and scalability to server workload. The DPMC solution offers protection only for VMs in the failover cluster.

8.7.1 Manually moving VMs to a failover cluster

If you select a cluster to auto protect, DPMC will auto protect any new VMs added directly to the failover cluster. However, if you manually move VMs in and out of the Hyper-V failover cluster, DPMC will not recognize it as a new VM.

In this situation, Dell EMC advises that you manually select the VMs that you want to protect.

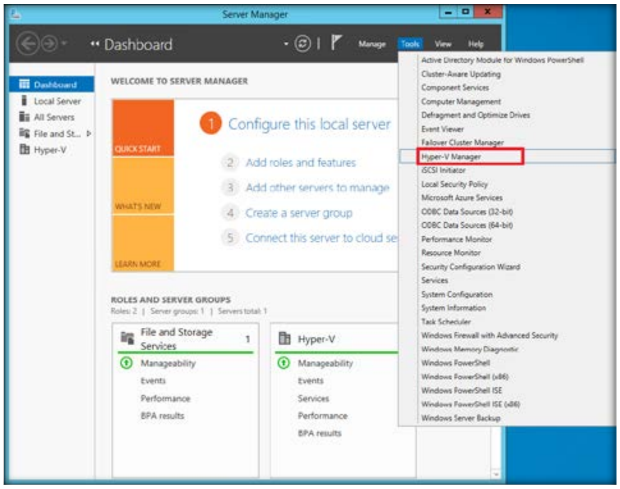
8.7.2 Additional set up instructions for Linux VM

Hyper-V requires that you install a client and the Hyper-V VSS plugin in each Hyper-V host. For image-level backups of a virtual machine with a Microsoft Windows guest OS, you also need the Hyper-V Integration Components and the integration components version for the backup. Hyper-V Server and the guest virtual machine must match. If the versions do not match, then the virtual machine might not start when you restore it to a different Hyper-V Server.

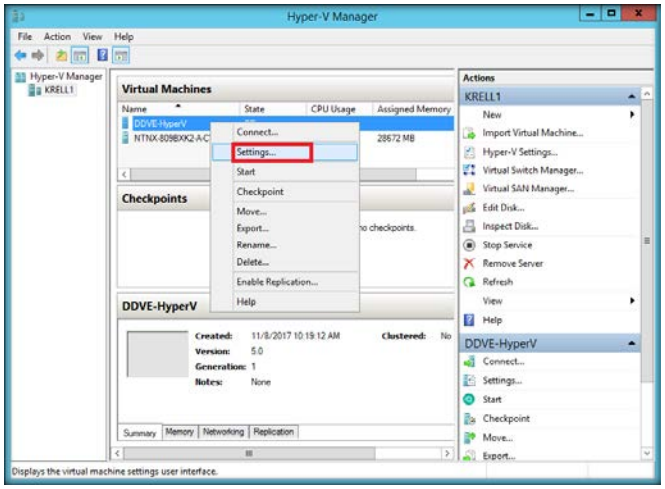
Make sure that the Linux VM backup/checkpoint is unchecked. Linux VM backup checkpoint is not compatible with the Avamar checkpoint; therefore, a VM backup will always fail unless you uncheck the checkpoint.

To uncheck the checkpoint:

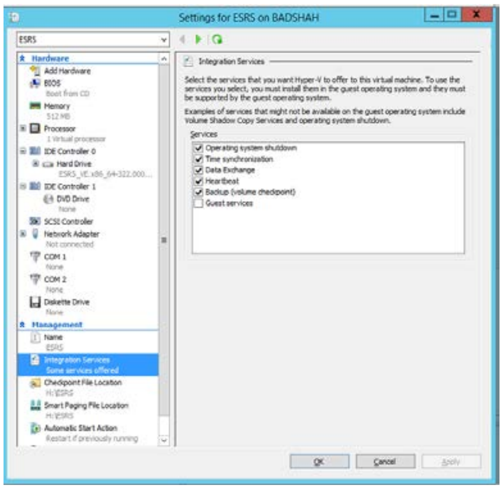
1. Open the Server Manager.
2. Go to **Tools>Hyper-V Manager**.



3. Click on the Linux Virtual Machines, right click the VM and select **Settings**.



4. In Settings, select the Management and then the Integration Service.
5. Uncheck the checkpoint.



Integration Services

Select the services that you want Hyper-V to offer to this virtual machine. To use the services you select, you must install them in the guest operating system and they must be supported by the guest operating system.

Examples of services that might not be available on the guest operating system include Volume Shadow Copy Services and operating system shutdown.

Services

- ☑ Operating system shutdown
- ☑ Time synchronization
- ☑ Data Exchange
- ☑ Heartbeat
- ☑ Backup (volume checkpoint)
- □ Guest services

9 Log location

Logs may be easily obtained using the Support Bundle feature in the **Settings (gear tool)** menu but may also be collected manually in some situations.

9.1 Log Files

The following is a list of log file locations.

Log file	**Location**
DPMC Deployment Log	/root/dell/pt/logs/deploymentlog.out
DPMC Runtime Log	/root/dell/pt/logs/log.out
DPMC Rollover Archives	/root/dell/pt/logs/log-1.out.zip /root/dell/pt/logs/log-2.out.zip /root/dell/pt/logs/log-3.out.zip /root/dell/pt/logs/log-4.out.zip /root/dell/pt/logs/log-5.out.zip
DPMC Appliance Service Log	/var/log/dell/csm/appliance_service.log
NDP Server logs	/root/dell/pt/logs/ptcsm_ndp_log
Avamar log bundle (tar)	Directory from which `getlogs` command was run

10 Best Practices in DPMC deployment, Association and runtime

Use the following best practices for DPMC.

- Use a Static IP
- Forward and reverse DNS lookup defined
- Do not install VMs on SATADOM
- Have a separate dedicated Datastore for Avamar
- Have one Avamar instance (DPMC is basically deploying)
- Verify ESX and vCenter certificates
- Use properly registered certificates from a trusted provider that match DNS names for ESX and vCenter.

11 Adding New XC Series Clusters to DPMC

DPMC can monitor all ESXi and Hyper-V clusters registered to the Prism Central. Registering a new cluster with Prism Central does not require deploying an additional DPMC or Avamar server, but some workflows will be triggered on DPMC to properly configure the new cluster.

11.1 ESXi Cluster Add

When a new ESXi cluster is added to Prism Central, DPMC will prompt you to run a proxy VM recommendation (vSphere Proxies for ESXi) to make sure there is proper coverage. If proxy VM(s) are required, you are prompted to enter the necessary information and continue deploying the proxy VM(s); otherwise, the system indicates that no additional proxy VM(s) are needed (in the event they were previously deployed through DPMC or Avamar Administrator).

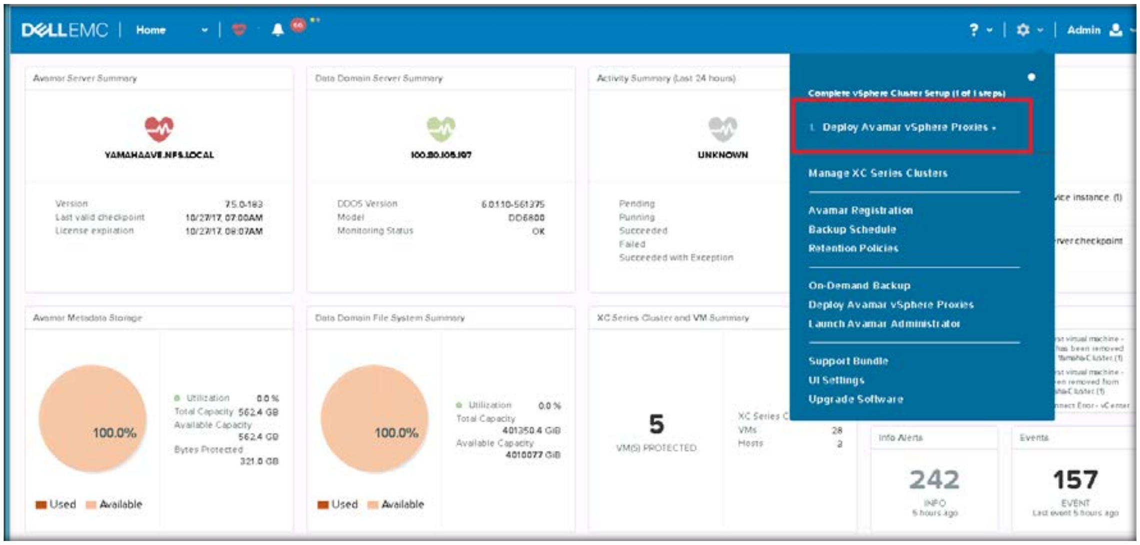


Figure 45 Deploy Avamar vSphere Proxies

After you have completed a proxy deployment recommendation (whether or not new proxy VM(s) need to be deployed), the prompt will be removed from the **Settings (gear tool)** menu.

11.2 Hyper-V Cluster Add

When a new Hyper-V cluster is added to Prism Central, DPMC prompts you to configure Avamar clients as outlined in the Avamar client configuration on Hyper-V section.

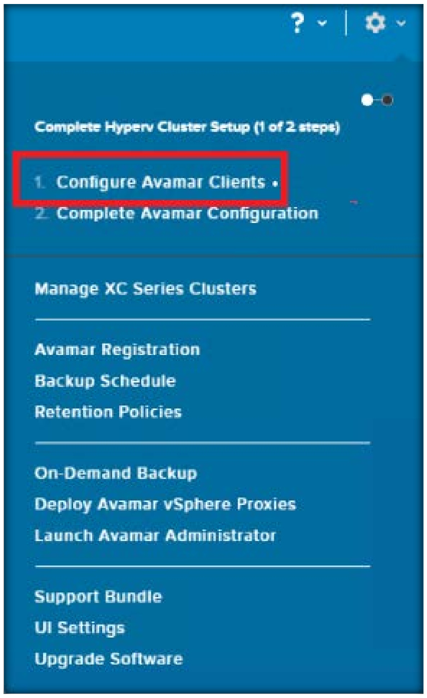

Complete Hyperv Cluster Setup (1 of 2 steps)
1. Configure Avamar Clients
2. Complete Avamar Configuration
Manage XC Series Clusters
Avamar Registration
Backup Schedule
Retention Policies
On-Demand Backup
Deploy Avamar vSphere Proxies
Launch Avamar Administrator
Support Bundle
UI Settings
Upgrade Software

Figure 46 Configure Avamar Clients

If Avamar clients already exist for the Hyper-V hosts, the first step is marked complete automatically and you are taken to the second step. For further assistance with client configuration, contact Dell EMC support.

12 Health monitoring

The following sections describe health monitoring in DPMC.

12.1 Heartbeat status

DPMC constantly monitors Prism Central, Avamar and Data Domain heartbeats; it displays an alert if the heartbeat is missing for any one of these components.

12.1.1 Avamar heartbeat

DPMC constantly monitors the Avamar Heartbeat. If the heartbeat check fails, DPMC attempts to reconnect every 5 minutes to ensure the connection can be established. If no connection was established after the initial 5 minutes, DPMC will begin generating alerts. You are notified with a critical alert that the Avamar server connection is lost. The system also displays the timestamp when the alert was generated.

DPMC attempts to re-establish connectivity every minute. During this time, tasks from the VM or cluster pages (on-demand backup, manage clusters and others) cannot be initiated.

DPMC turns the health indicator grey on the home dashboard for the following:

- Avamar server
- Backup summary
- Data Domain server
- Avamar utilization
- Data Domain utilization

DPMC displays the **Attention** icon next to the Cluster Name entry in the cluster table or VM table for every cluster until the Avamar heartbeat is restored. Hovering over the icon displays the following message: *Avamar server is not reachable.*

After 30 minutes, if the heartbeat check has failed for all retries, DPMC sends an additional notification every 30 minutes that the Avamar server is disconnected.

12.1.2 Data domain heartbeat

DPMC constantly monitors the Data Domain connection status through the Avamar server. It utilizes the information that it gathers from AVE monitoring Data Domain. If the monitoring status shows that Data Domain is disconnected, DPMC retries before an alert is generated. The severity of the alert is *Critical*.

DPMC attempts to re-establish connectivity everyminute. It presents the following conditions:

- Keeps all last known Data Domain data for VMs and clusters in the cluster table, VM table and home dashboard.
- Turns the Data Domain server health indicator grey on the home dashboard.
- Turns the Data Domain utilization indicator grey on the home dashboard.
- Does not allow tasks to be initiated from the VM or cluster pages (on-demand backup, manage clusters and others).
- Displays the **Attention** icon next to the Cluster Name entry in the cluster table or VM table for every cluster or VM until the Data Domain heartbeat is restored. Hovering over the icon displays the following message: *Data Domain server is not reachable.*

After 30 minutes, if the heartbeat check has failed for all retries, DPMC sends an additional notification every 30 minutes that the Data Domain is disconnected.

12.1.3 Prism Central Heartbeat

DPMC constantly monitors the Prism Central Heartbeat and notifies you if the application can no longer communicate with the Prism Central instance.

If the heartbeat check fails, DPMC tries reconnecting, every minute for 5 minutes, to ensure the connection can be established. If no connection was established after the initial 5 minutes, DPMC begins generating alerts and will not allow changes to any cluster. You are notified with a critical alert that Prism Central is disconnected. It also displays the timestamp when the alert is generated.

DPMC attempts to re-establish connectivity every minute. DPMC presents the following conditions:

- Keeps all the last known data for VMs and clusters in the tables.
- Does not allow tasks to be initiated from the VM or cluster pages (on-demand backup, manage clusters and others).
- Displays the **Attention** icon next to the Cluster Name entry in the cluster table for every cluster until Prism Central heartbeat is restored. Hovering over the icon displays the following message: *Prism Central is not reachable*.
- DPMC displays the **Attention** icon next to the Cluster Name entry in the VM table for every VM until Prism Central heartbeat is restored. Hovering over the icon displays the following message: *Prism Central is not reachable*.

After 30 minutes, if the heartbeat check has failed for all retries, DPMC sends an additional notification every 30 minutes that Prism Central is still disconnected.

12.1.4 Nutanix Cluster Heartbeat

DPMC responds when Nutanix clusters are joined to the Prism Central instance. If a cluster is joined and is in an unreachable state, DPMC suspends the user initiated actions for that cluster only.

If no connection was established after the initial 5 minutes, DPMC notifies you that the cluster is disconnected. DPMC attempts to re-establish connectivity every minute. DPMC presents the following conditions:

- Keeps all last known data for VMs and clusters in the tables.
- Does not allow you to initiate any tasks from the cluster page on the impacted cluster.
- Does not allow you to initiate any tasks from the VM page for the VMs on the impacted cluster.
- Displays the Attention icon next to the Cluster Name entry in the cluster table for the impacted cluster until availability is restored. Hovering over the icon displays the following message: *This cluster is not reachable*.
- Displays the Attention icon next to the Cluster Name entry in the VM table for every VM on the impacted cluster until availability is restored. Hovering over the icon displays the following message: *This cluster is not reachable.*

After 30 minutes, if the heartbeat check has failed for all retries, DPMC sends an additional notification every 30 minutes that the cluster is still disconnected.

12.1.5 DPMC Idle status

DPMC monitors the backup activity and updates the home page accordingly. However, if the DPMC does not perform any backup activity for 72 hours, it may show the Avamar Server Summary as a gray color (Health summary).

DPMC constantly monitors Avamar heartbeat and backup count. One of the conditions is if there are no successful backups within 72 hours, DPMC assigns an UNKNOWN status to Avamar Server Summary. If there are no activities returned, the backup activity health is also marked as UNKNOWN. In this situation, the Avamar server summary shows gray.

12.2 Alert entity

DPMC Alerts management page provides access to the alerts given by the application. The alerts page is the area where you can view and interact with alerts given by the application. An alert is made up of the following:

Severity (Critical, Warning, Info)

- Critical: The critical error will show the critical icon. Examples:
  - > Notify user when a backup has failed
  - > Notify user when a heartbeat fails
  - > Data Domain storage utilization reaches 90%
- Warning: The warning error will show the icon. Examples:
  - > Remove a proxy server
  - > New VM detection
- Info: The information will show with the icon. Examples:
  - > When protection of a VM is discontinued
  - > When backup completes successfully

Issue: A brief description of the reason for the alert
Timestamp: The date/time when the alert was generated
Acknowledged status: User and date/time it was marked acknowledged or unacknowledged
Resolved status: User and date/time it was marked resolved or unresolved

12.2.1 Alert acknowledgment

Alert management is an essential part of DPMC. You can observe the alerts, resolve the alerts or simply acknowledge the alerts. DPMC defines alerts in 3 major categories:

- Critical
- Warning
- Information

When you resolve an Alert in DPMC, issue the acknowledgement of the corresponding Avamar Event.

12.3 Storage Utilization

The following sections describe storage utilization.

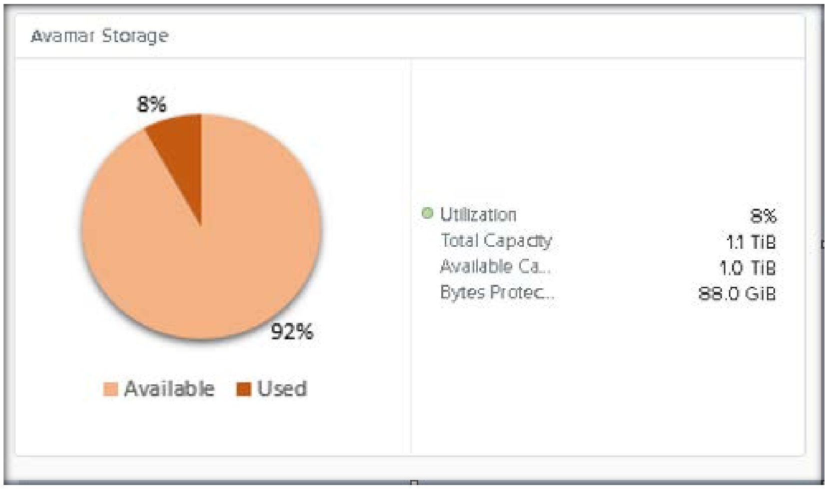
12.3.1 Avamar metadata storage utilization

DPMC provides a graphical representation from the Utilization metric gathered from Avamar. It provides a green/yellow/red status and notifications when necessary.

Utilization status is defined as follows:

Color	Utilization status percentage
Red	90% or more
Yellow	Less than 90% and greater than or equal to 80%
Green	Less than 80%
Gray	Unknown percentage

The Utilization health status circle is displayed next to the Utilization metric in the Avamar Metadata Storage box on the home page.



● Utilization	8%
Total Capacity	1.1 TiB
Available Ca...	1.0 TiB
Bytes Protec...	88.0 GiB

Figure 47 Avamar Storage

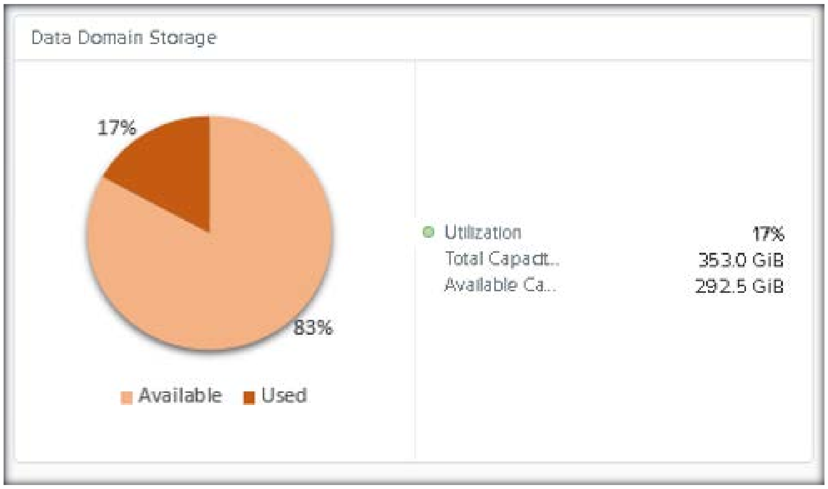
12.3.2 Data Domain metadata storage utilization

DPMC provides a graphical presentation from the Utilization metric gathered from Data Domain. It provides green/yellow/red status and notifications when necessary.

Utilization status is defined as follows:

Color	Utilization status percentage
Red	90% or more
Yellow	Less than 90% and greater than or equal to 80%
Green	Less than 80%
Gray	Unknown percentage

The Utilization health status circle is displayed next to the Utilization metric in the Data Domain Storage box.



● Utilization 17%
Total Capacit... 353.0 GiB
Available Ca... 292.5 GiB

Figure 48 Data Domain Storage

13 Restoring a VM

In the current DPMC release, DPMC does not offer menu items for restoring VMs. However, you can restore VMs from the Avamar management console.

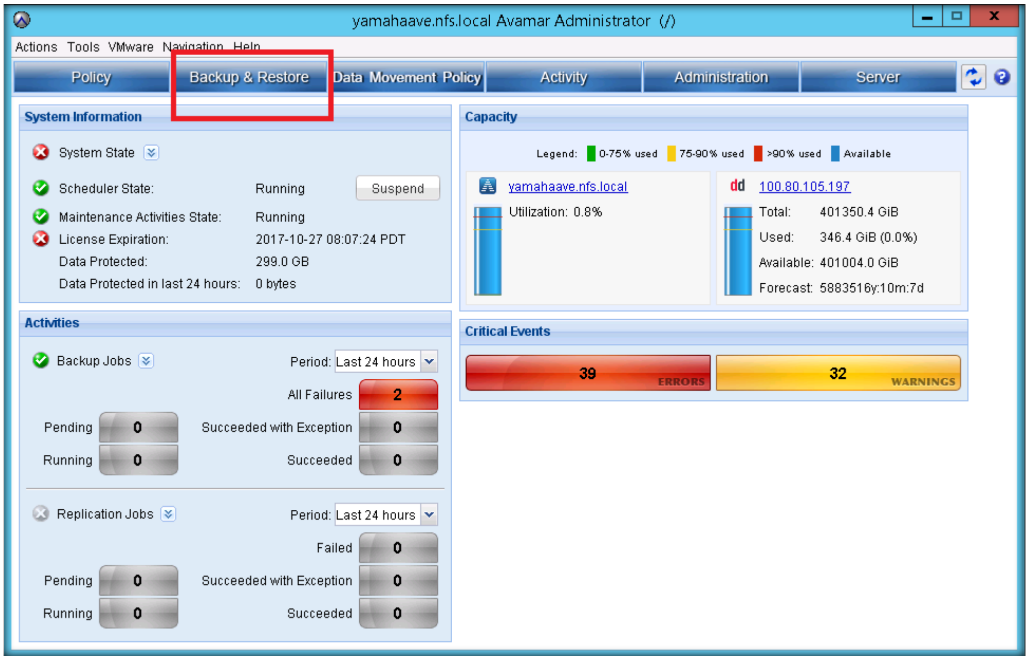
In order to restore VMs, launch the Avamar administrator and perform the restore operation. To launch the Avamar administrator, see the Launch Avamar Administrator section.

13.1 Example of VM Restore

Avamar Backup & Restore has many options. You can go through the detail of the restore process and apply as needed. Refer to the Avamar Administrator Guide 7.5.

The following is an example of how to restore an on-demand VM:

1. Launch Avamar Administrator and select **Backup & Restore**.



System Information

System State

Scheduler State: Running

Maintenance Activities State: Running

License Expiration: 2017-10-27 08:07:24 PDT

Data Protected: 299.0 GB

Data Protected in last 24 hours: 0 bytes

Capacity

Legend: 🟩 0-75% used 🟨 75-90% used 🟥 >90% used 🟦 Available

yamahaave.nfs.local

Utilization: 0.8%

100.80.105.197

Total: 401350.4 GiB

Used: 346.4 GiB (0.0%)

Available: 401004.0 GiB

Forecast: 5883516y:10m:7d

Activities

Backup Jobs — Period: Last 24 hours

All Failures 2

Pending 0 — Succeeded with Exception 0

Running 0 — Succeeded 0

Replication Jobs — Period: Last 24 hours

Failed 0

Pending 0 — Succeeded with Exception 0

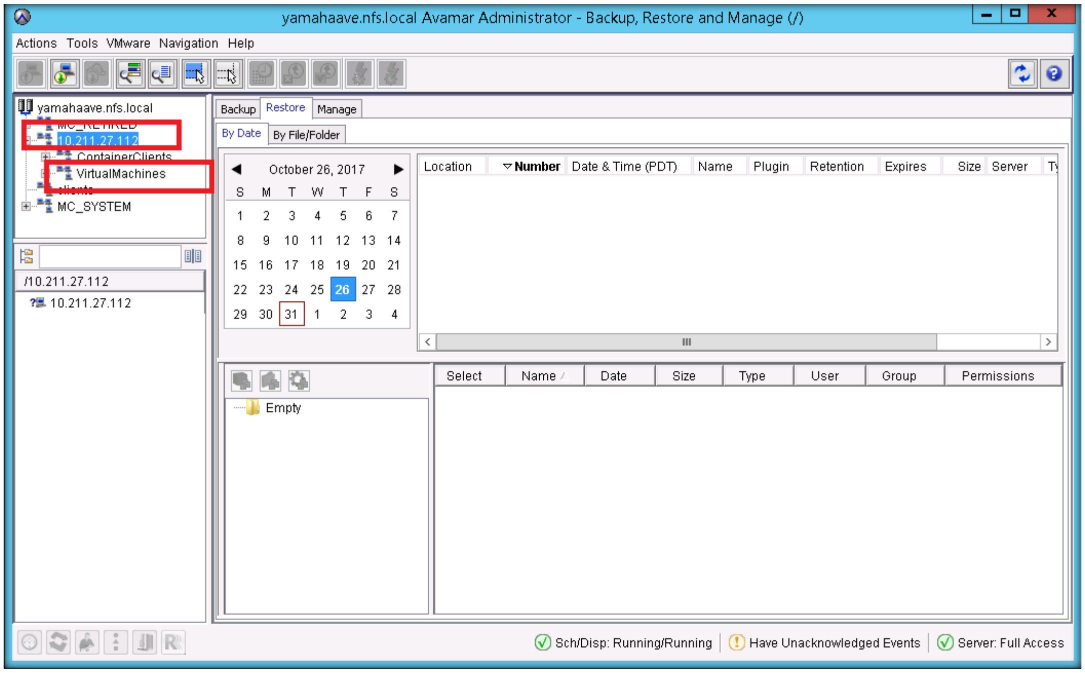
Running 0 — Succeeded 0

Critical Events

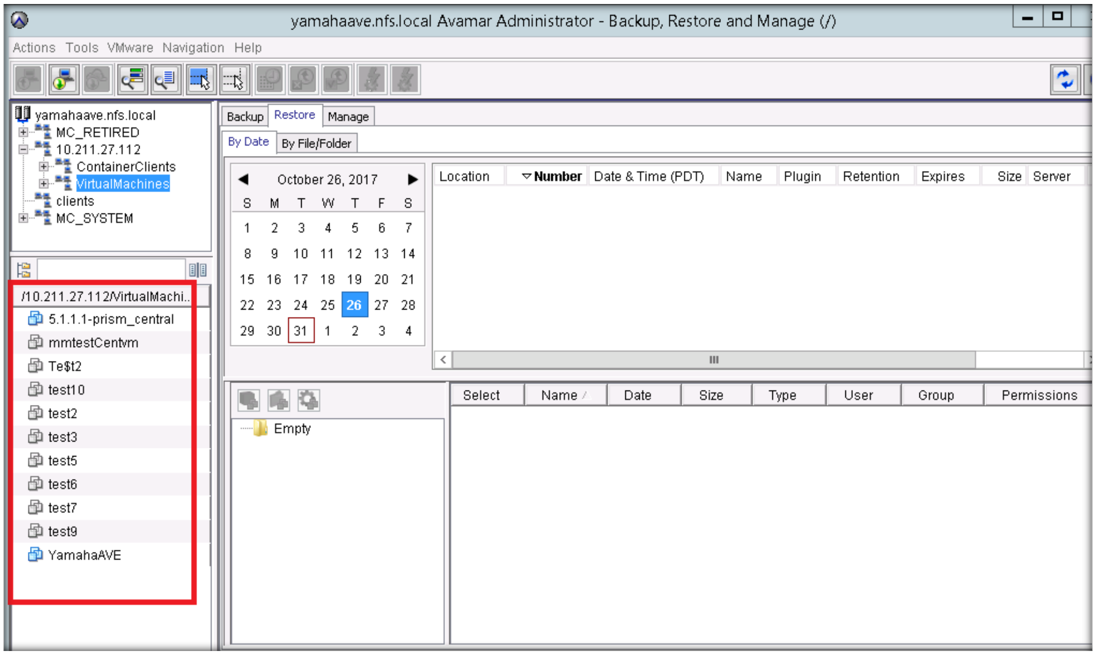
39 ERRORS

32 WARNINGS

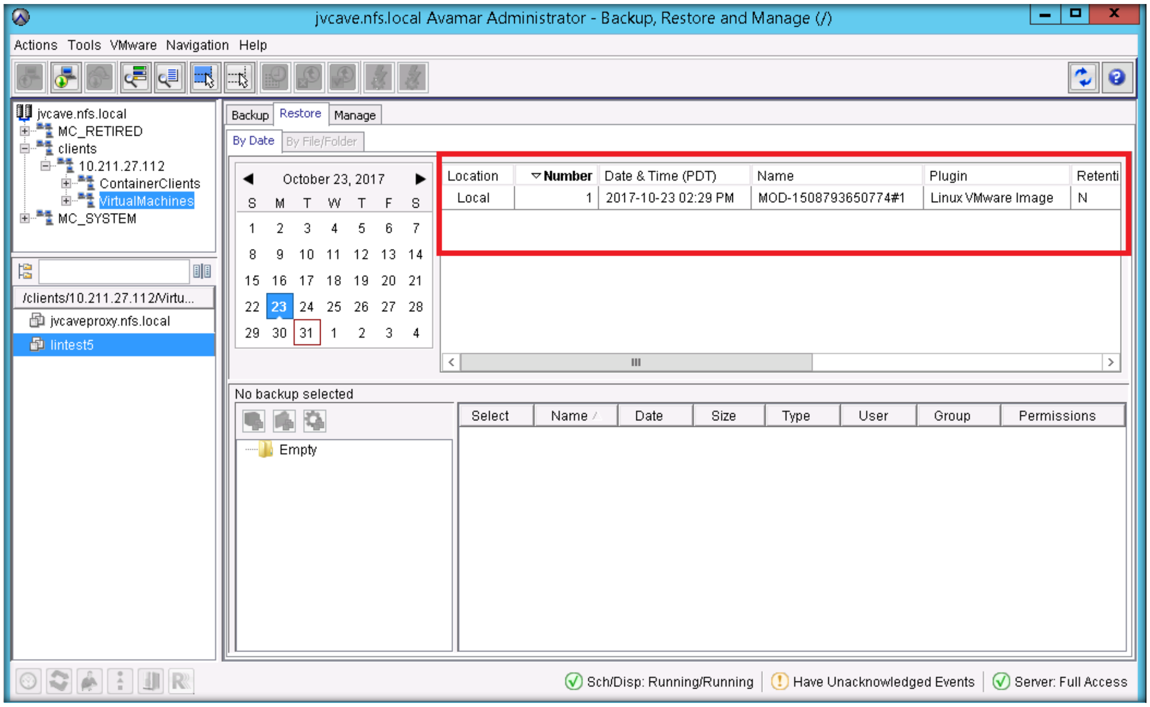
2. From the **Backup and Restore** page, select the Domain and the Clients.



3. The page provides a list of VMs that are being backed up and available for restore.



4. After a VM and a backup date is selected, an available image is displayed on the right side.



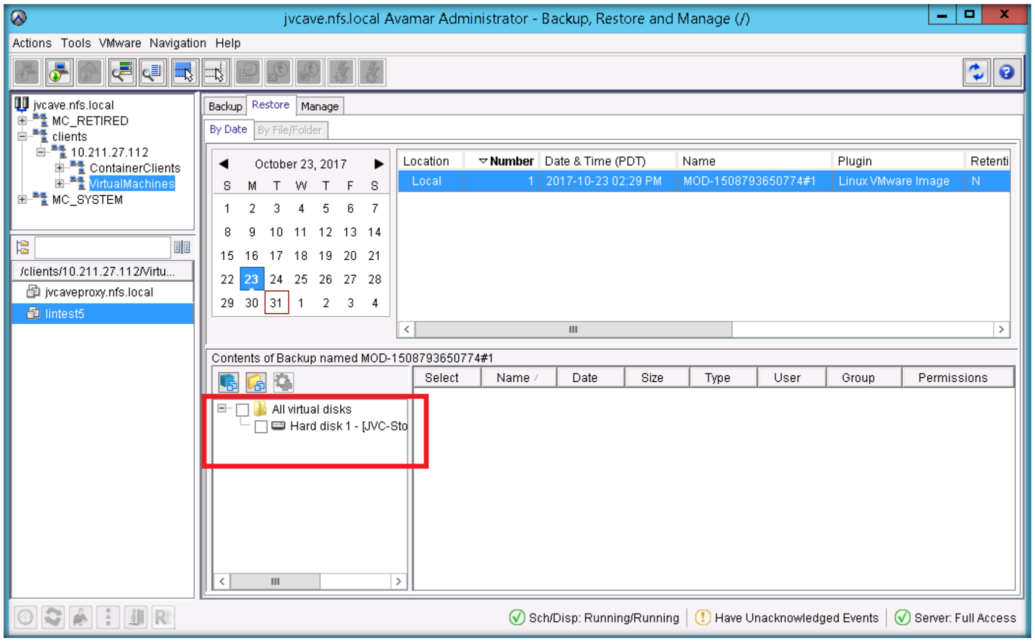
jvcave.nfs.local Avamar Administrator - Backup, Restore and Manage (/)

Location	Number	Date & Time (PDT)	Name	Plugin	Retenti
Local	1	2017-10-23 02:29 PM	MOD-1508793650774#1	Linux VMware Image	N

No backup selected

Sch/Disp: Running/Running | Have Unacknowledged Events | Server: Full Access

5. After the available image is selected, you are given the option to restore all virtual disks.



jvcave.nfs.local Avamar Administrator - Backup, Restore and Manage (/)

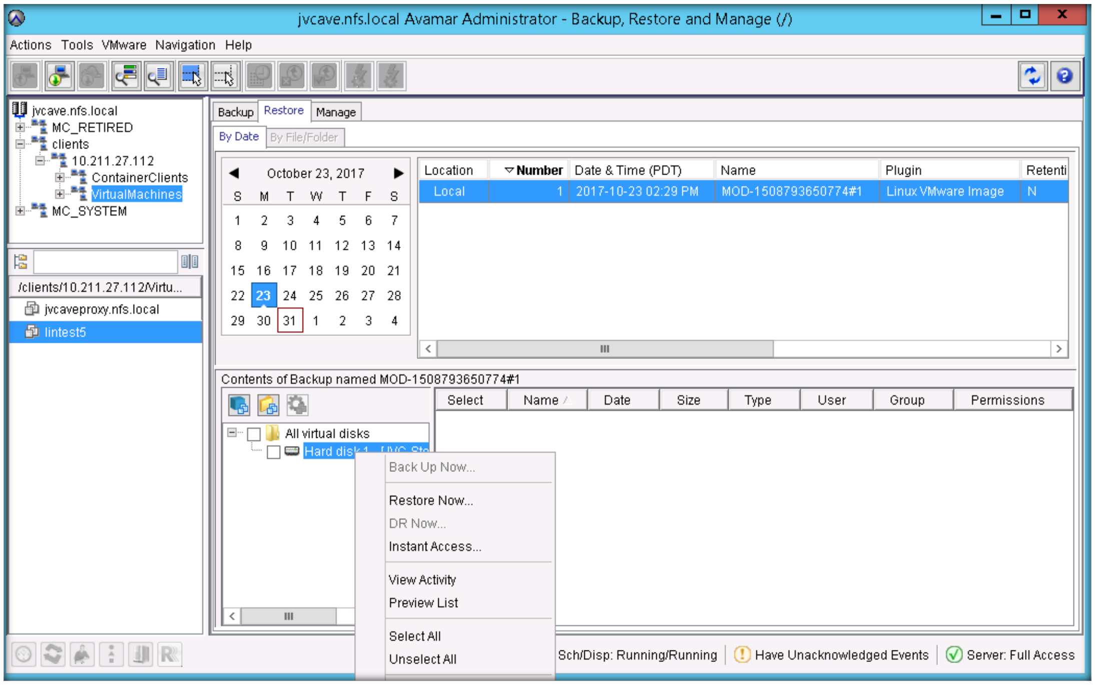
Location	Number	Date & Time (PDT)	Name	Plugin	Retenti
Local	1	2017-10-23 02:29 PM	MOD-1508793650774#1	Linux VMware Image	N

Contents of Backup named MOD-1508793650774#1

- □ All virtual disks
  - □ Hard disk 1 - [JVC-Sto

Sch/Disp: Running/Running | Have Unacknowledged Events | Server: Full Access

6. Right-click on the storage location to display the on-demand restore menu.



jvcave.nfs.local Avamar Administrator - Backup, Restore and Manage (/)

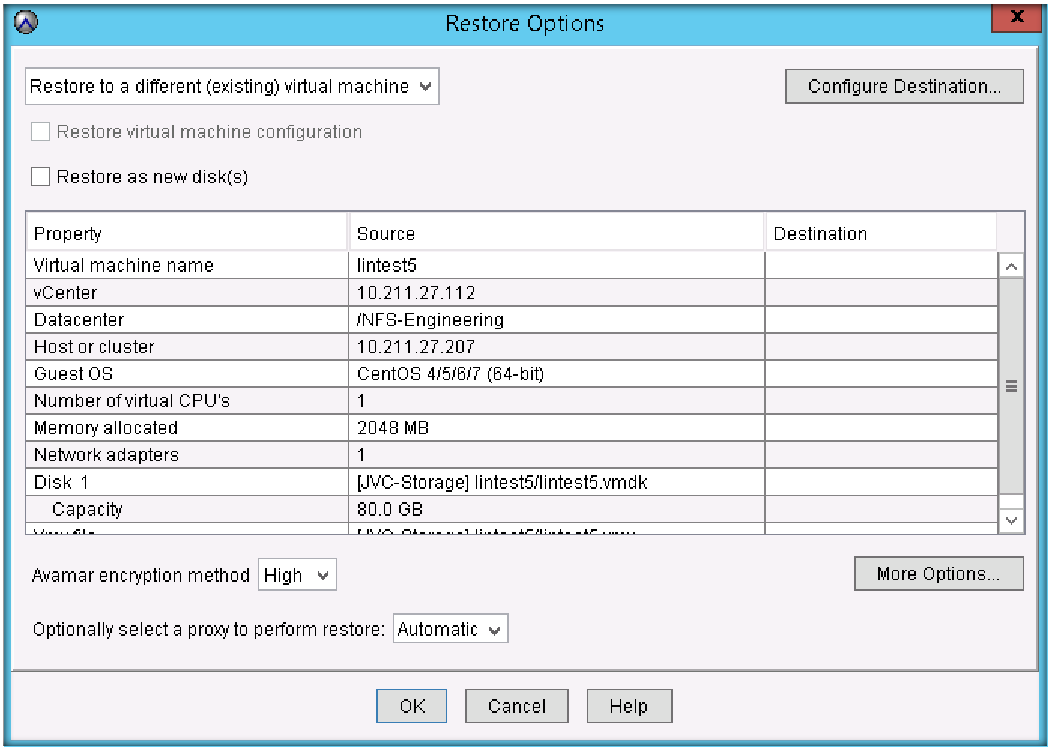
Location	Number	Date & Time (PDT)	Name	Plugin	Retenti
Local	1	2017-10-23 02:29 PM	MOD-1508793650774#1	Linux VMware Image	N

Contents of Backup named MOD-1508793650774#1

Sch/Disp: Running/Running | Have Unacknowledged Events | Server: Full Access

The following options are displayed after clicking **Restore Now**:

- Restore to original virtual machine
- Restore to a different (existing) virtual machine
- Restore to a new virtual machine



Restore Options

Restore to a different (existing) virtual machine

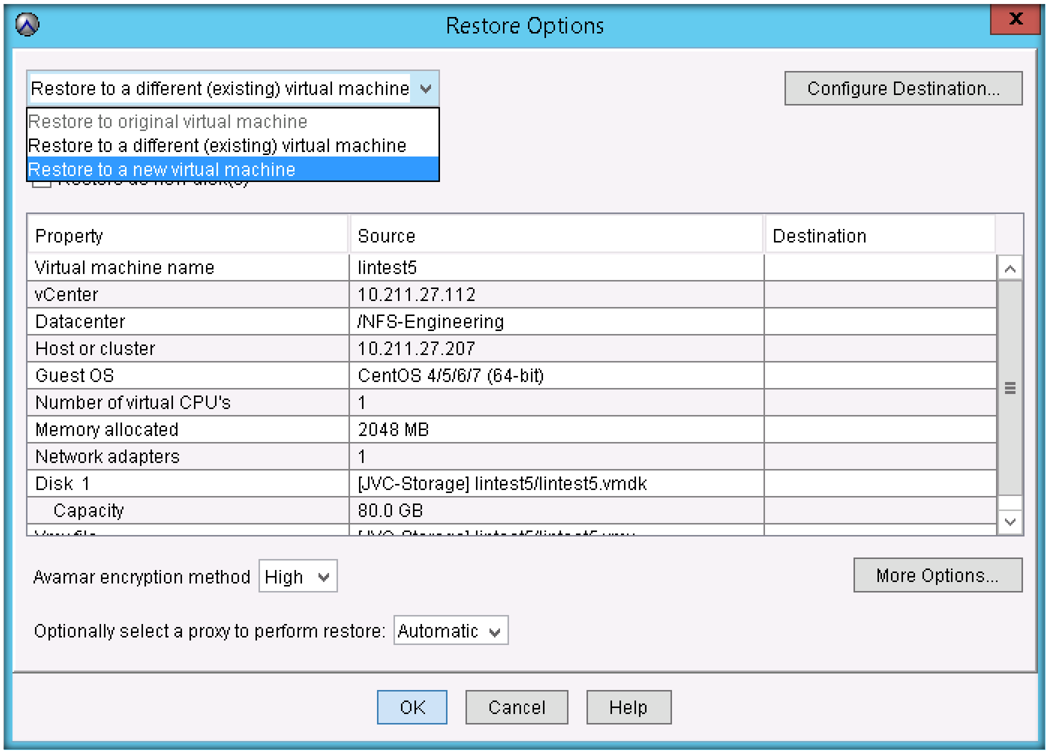
□ Restore virtual machine configuration

□ Restore as new disk(s)

Property	Source	Destination
Virtual machine name	lintest5	
vCenter	10.211.27.112	
Datacenter	/NFS-Engineering	
Host or cluster	10.211.27.207	
Guest OS	CentOS 4/5/6/7 (64-bit)	
Number of virtual CPU's	1	
Memory allocated	2048 MB	
Network adapters	1	
Disk 1	[JVC-Storage] lintest5/lintest5.vmdk	
Capacity	80.0 GB	

Avamar encryption method: High

Optionally select a proxy to perform restore: Automatic

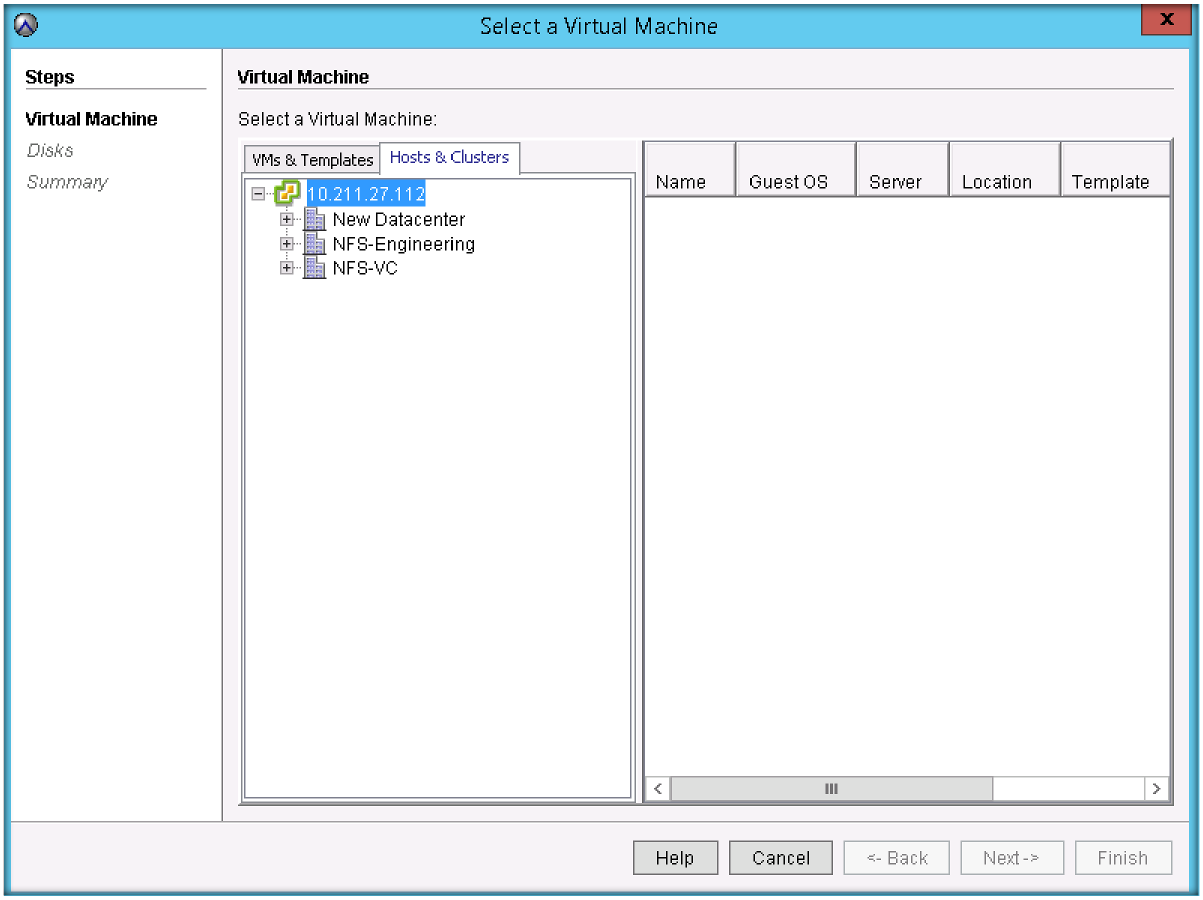

Restore Options
Restore to a different (existing) virtual machine
Restore to original virtual machine
Restore to a different (existing) virtual machine
Restore to a new virtual machine
Configure Destination...
More Options...
OK
Cancel
Help

Property	Source	Destination
Virtual machine name	lintest5	
vCenter	10.211.27.112	
Datacenter	/NFS-Engineering	
Host or cluster	10.211.27.207	
Guest OS	CentOS 4/5/6/7 (64-bit)	
Number of virtual CPU's	1	
Memory allocated	2048 MB	
Network adapters	1	
Disk 1	[JVC-Storage] lintest5/lintest5.vmdk	
Capacity	80.0 GB	

Avamar encryption method: High

Optionally select a proxy to perform restore: Automatic

You can also configure destinations for restore if needed.



A Technical support and resources

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