Active System Manager Solution Guide Active System 800

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1 Introduction to the Active System 800 Solution

Today, many IT organizations are missing deadlines or cannot respond fast enough to customer demands, have insufficient IT budgets, or have to manage trade-offs. In response, convergence in the data center has emerged as a trend in IT to address the growing needs for agility, efficiency, and quality. IT organizations are rapidly adopting converged infrastructure solutions to lower the cost of running critical workloads, enable faster infrastructure deployments, and drive simplicity and speed of management.

Below are some high-level solutions for the Dell[™] Active System (AS) 800:

- Rapid and Simple Scalability—The Dell AS 800 is a part of the Active Infrastructure family, which includes fully pre-integrated converged infrastructure solutions. As one of the pre-integrated solutions offered, the Dell Active System 800 is a scalable blade server and storage infrastructure designed to support private cloud infrastructures. Able to add compute and storage capacity as needed in a non-disruptive manner, the Active System 800 offers many different configuration options for varying business conditions and sizes for a highly utilized IT infrastructure.
- Quick and Easy Provisioning—The Dell Active System 800 allows for more rapid application deployments through minimized design, test, procurement, integration, and configuration phases. One key feature of the Active System 800 is the Active System Manager, which offers streamlined, automated processes, as well as a quick response to dynamic business needs through template-based, modular infrastructure provisioning. This allows IT infrastructures to achieve higher efficiencies and more accurate delivery of IT services. A single IT generalist can manage most common tasks via the streamlined and automated processes delivered through the Active System Manager.
- Automated and Efficient—The Dell Active System 800 enables your data center to reach its maximum potential, and reduces the complexity and amount of time spent manually managing storage functions through automation for a more efficient and simplified management. This allows the Dell Active System 800 to support the efficient, agile delivery of applications and IT services made possible by a private cloud infrastructure, delivering true IT as a Service through private cloud benefits such as self-service portals and chargebacks.

This document describes the deployment and management of Active System Manager 7.0 on Active System 800 infrastructures.

1.1. Audience

IT administrators and IT managers — who have purchased, or are planning to purchase an Active System configuration—can use this document to understand the design elements, hardware and software components, and the overall architecture of the solution

1.2. Support

Contact Dell technical Support by visiting the Dell web site at www.dell.com/support/softwarecontacts.

1.3. Technical Documentation

The Dell Active System Manager documentation enables you to better understand your current Active Infrastructure, its deployment, and management software.

For this release, we recommend that you familiarize yourself with the following documentation:

- Active System 800 Spec Sheet
- Active System 800 VMware ESX 5.x Reference Architecture
- Active System Manager 7.0 User Guide
- Active System Manager 7.0 Web Interface User Guide

To access the latest Active System Manager documentation for Version 7.0:

- 1. Navigate to <u>www.dell.com/support/manuals</u> and click **Choose** from a list of all Dell products.
- 2. Click Software, Monitors, Electronics & Peripherals > Software > Enterprise System Management > Dell Active System Manager v7.0.

1.4. Overview

This section provides a high-level product overview of VMware vSphere, Dell PowerEdge blade servers, Dell PowerEdge M I/O Aggregator, Dell Force10 S4810 switch, Dell Force10 S55 switch, and Dell EqualLogic Storage.















VMware vSphere 5.1 Hypervisor

- vMotion, Storage vMotion
- VMware HA and DRS

Dell PowerEdge Blade Servers for Compute Cluster

- Energy efficient PowerEdge M1000e endosure
- 12th generation M620 blade server
- Flex Address
- CMC and iKVM for endosure management

Dell PowerEdge M I/O Aggregator

- Highest Performance in a Blade Switch
- Highest Density in a Single Blade Switch
- Stackable for Simplified Management
- Scalability & Modular to Fit Your Business
- Support for converged networking with Data Center Bridging (DCB)

Dell PowerEdge Rack Servers for Management Cluster

- · 12th generation R620 rack servers
- · Concentrated computing power in 1U form factor
- Large memory and I/O capacity
- · Powerful systems management with Dell iDRAC and Lifecycle Controller

Dell Force10 S4810 Switches for Converged Network

- High-density 48-port 10 GbE switch with four 40 GbE uplinks
- Ultra-low-latency, non-blocking, cut-through switch for line-rate L2 and L3 performance
- Integrated network automation and virtualization tools via the Open Automation Framework
- Support for converged networking with Data Center Bridging (DCB)

Dell Force10 S55 Switch for Management

- High-density 48-port 1/10 GbE scalable switch
- Low-latency, non-blocking switch for line-rate L2 and L3 performance
- Integrated network automation and virtualization tools via the Open Automation Framework

Dell EqualLogic Storage

- 10GbE iSCSI SAN arrays with SFP+ and 10GBase-T support
- Thin Provisioning and Storage Tiering
- Support for converged networking with Data Center Bridging (DCB)
- Integration with VMware

Integrated Management

- Dell Active System Manager
- VMware vCenter Server
- Dell Management plug-in for VMware vCenter
- Dell OpenManage Essentials
- Dell EqualLogic Virtual Storage Manager (VSM) for VMware
- Dell EqualLogic SAN HeadQuarters (HQ)
- Dell Repository Manager

Cloud Enablement

VMware vCloud Connector for Dell vCloud connectivity

Table 1 lists the Active System Manager solution for the Active System 800-supported components.

Component	Details		
VMware vSphere 5.1 Hypervisor	Up to 2x Dell PowerEdge M1000e chassis with up to 32x Dell PowerEdge M620 Blade Servers and embedded VMware vSphere 5.1		
Converged Fabric Switch	• 2xDell Force10 S4810		
	 2x Dell PowerEdge M I/O Aggregator in each Dell 		
	PowerEdge M1000e chassis		
Storage	 Up to 8x Dell EqualLogic PS6110 series arrays 		
Management Infrastructure	• 2x Dell PowerEdge R620 servers with embedded VMware vSphere 5.1 hosting management VMs.		
	 1x Dell Force10 S55 used as a 1Gb out-of- band management switch 		
Management components hosted in the	Dell Active System Manager		
	VMware vCenter Server		
	 Dell Management Plug-in for VMware vCenter 		
	Dell OpenManage Essentials		
	• Dell EqualLogic Virtual Storage Manager (VSM) for VMware		
	• Dell EqualLogic SAN Headquarters (HQ)		
	VMware vCloud Connector		
	Dell Repository Manager		

Table 1. Active	e Svstem	800-Supported	Components

1.5. Active System 800-Supported Configurations

Table 2 lists the Active System Manager solution for the Active System 800-supported configurations.

Configuration	Support
M1000e chassis and supported blade types (M620)	Support firmware images as per the Active System Manager solution for Active System 800
Dell Force10 Top-of-Rack (ToR) S4810 switches	Supported FTOS and base configuration will be packaged in the virtual appliance. The base configuration should be updated for management IP and virtual LAN (VLAN) per data center deployment need.
Dell EqualLogic PS6110 Storage Array	Supported firmware versions will be packaged in the virtual appliance.
VMware vCenter 5.1 for virtual machine (VM) workloads	Supported ESXi 5.1 image will be bundled in the virtual appliance
ESXi 5.1 installation support on blade servers	

Table 2. Active System 800-Supported Configurations

1.6. Deployment Options

The Active System Manager solution for Active System 800 is packaged as a virtual appliance and is made available for VMware vCenter 5.1 and the Windows Server 2012 System Center Virtual Machine Manager (SCVMM); see Table 3:

- Open Virtualization Format (OVF) for VMware—The disk format is VMware virtual machine disk (VMDK).
- Hyper-V virtualization environment—The disk format is virtual hard disk (VHD) for Hyper-V.

Table 3. Deployment Options

Virtual Appliance Filenames	Platform
Dell-ActiveSystemManager-7.0.0.xyztp_VMware.zip	VMware vCenter 5.1
Dell-ActiveSystemManager-7.0.0.xyztp_Microsoft.zip	Microsoft Server 2012 with Hyper-V

1.7. Deployment Prerequisites

Before using the Active System Manager solution for end-to-end provisioning of Active System 800 components, ensure that the prerequisites listed in Table 4 are in place.

Table 4.Deployment Prerequisites

Specification	Prerequisite
Active System 800 units connected per the Active System 800 Reference Architecture and Design Guidelines	
Management server is configured per the Active System 800 Reference Architecture and Design Guidelines	
Firmware and BIOS Requirements	All equipment must be configured with firmware versions as listed in section Appendix C—Firmware and Software Base Lineup
For the Active System 800 chassis, blade server, and IO aggregators:	 CMC for M1000e chassis is configured and has the management IP address and login credentials assigned Server iDRAC and IOA is configured and has the management IP address and login credentials assigned using CMC Management interface. The username (root) and password for CMC, IOA, and iDRAC must be identical.
Force10 S4810 switches (Top-of- Rack [ToR])	 The management IP address is configured for the ToR switches. The A800 base configuration is applied on both switches. VLANs are created on the switches per the Active System 800 deployment specification. The virtual machine (VM) traffic VLANs will be created dynamically by Active System Manager.
EqualLogic Storage Array	 The group IP and management IP are configured for Storage Array. All storage array members are added to the group.
VMware vCenter 5.1	 vCenter 5.1 is configured and accessible via the management and hypervisor management network. Appropriate licenses are deployed on the vCenter.
PXE Setup for server deployment	Details for deploying PXE Server is listed in section Appendix G–PXE Setup Requirements. This setup is needed for PXE boot of the servers only.

2 Active System Manager Deployment

2.1 Deploying OVF

The Active System Manager Open Virtualization Format (OVF) can be imported on to an ESXi host using the VMware OVF import process. When booted, the Active System Manager VM get its IP address from an existing DHCP server. If the DHCP server is not configured, then assign the IP address manually to the appliance.

2.1.1 Importing OVF from the vSphere Client

To import OVF from the vSphere Client, perform the following steps:

1. On the vSphere Client menu, click File > Deploy OVF Template.



2. Browse the OVF file and select Next.

Figure 2. Deploy OVF Template Source File Location

Deploy OVF Template	
Source Select the source location.	
Source OVF Template Details Name and Location Storage	
Disk Format Ready to Complete	Deploy from a file or URL

3. In the Name field, enter the VM name and click Next.

Figure 3. Name and Location of the Deployed Template

Content of the second s



- 4. Select the appropriate datastore name where the VM must be hosted.
- 5. Select the disk format. (Thin provisioning is supported and recommended.)
- 6. Select the network name. The VM must be mapped to the Hypervisor Management Network. All networks (for example, OOB, Hypervisor Management, vMotion, iSCSI, and VM workloads) are expected to be accessible from the appliance.

Figure 4. Mapping the Networks Used in the OVF Template

Map the networks used in this OVF template to netw	orks in your inventory
Source Networks	Destination Networks
VM Network	VM Network

7. Table 5 lists the necessary key access credentials to use.

Table 5.Key Access Credentials

VM Access Credentials	Username/Password
Active System Manager server installation login	delladmin/delladmin
Active System Manager server root	root/Dell@123
Active System Manager application	admin/admin

2.2 Deploying VHD

The Active System Manager Open Virtualization Format (VHD) can be imported on to a Hyper-V host using the Hyper-V Manager > Import Virtual Machine option. When booted, the Active System Manager VM gets its IP address from an existing DHCP server. If a DHCP server is not configured, manually assign the IP address to the appliance.

2.2.1. Importing the VHD Using Hyper-V Manager

To import the VHD from the Hyper-V Manager, perform the following steps:

1. On the Hyper-V Manager dialog box, select a host, right-click and select **Import Virtual Machine**.

∎∎Hyper-¥ Mana	ger
Eile Action	View Window Help
🗢 🔿 🔁 🗖	
Hyper-V Manag	Jer Virtual Mac
MIN-4FEGS	New +
	Import Virtual Machine
	Hyper-V Settings
	Virtual Network Manager
	Edit Disk
	Inspect Disk
	Stop Service
	Remove Server
	Refresh
	View
	New Window from Here
	Help

Figure 5. Hyper-V Manager > Import Virtual Machine

2. Click **Browse**, navigate to the location where the VDH is available in the extracted format, and click **Import**.

Figure 6. Import Virtual Machine

🛃 Import Virtual Machine	×
Specify the location of the folder that contains the virtual machine files.	
Location: Browse	
Settings	
Import settings:	
 Move or restore the virtual machine (use the existing unique ID) 	
C Copy the virtual machine (create a new unique ID)	
Duplicate all files so the same virtual machine can be imported again	
The same virtual machine cannot be imported again if you do not copy the files unless you have backed them up to another location first.	
Import Cancel	

Figure 7. Select Folder Option

Hyper-V Manager						
🛃 Import Virtual Mach	nine		×			
💫 Select Folder						×
🕞 🖓 ~ 📕 • exp	oort 👻 A	ctive-System-Manager-7.0-Build-21286_Microsoft 👻	•	🧐 🛛 Search Active-Syst	em-Manag	2
Organize 🔻 New fo	lder				•	0
		Name *	Date modified	Туре	Size	
E 🔀 Favorites		🐌 Snapshots	2/25/2013 8:49 AM	File folder		
Downloads		鷆 Virtual Hard Disks	2/25/2013 8:49 AM	File folder		
📃 Recent Places		퉬 Virtual Machines	2/25/2013 9:06 AM	File folder		
E 💽 Computer						
E CD Drive (E:) W	'D					
🗉 👝 New Volume (F:)					
⊞ 👝 New Volume (M:	:)					
	Folder:	Active-System-Manager-7.0-Build-21286_Mic	rosoft			
				Select Folder	Cancel	

3. Select a folder to house the VHD and click Select Folder.

Figure 8. Import Settings

💫 Import Virtual Machine	×
Specify the location of the folder that contains the virtual machine files.	
Location: F:\export\Active-System-Manager-7.0-Build-21286_Microsoft\ Browse	
Settings]
Import settings:	
 Move or restore the virtual machine (use the existing unique ID) 	
C Copy the virtual machine (create a new unique ID)	
Duplicate all files so the same virtual machine can be imported again	
The same virtual machine cannot be imported again if you do not copy the files unless you have backed them up to another location first.	
Import Cancel	

4. Verify the location that contains the virtual machine files and click Import.

Figure 9. Newly-Imported VM Displayed on the Hyper-V Manager

∎∎Hyper-¥ Manager			
File Action View Window	Help		
🗢 🔿 🔰 🖬 🚺 🖬			
Hyper-V Manager	Virtual Machines		
	Name 🔺	State	CPU Usage
	Active-System-Manager-7.0-Build-21286_Microsoft	Off	

5. Select the VM and click **Start** to power on the VM.

Virtual Machines Name State Active-System-Manager-7.0-Build-21286_Microsoft 04 Connect... Settings... Start Snapshot Export... Rename... Delete... Help

Figure 10. Starting the VM

6. Select the network. The VM should be mapped to the Hypervisor Management Network. All the networks (for example, OOB, Hypervisor Management, vMotion, iSCSI, and VM workloads) are expected to be accessible from the appliance.

Settings for Active-System-Manager-7.	D-Build-21286_Microsoft
Active-System-Manager-7.0-Build-21286_N	₽] 4 ►
★ Hardware Madd Hardware BIOS Boot from CD Memory 4096 MB Processor 4 Virtual processors Image: Strate Controller 0 Image: Hard Drive Active-System-Manager-7.0-B	Network Adapter Specify the configuration of the network adapter or remove the network adapter. Network: Local Area Connection - Virtual Network MAC Address Ø Dynamic Ø Static Ø - 15 - 50 - 78 - 64 - 06
 IDE Controller 1 VM-Bus Network Adapter Local Area Connection - Virtua 	Enable spoofing of MAC addresses
COM 1 None COM 2 None Diskette Drive None	Enable virtual LAN identification VLAN ID The VLAN identifier specifies the virtual LAN that this virtual machine will use for all network communications through this network adapter. Z

Figure 11. Selecting the Network

7. Click **Connect** to launch the console.

Figure 12. Connecting to Launch the Console



2.3 Assigning IP Address to the Active System Manager

To assign the IP Address to the Active System Manager appliance, perform the following steps:

1. On the vSphere or Hyper-V Manager client, select the deployed **Active System Manager** appliance and open its console.



Figure 13. Logging In to the Active System Manager

- 2. Log in as the root user. Root user credentials are given Key Access Credentials.
- Navigate to System >Preferences >Network Connections to launch the Network Connections wizard.

lome 🕞	NL	atwork Connections	
	Wired Wireless	Mobile Broadband	
h	Name	Last Used	Add
	Auto eth0	3 minutes ago	
	Auto eth2	24 days ago	Edit
	Auto eth1	1 month ago	Delete
	System eth0	never	

Figure 14. Network Connections Wizard

- 4. Select the network interface card (NIC) appliance on which IP address should be configured manually and click **Edit**.
- 5. When the Editing dialog box displays (see figure below) update the IP address: select the IPv4 settings, click the **Method** drop-down list and select **Manual**.

	Editing Auto eth0	×
Connection <u>n</u> ame: A	uto eth0	
✓ Connect <u>a</u> utomatic	ally	
Wired 802.1x Securi	ty IPv4 Settings IPv6 Settings	
Method: Manual		
Addresses		×
Address Ne	tmask Gateway <u>A</u> dd	DSL
	Delete	i d
		- 161
		- 151
DNS servers:		
Search domains:		
D <u>H</u> CP client ID:		
Require IPv4 a	addressing for this connection to comple	te
	Routes	
Available to all use	rs <u>C</u> ancel Apply.	

Figure 15. Editing

6. Click **Add** to provide the IP address and other networking details (for example, DNS), as shown in the next figure.

Figure 16. Adding IP Addresses

Wired	802.1x Securit	y IPv4 Sett	ings	IPv6 Se	ettings	
<u>M</u> etho	od: Manual					\$
Addr	esses					
Ad	ldress	Netmask	Gate	eway	Add	t
19	2.168.120.156	24			Dele	te
<u>D</u> N	S servers:	192.168.120).216			
<u>S</u> ea	arch domains:					
D <u>H</u>	CP client ID:					
\checkmark	Require IPv4 a	ddressing for	this	connectio	on to con	nplete
					Routes	
🗹 Ava	ilable to all user	s	<u>(</u>	<u>C</u> ancel	Ap	ply

Click Apply. Once this is done, open the terminal by clicking Applications > System Tools > Terminal.

Computer		
	E root@asm-galeforce:~ _ C	×
	<u>File Edit View S</u> earch <u>T</u> erminal <u>H</u> elp	
root's Home	[root@asm-galeforce ~]#	\sim
Trash		=
		×

Figure 17. Terminal Console

- 8. Execute the /etc/init.d/network restart command.
- 9. Log in to the appliance with the newly configured IP address. This will ensure that IP address is configured correctly on appliance.

2.4 Installing the Active System Manager License

To install the Active System Manager license via the web client, perform the following steps:

- 1. Close all Active System Manager clients (web client and thick RCP client) connected to the Active System Manager server. (The RCP client installation details are provided in the subsequent sections.)
- 2. Log in to the Active System Manager Services as the delladmin/delladmin user.
- 3. If the license.lic file already exists, create a backup available under **\$HOME/asm-**galeforce/gf/common/etc/license.lic.
- 4. Copy the new license file as **license.lic** in the **\$HOME/asm-galeforce/gf/common/etc** directory.

2.5 Configuring Active System Manager Services

2.5.1 Starting Services

Appliance is configured to start Active System Manager services during start-up. Following are the steps for starting the appliance manually.

- 1. Log in as the **delladmin** user. The password is listed in the 2.1 Deploying OVF section.
- 2. Execute the following command:

```
cd $HOME/asm-galeforce/gf/sbin
./startGF.sh
```

Note:

The Active System Manager services must not be started by the root user.

2.5.2 Stopping Services

Following are the steps for stopping the services manually.

- 1. Log in as the **delladmin** user. The password is listed in the 2.1 Deploying OVF section.
- 2. Execute the following command:

```
cd $HOME/asm-galeforce/gf/sbin
./stopGF.sh
```

2.5.3 Verifying Service Status

To verify that all Active System Manager services are up and running, perform the following steps:

- 1. Log in as the **delladmin** user. The password is listed in the 2.1 Deploying OVF section.
- 2. Run the following script to display the current status of all services, including the Oracle database status:

```
cd asm-galeforce/gf/sbin
./gfstatus.sh
```

Below is sample output:

Active System Manager Services Status

```
Installation
Release Version: 7.0
Build Number: 21286
Database
```

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```
Vendor: Oracle (Ver: 11.2.0.1.0)
Host: asm-galeforce Port: 1521
Service name: DB11G
Status: Running
Active System Manager Service
Host: asm-galeforce Port: 40500 Secure Port: 50500
Enterprise: Dell
Lab: DEMO
Status: Running
Domain Services
_____
1. Domain : System (Id: 1)
  Description:
  _____
  Session server
    Host: asm-galeforce Port: 40500 Secure Port: 50500
     Status: Running
```

2.6 Installing the Active System Manager Client

You can install the Active System Manager Client on the following platforms:

- 2.6.1 Installing Active System Manager Client Software on Windows
- 2.6.2 Installing the Active System Manager Client Software on Mac
- 2.6.3 Installing the Active System Manager Client Software on Linux

2.6.1 Installing Active System Manager Client Software on Windows

To install the Active System Manager Client software on a Microsoft Windows OS, perform the following steps:

- 1. Download the Active System Manager installer, x64 version should be downloaded for x64 OS and x32 should be downloaded for x32 based OS
- On your desktop, click Start > Run > Browse, navigate to the setup.exe file, and click OK. Alternatively, from your Windows Explorer window, navigate to the setup.exe file and doubleclick it.

A Security Warning window prompts you to run the file.

3. Click Run to enable the installation wizard to guide you through the installation process.

Note:

If an existing version of the client is on the client machine, invoking the installer prompts you to select to uninstall the existing version already on the system. Once selected, the installer uninstalls the existing version and then exits. You must perform the originally intended install after uninstalling the previous version as a single step.

4. Click Finish to complete the installation process.

2.6.2 Installing the Active System Manager Client Software on Mac

To install the Active System Manager Client software on a Mac OS, perform the following steps:

- 1. Download the ActiveSystemManager-macosx.x86_64_7.0.0_xyzt.zip file.
- 2. Unzip the file into a specific folder destination on your hard drive.
- 3. Create the Active System Manager folder and move the file contents to this location.
- 4. Execute the Active System Manager.app file.

2.6.3 Installing the Active System Manager Client Software on Linux

To install the Active System Manager Client software on Linux, perform the following steps:

- 1. Download the ActiveSystemManager-linux.gtk.x86_7.0.0_xyzt.zip file.
- 2. Unzip the file into a specific folder destination on your hard drive.
- 3. Create the Active System Manager folder and move the file contents to this location.
- 4. In the console, execute the Active System Manager file.

2.6.4 Accessing Active System Manager Using the Windows Client Software

To access the Active System Manager software using the Windows Client software, perform the following steps:

1. Launch the client software application.



Figure 18. Launching the Active System Manager Client Software

2. Click Setup to create the account setup.

Figure 19. Connecting to the Active System Manager Server

Connect to Active System Manager Server						
	Active System Manager					
Account:	Setup					
Username:						
Password:						
0	OK Cancel					

3. On the Setting Up Accounts dialog box, click **Add**. Name the account as the connection to the Active System Manager appliance.

Figure 20. Setting Up Accounts

(IIII) Setting up Accounts	×
List of Accounts	
	Add Edit Delete
<u> </u>	lose

4. Provide the name of the connection and IP address of the appliance. The name of the connection can be any descriptive as shown in the following figure.

Figure 21. Adding New Account

(III) Add New Account						
Account:	Active System Manager					
Server:	192.168.120.112					
Port:	40500					
Transport:	Normal (over HTTP) 🔹					
OK Cancel						

- 5. Click **OK** and close the Setting Up Account dialog box.
- 6. Select the account created in earlier step 4.

Figure 22. Logging In to the Active System Manager

(Connect to Active System Manager Server					
	Active System Manager				
Account: Username:	Active System Manager				
Password:					
0	OK Cancel				

7. Provide the username and the password for the appliance. The default username and password is **admin/admin**. Click **OK** to launch the Active System Manager application.

3 Active System Manager Setup

This section captures the sequence of steps which should be followed within Active System Manager for managing deploying the blade servers in the Active System 800.

3.1 User and Group Management

You can manage users and groups within the Active System Manager either directly (by entering the values for individual users and groups from the Windows Client graphical user interface [GUI]), or by importing users from an external repository, such as Lightweight Directory Access Protocol (LDAP), Active Directory (AD), or Network Information Service (NIS).

For user management, log in to the Windows client and navigate to **Tools** > **User and Groups**. The **Security Management-Users and Groups** dialog box displays.

Note:

Set the time zone to match the time on the workstation that the Active System Manager client is installed.

Gecurit	ty Managen	nent							×
Users a Add, ed Users	and Group it, and delet Groups	ps te users and gr	oups with asso	ciated permissi	ions				4
Search:									
Userna	ame	First Name	Last Name	Role	Authentic	Email	Status	Time Zone	✓ Add
admin	1	admin	admin	Administr	AL	abc@galetech.com	Active	America/Los_Angeles	Edit Delete Profiles Copy Reset Password Activate Deactivate Switch To
•					III			4	
0									Close

Figure 23. Security Management–Users and Groups

For details on user and group administration, see the "User Profile Management" chapter in the *Active System Manager User Guide*, which is downloadable from the Active System Manager 7.0 web portal (**Help** menu) or from the Thick client(Eclipse-based).

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3.2 Discovering Active System 800 Components

Discovery of the Active System 800 components includes:

- Dell M1000e Chassis
- Dell M620 Blade servers
- Dell PowerEdge M I/O Aggregators
- Force10 Top-Of-Rack (ToR) S4810 switches
- Dell EqualLogic Storage Array
- VMware vCenter Server components

3.2.1 Initiating Discovery

To initiate the Discovery process, perform the following tasks in this order:

- 3.2.1.1 Configuring Discovery Setup
- 3.2.1.2 Adding Details for the Active System
- 3.2.1.3 Adding vCenter System Properties
- 3.2.1.4 Starting the Discovery Process

3.2.1.1 Configuring Discovery Setup

To configure Discovery settings, perform the following steps:

- 1. Connect to the Active System Manager Client using user credentials with Administrator privileges.
- 2. Select Tools >Discovery >Setup.

Figure 24. Discovery Menu Options



The Discovery Configuration Setup page displays.

Figure 25. Discovery Configuration Setup

💖 Discovery Configuration 🛛			- E
			::
Discovery Configuration Setup			
Use this UI to discover one or more Dell Active Syste	ems with associated serv	ers, storage arrays and switches (TOR). Before you proceed, it is recommended to:	
 Gather IP addresses and access credentials assoc 	iated with the chassis / b	lade infrastructure elements, storage arrays and switches (TOR).	
Make sure all elements have network connectivit	ty, and the associated ele	ment management interfaces are accessible from the Active System Manager server.	
Active System Manager Configuration		Active System Manager Domain	
Select elements to view/update details Solution System Solution System	Add System Add vCenter Add vCenter Add Element Remove	System domain comes pre-configured with Active System Manager. Based on your deployment, your administrator may have configured multiple domains. Add System Choose this option if you wish to add a full pre-fabricated converged Infrastructure for discovery. Add vCenter Choose this option to add the VMware vCenter [™] instance that will be used for managing the vSphevintualization environment. Add Element	ere™
😸 vCenter1 VMware Host		Choose this option if you wish to add more elements to existing infrastructure.	

3.2.1.2 Adding Details for the Active System 800 Unit

To add details for the Active System 800 unit, click **Add System**. This feature displays names for Active System 800 components that will be discovered; for example:

- Dell Chassis
- Dell EqualLogic Storage Array
- Dell Force10

Figure 26. Adding System Details

Discovery Configuration Setup

Use this UI to discover one or more Dell Active Systems with associated servers, storage arrays and switches (TOR). Before you proceed, it is recommended to:

• Gather IP addresses and access credentials associated with the chassis / blade infrastructure elements, storage arrays and switches (TOR).

•	Make sure all elements have network connectivity	, and the associated	l element management in	terfaces are accessible from t	he Active System	Manager server.
---	--	----------------------	-------------------------	--------------------------------	------------------	-----------------

Active System Manager Configuration		System pro	perties
Select elements to view/update details		Name is ma	andatory and should be unique.
System System Solution Solution Total EqualLogic-PS6110 Dell Force10-S4810 Dell Force10-S4810	 Add System Add vCenter Add Element Remove 	Name: Username: Password:	

3. Select the individual components and provide the required IP address/login credentials per the figure.

Figure 27. Dell Chassis Element Properties

Discovery Configuration Setup

Use this UI to discover one or more Dell Active Systems with associated servers, storage arrays and switches (TOR). Before you proceed, it is recommended to:

Gather IP addre	sses and access credentials associated	with the chassis / blade infr	rastructure elements, storage a	arrays and switches (TOR).
-----------------	--	-------------------------------	---------------------------------	----------------------------

• 1	lake sure all elements have network connectivit	, and the associated element management interfaces are ac	cessible from the Active System Manager serve
-----	---	---	---

- Assettag–Required. Unique key or name used to import or identify the Dell 0 M1000e Chassis within Active System Manager. For example Assettag Dell_Chassis_001 (a unique name) can be used to track the chassis in Active System Manager
- Username-Username to access and manage the Dell M1000e Chassis. 0
- Password-Password to access and manage the Dell M1000e Chassis. 0
- IP Address-Required. IP address for the Dell M1000e Chassis CMC. The CMC 0 should be IP reachable from the Active System Manager server.
- 4. Provide the following element properties for the Dell EqualLogicStorageArray system (Figure 7):

Figure 28. EqualLogicStorayArray Element Properties

Discovery Configuration Setup			
Use this UI to discover one or more Dell Active Systems wit	h associated servers, storag	ge arrays and switches (TOR). Before you p	roceed, it is recommended to:
 Gather IP addresses and access credentials associated w 	ith the chassis / blade infra	structure elements, storage arrays and swit	ches (TOR).
 Make sure all elements have network connectivity, and 	the associated element ma	nagement interfaces are accessible from th	ne Active System Manager server.
Active System Manager Configuration		Element Properties	
Select elements to view/update details		Specify element details. Assettag and IP	Address are mandatory.
🖌 🗁 System	▼ Add System	Manufacturer: Dell	
▲		Model EqualLogic-PS6110	
"A" Dell EqualLogic-PS6110	Add vCenter	Assettag:	
Dell Force10-S4810	 Add Element 	Username:	
Dell Force10-S4810	Remove	Destruction	
		Password:	
		IP Address:	
		Discovery Attributes	
		Name	Value

- Assettag–Required. Unique key or name for the EqualLogic Storage Array, 0 which is used to import or identify an EqualLogic Storage Array in the Active System Manager. For example, Assettag Dell_EqualLogic_PS6100_1 (a unique name) can be used to track the EqualLogic array in Active System Manager.
- Username–Group username to access and manage the EqualLogic Storage 0 Array.
- **Password**—Group password to access and manage the EqualLogic Storage Array. 0
- IP Address-Required. Group Management IP address for the EqualLogic Storage 0 Array. Group Management IP should be reachable (via ping to test) from the ASM server Group IP of the EqualLogic Array should be IP reachable from the Active System Manager server.

The following figure displays an example of how to edit to the /etc/hosts file and how it should be saved: Save file > press **Esc** > type :wq! > press **Enter**.

```
Figure 29. Editing and Saving the /etc/hosts File
```



Note:

If there are multiple storage groups, there should be an entry for each of the Storage Group in the Discovery Configuration Setup view. For adding a new element in an existing Active System 800 unit, click Add Element, select Dell EqualLogicStorageArray, and provide required details to initiate discovery.



5. For Dell Force10 Switch (ToR) discovery, provide the following element properties and discovery attributes:

Figure 31. Dell Force10 Element Properties and Discovery Attributes

Discovery Configuration Setup

Use this UI to discover one or more Dell Active Systems with associated servers, storage arrays and switches (TOR). Before you proceed, it is recomme

ctive System Manager Configuration		Element Properties	
elect elements to view/update details	s eArray t	Specify element details. Assettag and Manufacturer: Dell	I IP Address are mandatory.
 AS800_1_2 Dell Chassis Dell EqualLogicStorageArray Dell Force10-S4810 Dell Force10-S4810 VCenter_1 vCenter1 VMware Host 		Model Force10-S4810 Assettag: Username: Password: IP Address: Discovery Attributes	
		Name	Value
		Role	Тор
		SupportedVLANIDs	
		Terminal Server IP Address	
		Terminal Server password	*******
		Terminal Server Port	
		Terminal Server Username	
- Assettag—Required. Unique key or name for Dell Force10 Switch which is used to import or identify the Force10 Switch in Active System Manager. For example, Assettag Dell_Force10-S4810_1 (a unique name) can be used to track the Force10 Switch in Active System Manager
- Username–Username to manage the Force10 switch.
- **Password**-Password to manage the Force10 switch.
- IP Address—Required. Management IP address for the Force10 switch. This should be IP reachable from the Active System Manager server.
 - Role-(Optional) Top / Bottom.
 - SupportedVLANIDs—VLAN IDs that could be provisioned on the Top-Of-Rack (ToR) switch. Sample input format (2..1024); the switch supports a VLAN range from 2 to 1,024.
 - **Terminal Server IP Address**—Optional. Required if switch to managed using the Terminal Server port.

 - Terminal Server Username—Optional. Terminal Server username (if configured)
 - Terminal Server Password–Optional. Terminal Server password (if configured)

3.2.1.3 Adding vCenter System Properties

To add vCenter system properties, perform the following steps:

- 1. On the Active System Manager > System > vCenter configuration, click Add vCenter.
- 2. For VMware vCenter discovery, provide the following system properties:

Figure 32. Adding vCenter System Properties

ASM GaleForce Active System Configuration		System prop	perties
Select elements to view/update details		Name is ma	ndatory and should be unique.
System	Add System Add vCenter Add vCenter Add Element Remove	Name: Username: Password:	vCenter.2

- **Name**—Unique key or name for VMware vCenter which is used to import or identify vCenter in the Active System Manager.
- Username-Username to access and manage the vCenter. This user must have full administrator rights to the vCenter. If the vCenter Server is part of a Windows Domain, then enter the username as username@domain.
- Password-Password to access and manage the vCenter.
- IP Address-IP address for the vCenter application. This must be IP reachable from the Active System Manager server.

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3.2.1.4Starting the Discovery Process

To start the Discovery process, perform the following steps:

- 1. Connect to the Active System Manager Client using user credentials with Administrator privileges.
- 2. On the menu bar, click **Tools** >**Discovery** >**Start**, which initiates the discovery process for components that were set up during the discovery configuration setup.



Note:

• You can view the discovery progress indication at the task bar shown in the bottom of the client.



- If discovery progress is initiated again when a discovery process is already in progress, the Active System Manager user is prompted with a message, indicating the same.
- After completing the Active System 800 components discovery, update the following information manually in the Active System Manager for all blade servers. These parameters will be used for configuring the ESXi Server with appropriate IP Address, hostname, iSCSI IP Address etc.

This information can be updated by using the multi-editor feature or by opening individual server instances. You can launch the multi-editor by selecting multiple server instances and then clicking **Open with Multi-Editor**.

Figure 34. Open with Multi-Editor

📜 Reso	urce Instances							
(No Filter	ing) 🔺 🗄		Open					
🔺 🗁 D	ell (6)		Open wit	h Multi-Editor				
4 ն	BladeServer		Open wit	h CSV-Editor				
	🔲 1DYL3V:		Onen Rec					
	📕 4DRBQV		openites	ource type				
	🛃 6ZPBQV		New					
	21MDT	0	New Sess	ion				
	36VBQV	Ŭ						
	FDRBQV	8	Save as					
	GDRBQ		Advance	d Clone				
	GZPBQ	~	Delete					
		<u> </u>	Delete					
	Chassis (1)		Show Res	ource Relation	ıs			
	Compellent							
	EqualLogic-	Ŧ	Expand A	.11				
	Force10-S48		Collapse	All				
🕞 1 D	VI2V1 52							
	Name	Mar	ufacturer	Model 🔺	Asset Tag	Version	Role	Shared
1	serveroc.com	Dell		BladeServer	1DYL3V1	1	Manageipment	
2	21MDTV1	Dell		BladeServer	21MDTV1	1	Manageipment	
3	serveroc.com	Dell		BladeServer	36VBQV1	1	Manageipment	
4	localhost	Dell		BladeServer	4DRBQV1	1	Manageipment	
5	serveroc.com	Dell		BladeServer	6ZPBQV1	1	Manage inment	
7	serveroc.com	Dell		BladeServer	GDRBQV1	1	Manageipment	
8	serveroc.com	Dell		BladeServer	GZPBQV1	1	Manageipment	
9	serveroc.com	Dell		BladeServer	H0MDTV1	1	Manageipment	

The following parameters must be updated:

- ISCSIvNICIPAddresses—Space-separated list of IP addresses to be assigned to iSCSI virtual network interface cards (vNICs). For example, for updating information for "vmnic6 vmnic7" using the Update Port Group with iSCSI VLAN operation, the value can be in the 192.168.120.XX 192.168.120.YY format. as an example and will depend on the environment subnet range. The IP Addresses needs to be separated by a space ""
- iSCSIChapUsername—iSCSI Chap username used to access volume of EqualLogic Storage Array
- iSCSIChapSecret-iSCSI Chap secret corresponding to iSCSI Chap username.
- ServerHostname-Hostname to be assigned to the ESXi server.
- ServerDomainName-Domain name to be assigned to the ESXi server.
- ServerNameServer—Name server to be assigned to the ESXi server. If there are multiple name servers, a comma "," separated valued should be provided.

- ServerGateway–Gateway for the ESX server.
- ServerNetmask-Netmask for the management NIC of ESX server.
- ServerIPAddress—IP address that must be assigned to management NIC of the ESX server. If the hypervisor must retrieve an IP address from the DHCP server, leave this parameter blank.
- ServerPassword-Server root password to be assigned during unattended installation.
- vMotionIPAddress—TBD
- vMotionSubnet (netmask)—TBD

3.3 Software Repositories Available in the Active System Manager Virtual Appliance

The following repositories are pre-packaged and available in the Active System Manager virtual appliance:

- Applicable for Dell Servers—"PXE bootable images", where the repository has the ESXi PXE bootable installer image already configured and "ISO bootable images" where the ESXi ISO bootable installer image is available.
- Applicable for Dell EqualLogic Storage—EqualLogic Storage Firmware.
- The repository has EqualLogic firmware images configured (EqualLogic Storage Resource Pools)
- ToR Switch Configurations and Images—The repository has switch images and a base configuration configured.
- VMware ESXi images

Figure 35. Software Repositories



3.3.1 Updating Repository Elements for Firmware Images on EqualLogic Firmware Repo

The EqualLogic StorageArray repository contains firmware images to be used for updating the firmware on EqualLogic Storage Arrays.

To update these repository elements, perform the following steps:

1. Open the Software Repositories view in the setup perspective by clicking Setup > Software Repositories on the client.

	😤 Software Repositories			
	(No Filtering)		🚔 🗄 🔻 🗙	
DashBoard	Name	Path		
Setup	 EqualLogic Firmware EqualLogic Resource EqualLogic Resource 	() ()	New Element Repositories	
Inventory	 ▷ ▷ PXE Bootable Image ▷ ▷ ToR Switch Configur ▷ ▷ VMware Baseline Image 	Ē	Expand All Collapse All	
			Import Export	
			Refresh	

Figure 36. Software Repositories View

2. Right-click the view and select Repositories.

The Custom Repository–Select Repository Type dialog box displays.

Figure 37. Selecting Repository Type to Update

() Custom Repo	sitory
Select Repo	sitory Type y type to create a new repository or select existing repository to update.
File Server	
New	File Transfer Protocol 🔹
Existing	
Software Cor	figuration Management
New	Concurrent Versions System
Existing	•
Software Rep	ository
New	Equallogic Firmware Repository
Existing:	EqualLogic Storage Firmwares
0	< Back Next > Finish Cancel

- 3. Click the **Software Repository** > **Existing** radio buttons.
- 4. Using the drop-down menu, select the Repository Type and click Next.
- 5. Update the IP address, username, password, and base directory (location on the server where the firmware images are present, it can be the access information for the Active System Manager appliance as appliance is shipped with latest firmware images; otherwise, it can the access information for the remote server having the firmware images residing on it, the server should be SSH reachable from the Active System Manager appliance) for the image server, and click **Next**.

The **Custom Repository–Update EqualLogic Firmware Repository** dialog box displays; see Figure 19.

get the details of t	the repository.	stovisioning property		1.0
Description: Equa	allogic Firmware Repo			
Location Pattern				
File Format:				Variables
Folder Format:				Variables
Repository Prope	erties			
Name	Value		Required	^
Host	192.168.120.183			E
Port	22			
Username	delladmin			
Name	Value			Add Remove
Domain Associat	ion			
✓ Name	*	Element Type		
System		Image File		
•	Ţ	I		4
Note: Associated	domain will be used to sav	ve the repository eler	ments in 'Save A	ls' operation.

Figure 38. Update EqualLogic Firmware Repository

6. Click Finish.

Note:

If a new image is added to the appliance, skip this step.

Software Reposit	ory			
Repository Ele	ments Discovery and	Association	ociated	
elements.				1.0
				<⊳ ♦> 🕭 🔫
Name	Path	Туре	Base	Association
-				
				4
Select All Dese	elect All Discover	Associate Bulk As	sociate	Disassociate
0	< <u>B</u> ack <u>N</u>	ext > Eir	iish	Cancel

Figure 39. Repository Elements Discovery and Association

7. Click **Discover** to display all the firmware images available on the image server.

Figure 40. Repository Elements Discovery and Association

			l		ж
iscovery a lew elements	nd Association	o n ng associated e	lements.		1.0
	Path	Ту	= pe	🗇 💠 🕭 Base	-
68702045.tgz		Im	age File	\checkmark	[[
Set Type	۱.	Element			
Set as Bas	se	Image F	ile		
Delete co	nflicting	Configu	ration File		
	ew elements 68702045.tgz Set Type Set as Bas	Path 68702045.tgz Set Type Set as Base Debte are dicting	ew elements or view the existing associated e Path Ty 68702045.tgz Im Set Type Element Set as Base Image F Beldtage filting	scovery and Association ew elements or view the existing associated elements.	is covery and Association ew elements or view the existing associated elements. Path Type Base 68702045.tgz Image File Set Type Element Set as Base Image File Path Element

8. Click **Associate** to associate the image file with the required Resource Types (Dell EqualLogic Storage Array and EqualLogic Storage Pool).

Custom Repository		-		• X
Repository Elements Discovery a Click 'Discover' to discover new elements	nd Association or view the existing asso	ociated elements.		1.0
A			40	� ▲ 🗖
Name	Path	Туре	Base	Associatio
▼ kit_V5.2.1-R219658_2668702045.tgz		Image File	~	[[Dell ,Eq
		Image File		
•	1			۴
Select All Deselect A	II Discover As	sociate Bulk Assoc	iate Di	sassociate
	R	esource Instances		
0	< Back Nex	t > Finish		Cancel

Figure 41. Associating Resource Types

Figure 42. Associating Inventory

Associate Inventory	- O X
Associate Inventory Select resource types you wish to associate with the select file elements.	ed
(No Filtering)	い いっちょう いっちょう いっちょう いっちょう いっちょう しょうしょう しょう
 Dell Pell BladeServer Poll Chassis Dell EqualLogic-PS6110 Poll EqualLogicStoragePool Poll Force10-S4810 Poll IOA Dell Servers VMware 	Select All Deselect All
Э ОК (Cancel

9. Select resource types and click **OK**.

3.3.2 Updating Repository Elements for EqualLogic Storage Resource Pools

The EqualLogic Storage Resource Pool repository contains the information of the Storage Pools available on EqualLogic Storage Arrays.

To update these repository elements, perform the following steps:

1. Open the Software Repositories view in the setup perspective.



2. Right-click the view and select Repositories.

The Custom Repository-Select Repository Type dialog box displays.

Figure 43. Selecting Repository Type to Update

() Custom Repo	sitory	- 0 X
Select Repo	sitory Type y type to create a new repository or select existing repository to update.	1.0
File Server		
New	File Transfer Protocol	~
Existing		~
Software Cor	nfiguration Management	
New	Concurrent Versions System	~
Existing		~
Software Rep	ository	
New	Equallogic Resource Pool Repository	•
Existing:	EqualLogic Storage Resource Pools	•
		Caral
Ø	< Back Next > Finish	Cancel

- 3. Click the Software Repository > Existing radio buttons.
- 4. Using the drop-down menu, select EqualLogic Storage Resource Pools and click Next.

The Software Repository–Update EqualLogic Resource Pool Repository dialog box displays.

Figure 44. Update EqualLogic Resource Pool Repository

Software Reposit	ory			- • •	
Update EqualL Specify the EqualL get the details of t	ogic Resource Pool ogic Resource Pool Reposi he repository.	Repository itory provisioning prop	perties.Press Nex	t to 1.0	
Name: Equa	llogic Resource Pool				
Description: Equa	llogic Resource Pool				
Location Pattern					
File Format:				Variables	
Folder Format:				Variables	
Repository Prope	rties				
Name	Value		Required		
Host	192.168.120.82				
Username	grpadmin		\checkmark		
Password	****		\checkmark		
Name	Value			Add Remove	
Domain Associati	on				
✓ Name	*	Element Type			
System	System		Image File		
Note: Associated	domain will be used to say	ve the repository elem	ents in 'Save As'	operation.	
0	< <u>B</u> ack	<u>N</u> ext >	<u>F</u> inish	Cancel	

- 5. Update the Host, Username, and Password parameters. These parameters correspond to storage group Management IP address, group username, group password respectively, and click Next.
- 6. Click Finish.

Note:

If a new resource pool is added and information needs to be updated, skip this step.

7. Click **Discover** to display all the storage pools available on the Storage Array.

Figure 45. Discovering New Elements

) Software Rep	ository			
Click 'Discove	Elements Discover r' to discover new elem	ry and Associatio ents or view the existin	n g associated e	elements.
				<>> 🔶 📥 📑
Name	Path	Туре	Base	Association
•				•
Select	All Deselect All Dis	cover Associate	Bulk Assoc	ciate Disassociate

8. Right-click the selected Resource Pool and update the Type to Image File, and click Finish.

Figure 46. Repository Elements Discovery and Association

Custom Repository Repository Eleme Click 'Discover' to di	ents Discovery and scover new elements or	d Associa view the exis	tion ting associated ele	ements.		
Name	F	Path	Тур	e l	<⊳ ∢ Base	🕨 🔔 🛋 Associati
🔽 🗇 default	Set Type	•	Element	~	2	[[Dell ,Ec
	Set as Base		Image File			
	Delete confliction		Configuration	Eile .		

9. Click **Associate** to associate the storage pools with the required Resource Types (Dell EqualLogic-PS6110 and EqualLogic Storage Pool), and click **Finish**.

gure 47. As	ssociatin	g Reso	urce Ty	/pes		
Custom Repository			-	-		• X
Repository Elements Click 'Discover' to discov	s Discovery a ver new elements	nd Associa or view the ex	ation isting associate	d elements.		1.0
					<>	Þ 🛦 🛋
Name		Path		Туре	Base	Associati
📝 🗇 default				Image File		[[Dell ,Ec
•	III	1				4
Select	All Deselect Al	Discover	🗢 Associate	Bulk Associ	ate Dis	associate
			Resource	e Types e Instances		
(?)		< Back	Next >	Finish		Cancel

3.3.3 Updating Repository Elements for PXE Bootable Images

To update these repository elements, perform the following steps:

1. Open the **Software Repositories** view in the Setup perspective.

Figure 48. Software Repositories View

	😤 Software Repositories		
1 15	(No Filtering)		⇒i ti≣ ▼ X
DashBoard	Name	Path	
	 EqualLogic Firmware EqualLogic Resource 		New Element
Setup	b 🗁 ISO Bootable Images	ŋ	Repositories
	 PXE Bootable Image P ToR Switch Configure P WMware Baseline Image 	Ē	Expand All Collapse All
			Import Export
Operations			Refresh

2. Right-click the view and select Repositories.

The Custom Repository-Select Repository Type dialog box displays.

Figure 49. Selecting Repository Type to Update

🛞 Custom Repo	sitory
Select Repo	sitory Type y type to create a new repository or select existing repository to update.
○ File Server	
New	File Transfer Protocol *
Existing Existing Existing Existence Existence	
Software Cor	figuration Management
New	Concurrent Versions System 👻
Existing	· · · · · · · · · · · · · · · · · · ·
Software Rep	ository
New	Dell ASM Template v
Existing:	PXE Bootable Images
0	< Back Net > Einish Cancel

- 3. Click the **Software Repository** > **Existing** radio buttons.
- 4. Using the drop-down menu, select **PXE Bootable Images** and click **Next**.

The Update Trivial File Transfer Protocol for PXE Boot dialog box displays.

Figure 50. Update TFTP for PXE Boot

Name	PXE Bo	ootable Images			
Descri	iption: PXE Bo	ootable Images			
Loca	ation Pattern				
File	Format:				Variables
Fold	er Format:				Variables
Rep	ository Propert	es			
Na	me	Value		Required	*
	Host	192.168.122.101			E
	Port	69		¥	
	Communic	ssh		\checkmark	
					Remove
Don	nain Associatio	n			
~	Name	*	Element Type		
	System		Image File		
Note	e: Associated d	omain will be used to sav	e the repository elem	ents in 'Save As'	operation.

- 5. Update the Host attribute value with the IP address of the Active System Manager appliance.
- 6. The Username and Password are configured with default appliance username and password. These needs to be updated If the default username/password is updated.
- 7. Click Next to display the list of repository files.
- 8. Click Finish.

Note:

If a new resource pool is added and information needs to be updated, skip this step.

Figure 51.	Discovering New Elements
7	

Software Repository	Association	-	
Click 'Discover' to discover new elements or vi	ew the existing associa	ited elements.	1.0
		اي الحية الم	
Name	Path	Туре	E
configurationFiles		Element	V
🔲 🚸 Dell		Element	~
📃 💠 EqualLogicImage		Element	¥
		Image File	¥
esxi5.1_dell_192.168.120.113		Element	V
esxi5.1_dell_192.168.120.190		Element	¥
esxi5.1_dell_ISOBOOT		Element	~
esxi5.1_dell_ISOBOOT_192.168.120.190		Element	~
📃 💠 pxelinux.cfg		Element	¥
Select All Deselect All Discover	- Associate Bulk	Associate Disassoc	iate
	Nets	Einish Cours	-1
< Back		Canc	el

9. Click Discover to initiate the discovery of the repository files. This step is required only if a new image is added to the repository.

This will list the discovered element in the repository.

Figure 52. Li	st of Repo	sitory Files		
				<⊳ ♦ 📥 📑
Name	Path	Туре	Base	Association
🔲 🚸 configurationFiles		Element		
📃 🚸 Dell		Element	\checkmark	
📃 🚸 EqualLogicImage		Element	\checkmark	
■ <> esxi5.1_dell		Image File	\checkmark	[[Dell ,ASM],
📃 🚸 pxelinux.cfg		Element	\checkmark	

10. Right-click the selected discovered elements and update the Type to Image File, and click Finish.

Figure 53	Undating	Discovered	Flements ¹	Type	to Image	File
i igule JJ.	opuating	Discovereu	LICITICITIS	rype	to image	1 ILC

							sp 🐢 🛎 📑
Name		Path		1	Гуре	Base	Association
🔲 🚸 configuratio	onFiles			E	lement	\checkmark	
🔲 🚸 Dell				E	lement	\checkmark	
EqualLogic ^I	Se	t Type	Þ	E C	Element		Dell ,ASM],
🔲 💠 pxelinux.cf	Se	t as Base			Image File		
	De	elete conflicting			Configuratio	n File	

3.3.4 Updating Repository Elements for ISO Bootable Images

To update these repository elements, perform the following steps:

1. Open the Software Repositories view in the Setup perspective.





2. Right-click the view and select Repositories.

The Custom Repository-Select Repository Type dialog box displays.

Figure 55. Selecting Repository Type to Update

(Software Repo	ository 🖂 🗉 💻 🗙
Select Repos Select repositor update.	sitory Type y type to create a new repository or select existing repository to
File Server	
New	File Transfer Protocol 👻
Existing	
Software Cor	figuration Management
New	Concurrent Versions System 👻
Existing	
Software Rep	ository
New	Trivial File Transfer Protocol for PXE Boot
Existing:	ISO Bootable Images 🔹
0	< Back Next > Einish Cancel

- 3. Click the **Software Repository** > **Existing** radio buttons.
- 4. Using the drop-down menu, select ISO Bootable Images and click Next.

The Update Trivial File Transfer Protocol for ISO Boot dialog box displays.

Description: ISO Bootable Images Location Pattern File Format: Variables Folder Format: Variables Repository Properties Name Value Required Host 192.168.122.184 Value Required Communic ssh Additional Properties Name Value Add Remove Domain Association	lame: ISO Bo	ootable Images		
Location Pattern File Format: Variables Folder Format: Variables Repository Properties Name Value Required Host 192.168.122.184 Value Communic ssh Additional Properties Additional Properties Name Value Add Remove Domain Association	escription: ISO Bo	ootable Images		
File Format: Variables Folder Format: Variables Repository Properties Variables Name Value Host 192.168.122.184 Port 69 Communic ssh Communic ssh Value Additional Properties Name Value Additional Properties Domain Association	Location Pattern			
Folder Format: Variables Repository Properties Image: Comparison of the second	File Format:			Variables
Name Value Required Host 192.168.122.184 Image: Communic Port 69 Communic ssh Communic ssh Additional Properties Name Value Add Remove Domain Association	Folder Format: Repository Propert	ies		Variables
Host 192.168.122.184	Name	Value	R	equired
Port 69 Image: Communic ssh Image: Communic ssh Image: Communic I	Host	192.168.122.184		E
Communic ssh Additional Properties Name Value Add Remove Domain Association	Port	69	\checkmark	
Additional Properties Name Value Add Domain Association Add Remove	Communic	ssh		
Domain Association	Name	Value		Add
	Domain Associatio	on 🔺		
Name Element Type	✓ Name		Element Type	
Note: Associated domain will be used to save the repository elements in 'Save As' operation.	Note: Accepted d	lomain will be used to sav	e the repository elements	in 'Save As' operation.

Figure 56. Update TFTP for PXE Boot

- 5. Update the Host attribute value with the IP address of the Active System Manager appliance.
- 6. The Username and Password are configured with default appliance username and password. These needs to be updated if the default username/password is updated.
- 7. Click Next to display the list of repository files.
- 8. Click Finish.

Note:

If a new resource pool is added and information needs to be updated, skip this step.

9. Click **Discover** to initiate the discovery of the repository files. This step is required only if a new ISO image is added to the appliance.

This will list the discovered element in the repository.

Figure 57. List of Repository Files

Software Repository				
Repository Elements Dis	scovery and Asso	ciation		2
Click 'Discover' to discover ne	ew elements or view the	existing associated e	lements.	1.0
			-{>	♠ 🔺 🔫
Name	Path	Туре	Base	Associati
🔲 🗇 esxi5.1_dell_ISOBoot		Image File	\checkmark	[[Dell ,Bl
dell_ISOBoot		Image File	\checkmark	
4				
Select All Deselect A	All Discover A	sociate Bulk Assoc	iate Dis	associate

10. Right-click the selected discovered elements and update the Type to Image File, and click Finish.

Figure 58. Updating Discovered Elements Type to Image File

Repository Elements Dis Click 'Discover' to discover ne	scovery and Associa w elements or view the exi	t ion sting a	ssociated e	lements.	1.0
Name	Path	Ту	pe	kase	🕭 🚽
Solution State St		I	Fil-		II D-II
·	Set Type	•	Eleme	ent	
	Set as Base		Image	e File	
	Delete conflicting		Confi	guration Fil	e

Figure 59.	Repository	Properties
1 1941 0 271	Repository	i i oper cies

Description: ToR Switch Configurations and Images						
Loca	ation Pattern	-	-			
File F	Format:				Variables	
Fold	er Format:				Variables	
Repo	ository Properti	ies				
Na	me	Value		Required		
	Port	192.108.120.128				
	Communic	ssh				
Add	itional Properti	es				
Na	me	Value			Add Remove	
Dom	nain Associatio	n				
~	Name	*	Element Type			
	System		Image File			

- 11. Update the Host attribute with the IP address of the VM appliance.
- 12. Click Next to display the list of repository files.
- 13. Click Finish.

Note:

If a new resource pool is added and information needs to be updated, skip this step.

Software Repository			×
Repository Elements Discovery and	Association	-	2
Click 'Discover' to discover new elements or v	view the existing associated e	elements.	
	-		1.0
Name	Path	Туре	Base
FTOS-SE-8.3.12.1.bin	Dell/Force10	Image File	
S4810_bottom_switch_conf_final.cfg	configurationFiles/Dell/	Configuration	
S4810_top_switch_conf_final.cfg	configurationFiles/Dell/	Configuration	\checkmark
 III 			۱.
	- Assasista Dulla Assas	inte Dinessi	-
Select All Deselect All Discover	Associate Bulk Assoc	Disassocia	
			_
(?) < <u>B</u> ack	<u>N</u> ext > <u>F</u> inish	Cance	

Figure 60. Discovering New Elements

14. Click **Discover** to initiate the discovery of the repository files.

The list of discovered elements in the repository displays.

Figure 61. List of Repository Files

(Custom Repository			
	Repository Elements Discovery and Click 'Discover' to discover new elements or	d Association view the existing associated	elements.	1.0
	Name	Path	-{)⊳ Type	
	AS800_Bottom_Switch.config	configurationFiles/Dell/ configurationFiles/Dell/	Element Element	
	AS800_Top_Switch.config AS800_Top_Switch_GPOC.config	configurationFiles/Dell/ configurationFiles/Dell/	Element	

15. Right-click the selected discovered elements, update the Type to **Configuration File**, and click **Finish**.

Delete conflicting

ш

< Back

Select All Deselect All Discover

Software Repository **Repository Elements Discovery and Association** Click 'Discover' to discover new elements or view the existing associated elements. 1.0 🖘 🛧 🚽 Name Path Туре Base ETOS-SE-8.3.12.1.bin Dell/Force10 Image File \checkmark % \$4810_bottom_switch_conf_final.cfg configurationFiles/Dell/... Configuration ... ~ S4810_top_switch_conf_final_cfa configurationFiles/Dell/ Configuration \checkmark Set Type ₽ Element Set as Base Image File

 $\underline{N}ext >$

Figure 62. Updating Discovered Elements Type to Configuration File

16. Click **Associate** to associate the selected element with the **Dell Force10** resource type and click **Finish**.

Configuration File

Bulk Associate...

<u>F</u>inish

Þ

Disassociate...

Cancel

Figure 63. Associating Resource Types

•

0

()) Software Repository		
Repository Elements Discovery and	Association	
Click 'Discover' to discover new elements or v	iew the existing associated	elements.
		1.0
Name	Path	Type Base
□ <\> FTOS-SE-8.3.12.1.bin	Dell/Force10	Image File 🗹
S4810_bottom_switch_conf_final.cfg	configurationFiles/Dell/	Configuration 🗹
S4810_top_switch_conf_final.cfg	configurationFiles/Dell/	Configuration 🗹
٠ III		•
	- Anne inter	ista Disconstata
Select All Deselect All Discover		Disassociate
	Resource Types	
	Resource Instances	
(2) K Back	Next > Finish	Cancel
		Cancel

3.3.5 Updating Repository Elements for VMware Baseline Images

This repository contains VMware baseline images for creating VM clones.

To update the repository elements for VMware baseline images, perform the following steps:

1. Open the **Software Repositories** view in the Setup perspective.

	😤 Software Repositories			
<u> </u>	(No Filtering)		🐳 🗄 🔻 🗙	
DashBoard	Name	Path		
	 EqualLogic Firmware EqualLogic Resource 		New Element	
Setup	b > ISO Bootable Images	Ø	Repositories	
	 De PAE Bootable Image De ToR Switch Configur 	Đ	Expand All	
Inventory	VMware Baseline Im-		Collapse All	
			Import	
Operations			Export	
			Refresh	

Figure 64. Software Repositories View

2. Right-click the view and select **Repositories**.

The Custom Repository-Select Repository Type dialog box displays.

Figure 65. Selecting VMware Baseline Images Repository

Software Rep	ository	
New	Dell ASM Template	
Existing:	VMware Baseline Images 🗸 🗸 🗸	

- 3. Click the Software Repository > Existing radio buttons.
- Using the drop-down menu, select VMware Baseline Images, and click Next. The Repository Properties dialog box displays.

Figure 66. Repository Properties

details of the rep	Vare vCenter Inventory pro pository. Iware Baseline Images	visioning properties.Pre	ess Next to get th	e <u>1.0</u>
Description: VM	lware Baseline Images			
Location Patter	n			
File Format:				Variables
Folder Format:				Variables
Repository Prop	perties			
Name	Value		Required	
Host	192.168.120.125		\checkmark	
Username	administrator		\checkmark	
Password	****		\checkmark	
Name	Value			Add Remove
Domain Associa	ation			
✓ Name	*	Element Type		
System		Image File		
Note: Associate	d domain will be used to s	ave the repository elem	ents in 'Save As'	operation.

- 5. Update the VMware vCenter host (IP address), username, and password.
- 6. Click **Next** to display the list of repository files.
- 7. Click **Discover** to initiate the discovery of the repository files.

The list of VMs managed by the vCenter displays.

Figure 67. List of Repository Files

Software Reposite	ory			- • •			
Repository Elements Discovery and Association 💦							
Click 'Discover' to	Click 'Discover' to discover new elements or view the existing associated elements.						
				- 💠 🛧 🚽			
Name	Path	Туре	Base	Association			
Active-S	Active-System-Manage	Element	\checkmark				
C TestVM	TestVM	Image File					
VCenter	vCenter-Harrier	Element	~				
•		1		•			
Select All	Deselect All Discover		ulk Assoc	iate) Disassociate			
0	< <u>B</u> ack	Next >	<u>F</u> inish	Cancel			

8. Right-click the selected discovered element, select **Set Type** > **Image File**, and click **Finish**.

Figure 68. Updating Discovered Elements Type to Image File

Custom Repository				-		
Repository Elements Discovery and Association Click 'Discover' to discover new elements or view the existing associated elements.						
Name	Path	Тур	De		≼⊳ Base	💠 🛦 🔜
🔲 🚸 New Virtual Machine	New Virtual Machine	Ele	ment		~	
📃 🚸 New Virtual Machine	New Virtual Machine	Fle	ment		\checkmark	
•vCenter-Harrier	Set Type	•		Elemen	t	
	Set as Base Delete conflicting			Image l Config	File uration Fi	le

9. Click Associate to associate the selected element with the VMware VM resource type and click Finish.



					🗇 💠 🔺 📑
Name	Path	Туре	Base	Association	Siz 🔺
📝 🚸 New Virtual Machine	New Virtual Machine	Element			
🔽 🚸 New Virtual Machine	New Virtual Machine	Image File	\checkmark		
QA_Gold_VM	QA_Gold_VM	Element	\checkmark		
Cold VM 1001 244	rsharma OA Gold VM	Flement			
	Select All Deselect All	Discover	Associate Resource 1	Bulk Associate)	Disassociate
		_	Resource I	nstances	

4 Physical Templates and Orchestration

4.1 Multiple Blade Server for Cluster Provisioning

Template 'Cluster - VMware ESXi 5.1 Hypervisor deployment ISO boot' and 'Cluster - VMware ESXi 5.1 Hypervisor deployment PXE boot' can be used for installing ESXi 5.1 on an SD card/hard disk, respectively, using PXE / ISO Boot. You can specify one or more blade servers using this template for creating a cluster.

Figure 70. Multiple Blade Server for Cluster Provisioning



When this template is scheduled, this template performs the following sequence of operations:

- 1. Reserves single or multiple VLANs for VM traffic using a VLAN component. If the VLAN reserved in the session is not already configured on the ToR switches, then the VLANs are created and tagged to appropriate port-channels.
- 2. IOA Configuration
 - a. The VLAN IDs provided for Network1, Network2, Network4, and VLAN component in the physical template are created on the IOA server facing interfaces as Tagged VLANs.
 - b. The Native VLAN ID provided for Network1 is added as Un-Tagged VLAN on the server facing interface.
 - c. The Native VLAN ID is mandatory for PXE boot scenario.
- 3. NIC Partitioning
 - a. NIC Partitioning is enabled on the CAN.
 - b. NIC Partitioning is only supported Broadcom CNA.
- 4. Set NIC Attributes
 - a. Configure the Min and Max Bandwidth
 - b. Enable / Disable iSCSI Offload on the NIC Partitions
 - c. Enable LAN Mode
 - d. Enable the Legacy boot protocol for PXE Boot scenario

- 5. Create the ISO files for each server dynamically based on the Server IP Address, Hostname, Name server values provided in the database.
- 6. Mount the ISO using iDRAC Virtual Media on all the Servers and initiate the installation process.
- 7. Configure the vSwitch configuration
 - a. Create the vSwitch and port-groups based on Active System 800 deployment specification
 - b. Tag the port-groups with appropriate VLANs as specified in the template
 - c. Create iSCSI Port-groups and install / configure the MEM VIBs
- 8. Create a volume of the EqualLogic Storage Array
 - a. The new volume is created per physical session based on the size specified in the Orchestration input.
 - b. The authentication of the new volume is configured based on the Chap username and secret key specified in the inventory database of the servers.
- 9. Create vCenter Cluster / Datacenter (if not already exists) on the specified vCenter. The cluster is created with default settings (DRS On, HA On, EVC Disabled).

Note: The cluster name passed as an argument must not be the Management cluster.

- 10. Add hosts to the vCenter cluster.
- 11. The datastore created in the orchestration is used for provisioning the VM in the logical workload templates. Provides access to Gold volume and using Gold volume, creates base VMs.
- 12. Installs EqualLogic MEM modules. The MEM package is transferred to the volume created in the above step to enable the installation.
- 13. Registers base VMs to the vCenter for logical template provisioning.

Note:

You should update the template for necessary inputs before scheduling this template for cluster provisioning. For details, see the

Active System Manager Solution Guide-Active System 800 (AS800)

4.5 Updating Physical Templates section.

4.2 Single Blade Server for Standalone ESX Host Provisioning

Template 'Standalone-VMware ESXi 5.1 Hypervisor deployment with SD Card with vSwitch' and 'Standalone - VMware ESXi 5.1 Hypervisor deployment with HDD with vSwitch' can be used for installing ESXi 5.1 on an SD card/hard disk, respectively, using PXE / ISO Boot. User could specify one or more blade servers for standalone ESXi host provisioning.





When this template is scheduled, this template performs the following sequence of operations:

- 1. Reserves single or multiple VLANs for VM traffic using a VLAN component. If the VLAN reserved in the session is not already configured on the ToR switches then the VLAN are created and tagged to appropriate port-channels.
- 2. IOA Configuration
 - a. The VLAN IDs provided for Network1, Network2, Network4 and VLAN component in the physical template are created on the IOA server facing interfaces as Tagged VLANs.
 - b. The Native VLAN ID provided for Network1 is added as Un-Tagged VLAN on the server facing interface.
 - c. The Native VLAN ID is mandatory for PXE boot scenario.
- 3. NIC Partitioning
 - a. NIC Partitioning is enabled on the CAN.
 - b. NIC Partitioning is only supported Broadcom CNA.
- 4. Set NIC Attributes
 - a. Configure the Min and Max Bandwidth
 - b. Enable / Disable iSCSI Offload on the NIC Partitions
 - c. Enable LAN Mode
 - d. Enable the Legacy boot protocol for PXE Boot scenario
- 5. Create the ISO files for each server dynamically based on the Server IP Address, Hostname, Name server values provided in the database.
- 6. Mount the ISO using iDRAC Virtual Media on all the Servers and initiate the installation process.

- 7. Configure the vSwitch configuration
 - a. Create the vSwitch and port-groups based on Active System 800 deployment specification
 - b. Tag the port-groups with appropriate VLANs as specified in the template
 - c. Create iSCSI Port-groups and install / configure the MEM VIBs
- 8. Create a volume of the EqualLogic Storage Array
 - a. The new volume is created per physical session based on the size specified in the Orchestration input.
 - b. The authentication of the new volume is configured based on the Chap username and secret key specified in the inventory database of the servers.
- 9. Add hosts to the vCenter at datacenter level.
- 10. The datastore created in the orchestration is used for provisioning the VM in the logical workload templates. Provides access to Gold volume and using Gold volume, creates base VMs.
- 11. Installs EqualLogic MEM modules. The MEM package is transferred to the volume created in the above step to enable the installation.
- 12. Registers base VMs to the vCenter for logical template provisioning.

4.3 Associated Orchestrations with Cluster and Standalone Host Templates

Each physical template has three orchestrations associated with it:

Figure 72. Orchestrations



 On-demand—VMFS Datastore Provision TBD Per Jerry Ness, need more detail around the missing task that a VMFS datastore LUN for the GOLD images must be initially created on the storage before the logical templates can be run.

This orchestration can be executed on-demand when the session is in a Running state.

2. Setup-Configures the ESXi Servers using PXE Boot

This orchestration executes when template provisioning starts and the session is in the Setting Up state.

3. Teardown-Cleanup-Orchestration

This orchestration executes when template provisioning start and session is in Setting-up state.

4.4 Additional Storage for Cluster or Host

For additional VMFS storage or datastore need on a cluster or standalone ESXi host reserved through the Active System Manager, you can execute on-demand orchestration from a Running session.

For executing the on demand orchestration, open the session by double-clicking it. On the session, right click and select the VMFS Datastore Provisioning orchestration for execution.



When executed, orchestration performs the following sequence of operations:-

- Creates a new volume on EqualLogic storage.
- Allows access to specific cluster or standalone ESXi hosts, as applicable.
- Creates a VMFS datastore on a cluster or standalone ESXI hosts, as applicable.

4.5 Updating Physical Templates

To update cluster and standalone templates that require specific data before scheduling a template for cluster provisioning, perform the following steps:

1. Update the template for a blade server. (Updates the blade server count for cluster provisioning.)

Figure 74. Updating Template for Blade Server

🔁 Dell	LAN and ISCSI Traffic —	VLAN Auto	—— iSCSI Traffic —	Dell EquallogicStoragePool_1
Template Link				
Properties				
	Property		Value	
Resource	News		Dell Creve Device	
Provisioning	Name		Dell ServerDeploy	ment
Inventory	Manufacturer		Dell	
Configuration films	Model		ServerDeploymer	nt
Configuration Files	Description			
Image Files	Virtual Object Count		1	

- 2. Save the template by Ctrl+S or by selecting the save icon on the thick client after making the changes.
- 3. Update the template for VLANs.

Figure 75. Updating Template for VLANs	
--	--

Properties			
Resource	Name	Value	Scheduling Permissi
Provisioning	ISL		Hide
Inventory	VLANCount	⊽ 5	Hide
Configuration Files	VLANIO		Hide
Image Files			

- 4. Select the VLAN Component, click the Inventory tab, and update the VLANCount with the number of VLANs to be provisioned.
- 5. Update the VLAN ID range, as applicable, and update the VLANId parameter.

Figure 76. Updating VLAN ID Range and Parameter

TOVISIONING			· · ·
Inventory	VLANCount		Hide
inventory	VLANIA	(100, 104) 106	Hide
Configuration Films	VLANU	(100.104),100	Thue
Configuration Files			

- 6. Save the template.
- 7. Provide input to the orchestration using one of two methods.

Figure 77. Orchestration Input

Orchastration View					
	🖶 Add Step	🐴 Remove Step	🕂 Insert St	ep 률 Remove	📠 Add Script
Quanting	• • • • • • • • • •		Et.		Description
Operation			Execute	Abort On Error	Descriptio
🔺 🗁 Step 1:- Orchestration Input			~	\checkmark	
👳 [Dell Servers] Orchestration Input					Orchestrat

- a. Double-click the Configure ESXi Server using PXE Boot orchestration to open it.
- b. Double-click the Orchestration Input method to provide other inputs to orchestration.

Figure 78. Orchestration Input

irameters				Possible Values		
Vame	Value	Data Type	Unit	Primary Source:	Software Repositories	
	san://ISO Bootable Ima	string		Secondary Source:	ISO Bootable Images	
P StorageGroupIP	192.168.50.11	string			iso bootable integes	
ESXServerLicenseKey		string		🛛 🖒 🔲 🧁 İmage I	File	
• vCenterIPAddress	192.168.120.125	string				
vCenterClusterName	HarrierCluster	string				
VCenterDatacenter	Gale	string				
GoldDatastoreVolum	GoldVolume	string				
PatastoreVolumeSize	100g	string				
PodName	GalePod	string				
BootProtocol	static	string				
vCenterFolderName	AS800	string				
InstallationDiskType	SD	string				

Table 6 lists and defines the available Orchestration Input parameters.

Table 6. Orchestration Input Parameters

Parameter	Description
ImageName	Selects the ESXi image from the repository. The orchestration is already mapped with an existing ESXi image available on the appliance.
ESXServerLicenseKey	License key for the VMware ESXi hosts that will be provisioned by the orchestration.
vCenterIPAddress	vCenter IP Address as provided in the Discovery Setup configuration.
vCenterClusterName	vCenter cluster name that will be provisioned by the orchestration.
	Note: The cluster name passed as an argument must not be the Management cluster.

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Parameter	Description
vCenterDatacenter	vCenter data center to be used for provisioning.
GoldDatastoreVolumeName	Volume name consisting of baseline VM images that will be used for cloning new VMs.
DatastoreVolumeSize	Size in GB of the datastore to be provisioned on servers or a cluster.
StoragePoolName	Name of the pool on which the volume should be created for provisioning the datastore. This input should be provided from the EqualLogic Resource Pool repository.
BootProtocol	DHCP/Static. Default is static. If the IP address of the server is expected to come from DHCP server.
vCenterFolderName	(optional) The vCenter folder where the ESXi hosts needs to be provisioned during the orchestration
InstallationDisk	SD (the default) HDD . If the installation must be performed on the server HDD, then value needs to be updated.
	Note: The BIOS boot order needs to be updated manually

Figure 79. vCenter_1 System Properties



5 Workload Provisioning Using Logical Templates

5.1 Two VMs with a VLAN

The *Two virtual machine with a VLAN* Logical template can be used to create VM workloads by scheduling a logical template over existing physical resources sessions, to consume the compute and storage resources of specific physical components.

Figure 80.	Two VMs Connected to a VLAN
⊱ Logical Template W	ith Two VMs Connected to a VLAN 🛛
	Sample VM workload template having two VMs and VLAN component - Clones VM based on associated base image - Create Port-Groups corresponding to VLAN component on vSwitch
	RHEL_1 Traffic Link_2
Template Link	

When scheduled, this template performs the following sequence of operations:

- Clones and powers on two VMware VMs based on the Gold VM Image associated in the template.
- Creates port-groups corresponding to VLAN component on vSwitch, as can also be seen in the annotation in the template screenshot below.
- Once the VMs are provisioned the user can also launch custom applications as applicable using custom methods from Active System Manager- Windows client.
- For Application launch,
- Select a VM in a session
- Right click on the VM
- Select the Applications
- Select the Application to be launched



Figure 81. Applications > Microsoft RDC

5.2 Single Virtual Machine with VLAN

The Single virtual machine with a VLAN Logical template can be used to create VM workloads by scheduling logical template over existing physical resources session, to consume the compute and storage resources of specific physical components.

Figure 82. Single VM Connected to a VLAN

Sample VM w - Clones VM b - Create Port	orkload template hav ased on associated b -Groups correspondin	ing two VMs and ase image ig to VLAN compo	VLAN componer nent on vSwitcl
R RHI	Traffic Lin	ık_1	IN Auto

When scheduled, this template performs the following sequence of operations:-

- Clones and powers on a single VMware VMs based on the Gold VM image associated in the template.
- Creates port-groups corresponding to a VLAN component on the vSwitch (see Figure 55).
- Once the VMs are provisioned, you can also launch custom applications using custom methods from the Active System Manager Windows client.

5.3 Updating a Baseline VM Image on Logical Templates

To update the baseline VM image associated with the VM object in the template, perform the following steps:

1. Select the VM object in the template and click the Image Files tab.



	Sample VM workloa - Clones VM based - Create Port-Grou	d template havin on associated ba ps corresponding	ig two VMs and VL se image to VLAN compone	AN component		
	VirtualMachine_1	Link_1 -	VLAV) Auto		
Template Link						
Properties						
Resource	Name	Path	Repository	Version	Tag	Add
Provisioning	🗟 New Virtual Machine	New Virtual M	VMware Baseli			Remove
Inventory						llo
Configuration Files						- Sp
Image Files						Down

2. Select the already associated image file and click **Remove** to remove the existing association.
Figure 84. Remove the Association

	A	VirtualMachine_1	Link_1	VLAN Aut) :0	
Template Link						
Properties						
Resource	Name	Path	Repository	Version	Tag	Add
Provisioning	😭 TestVM	TestVM	VMware Baseli			Remove
Inventory						
Configuration Files						Up
Image Files						Down

3. Click Add and select the gold VM image to be associated with the VM object.

- - -Elements Select Image Files (1) Resource 'VirtualMachine_1' does not have any Image Files associated inventory, check 'Show All Image Files' to list all the files 1.0 Filter1 다. 같은 18: Select All Name Path Repositor 🔺 📝 🗁 VMware Baseline Deselect All 🔽 😭 TestVM TestVM VMware E • Show All Image Files 0 ОК Cancel

Figure 85. Select Gold VM Image File

6 Operation Center View-Administrative Operations

6.1 Managing Blades

The following operations are provided on the Active System Manager Server Operation Center view to perform administrative tasks:

- Power On Server–Used to power on the blade server using server iDRAC.
- Power Off Server-User to power off the blade server using server iDRAC. The migration of the VMs running on the server will be taken care by the VMware vMotion capability.

🔄 Operation Center	Resource Information	
(No Filtering)	 Resource Details 	
Name	St	
🔺 🕋 System [Domain]	📄 Properties 👘 Sessions 🖶 Templates 📓	Monitoring
⊿ 🔜 GalePod [AS800]		
🔺 📰 CGJFQV1 [Chassis]	Name	Value
IOA [IO Module Overview]	BIOSVersion	1.4.9
Switch-1 [IOA]	CMCIPAddress	192.168.120.49
Switch-2 [IOA]	CPU	2
Servers [Server Overview]	DNSName	idrac-GDRBQV1
a 📄 1 [Slot Number]	DRACIPAddress	192.168.120.106
server7.gale.gpoc.com [Blade Server]	Health	OK
b 13 [Slot Number]	HostName	server7.gale.gpoc.com
b 2 [Slot Number]	Memory	32768
b] 3 [Slot Number]	Model	DowerEdge M620
b 4 [Slot Number]		
b 6 [Slot Number]	 Supported Operations 	
b [Slot Number]	The supported operations	
b 📄 7d [Slot Number]	Den art - Denver Off Server	
b 👘 Dell_Storage [DellEqualLogic]	Power Off Server Power Off Server	
192.168.120.90 [Force10Switch]	Power On Server Power On Server	
192.168.120.91 [Force10Switch]		

Figure 86. Supported Operations

6.2 Managing vCenter Objects

This section describes the following VMware vCenter managed objects:

- 6.2.1 Clusters and Hosts
- 6.2.2 VMware vSwitches
- 6.2.3 VMware Datastores

Specifically, this section describes how these managed objects can be directed through Active System Manager—Operation Center view. The vCenter discovery can be initiated using the Active System Manager Discovery facility, which populates the Operation Center view of the Active System Manager.

Figure 87. Operation Center View

Name	Status	:
⊿ 🚰 System [Domain]		ŀ
A S800_1 [AS800]		
a 🔚 CGJFQV1 [Chassis]		1
IOA [IO Module Overview]		F
Servers [Server Overview]		
I [Slot Number]		Ľ
b 📄 13 [Slot Number]		
b 📄 2 [Slot Number]		i
b 📄 3 [Slot Number]		i.
b 📄 4 [Slot Number]		1
اه 📄 б [Slot Number]		1
> 📄 7b [Slot Number]		:
> D 7d [Slot Number]		¢
b (7) PS6110Storage [DellEqualLogic]		1
192.168.120.90 [Force10Switch]		:
192.168.120.91 [Force10Switch]		
ManagedEquipment		1
MatrixSwitch		1
⊿ SvCenter_1 [vCenter]		1
I192.168.120.125 [vCenter]		
		11

To initiate the discovery of a VMware vCenter, various discovery elements and their corresponding attributes can be provided as shown below in the Discovery Configuration Setup wizard; steps for configuring the Discovery setup for a vCenter are detailed in the Discovery Configuration Setup section.

💖 Discovery Configuration 🛛						
Discovery Configuration Setup						
Use this UI to discover one or more Dell Active Systems with as	sociated chassis, serv	ers, IO modules,	storage arrays and switches (TOR)	. Before you begin, it is recommended to:		
Gather IP addresses and access credentials associated with the chassis / blade infrastructure elements, storage arrays and switch (TOR).						
Make sure all system elements have network connectivity, a	and the associated el	ement managen	nent interfaces are accessible from	the ASM GaleForce system.		
Refer the ASM GaleForce Solution Guide for more details.						
ASM GaleForce Active System Configuration	ASM GaleForce Active System Configuration Element Properties					
Select elements to view/update details		Specify element	details. Assettag and IP Address a	re mandatory.		
🔺 🗁 System	Add System	Manufacturer:	VMware			
▶		Model	Host			
A UCenter_1	dd vCenter	Assettan	vCenter-Harrier			
	Add Element					
		Username:	Administrator			
	Remove	Password:	•••••			
		IP Address:	192 . 168 . 122 . 208			
		Discovery Att	ributes			
		Name	A	Value		

6.2.1 Clusters and Hosts

Clusters and hosts, along with their attributes, are discovered and populated in the Active System Manager Operation Center view. This view enables methods to be executed on clusters and hosts for on demand provisioning, as required. Figure 88. Clusters and Hosts (Example 1)

🖷 Resource Center		Resource Information			
(No Filtering) 🗸 🗸		◆ Resource Details			
Name Status ^					
Name ManagedEquipment Manage	Status ^ Connect Powerec	Properties Sessions (Name assettag bastore version Supported Operatio Add DataStore To Cluster	Templates Monitoring Value Harrier datastore1 (1),InfraDS,NFSShare 1 Add datastore to an existing cluster. List datastore to an existing cluster.		
dvSwitchTest16 [DVSwitch] Sumit1 [DVSwitch]		List Cluster Datastore <u>List Cluster Datastore</u>	Move a host, present in dataceneter level, to the existing cluster.		





6.2.2 VMware vSwitches

Hosts vSwitches are also discovered and populated in the Operation Center view as part of the vCenter Discovery process.



6.2.3 VMware Datastores

Datastores are one of the most important components of the VMware-based virtualized infrastructure. The Active System Manager supports the discovery of datastores managed by the vCenter. The various attributes of a datastores are also discovered and populated in the Operation Center view.

Figure 91. VMware Datastores

⊿ 🐻 vCenter_1 [vCenter]		Capacity	409600 MB
I92.168.120.125 [vCenter]		Disk	Remote
b 💣 ddddd [DataCenter]		Free Space	327766.359
a 🧊 Gale [DataCenter]		MultipleHostAccess	0
💑 Cluster-56 [Cluster]		ProvisionedVMList	vCenter-Ha
B Harrier [Cluster]		Status	active
🔏 HarrierDevelopment_Dell [Cluster]		Type	NES
B HarrierDevelopment [Cluster]			
🔏 HarrierDevelopment-HDD [Cluster]		
器 HD-test [Cluster]			
🔏 HD-test1 [Cluster]			
dvSwitch [DVSwitch]			
dvSwitch2 [DVSwitch]			
dvSwitch3 [DVSwitch]		 Supported Operations 	
dvSwitchTest [DVSwitch]		T other of the second	
dvSwitchTest15 [DVSwitch]		Remove Datastore Remove datastore.	
dvSwitchTest16 [DVSwitch]		Nemove Datastore	
Sumit1 [DVSwitch]			
👂 datastore1 (1) [DataStore]	Active		
6 DellVolume-101 [DataStore]	Inactive		
DellVolume-102 [DataStore]	Inactive		
👂 InfraDS [DataStore]	Active		
iSCSIBootVol-01 [DataStore]	Inactive		
🗐 LocalDatastore (1) [DataStore]	Inactive		

6.3 Managing EqualLogic Storage

Table 7 lists and defines the members provided in the Active System Manager EqualLogic Storage Operation Center view.

Operation	Description
PoolCreate	Creates a new Storage Pool on an EqualLogic Storage Array.
PoolAddMember	Adds a Storage Array to a given Storage Pool on an EqualLogic Storage Array.
PoolDelete	Deletes a Storage Pool present on an EqualLogic Storage Array.
PoolRename	Renames an existing Storage Pool present on an EqualLogic Storage Array.

Table 7. EqualLogic Group Members

🔄 Resource Center		Resource Information	
(No Filtering)		👷 Resource Details	
Name	Status		
 ▲ ☐ System [Domain] ▲ ☐ System [Domain] ▲ ☐ AS800_1 [AS800] ▷ ∰ AS800_1 [ASM] ▲ ⑦ EqualLogicGroup [DellEqualLogic] ▲ ⑦ Gale [Group] ④ abc [Pool] ☑ abc1 [Pool] 		 Supported Ope DcBsetDefaultVlan DcBsetState PoolCreate 	rations Set the default VLAN ID for the Data Center Bridging. Enable/Disable Data Center Bridging. Creates a Pool on Group.
 ▲ Image: default [Pool] GaleArray01-Test [Member] B GaleArray04-4 [Volume] D EllVolume [Volume] D EllVolume-101 [Volume] D EllVolume-102 [Volume] 	online offline online online 		

🔄 Resource Center		Resource Information		
(No Filtering)		 Resource Details 		
Name	Status			
 Gale Group /ul>	online offline online online	 Supported Op PoolAddMember PoolDelete PoolRename 	Add members(storage) to a pool. This operation deletes a Pool. This operation Renames a Pool.	

6.4 Managing Volume

Table 8 lists and defines the operations provided in the Active System Manager EqualLogic Storage Operation Center view. The figure displays an example of EqualLogic group members.

Table 8. EqualLogic Group Members

Operation	Description
VolumeOffline	Offlines a volume present on an EqualLogic Storage Array.
VolumeOnline	Onlines a volume present on an EqualLogic Storage Array.
VolumeResize	Resizes a volume present on an EqualLogic Storage Array

Figure 93. EqualLogic Group Members

🔄 Resource Center		Resource Information	
(No Filtering)	•	🔹 Resource Details	
Name Status		 Supported Operations 	
 LSS ASSOULT [ASSOU] ASM0001 [ASM] CE qualLogicGroup [DellEqualLogic] Celle Group] 		Image: Weight of the second secon	This Operation sets a Volume State Offline. This operations sets a Volume State Online Increase or decrease the size of a Volume.
GaleArray01-Test [Member] online Clone-4-4 [Volume] offline DellVolume [Volume] online DellVolume-101 [Volume] online			

6.5 Setting Up Storage

The following operations are provided on the Active System Manager EqualLogic Storage Operation Center view for performing administrative tasks:

- Storage group-level supported operations
- Storage member-level supported operations

Figure 94. Storage Group-Level Supported Operations



Table 9. Storage Group-Level Supported Operations

Operation	Description	Input Parameter
DCBSetDefaultVlan	Sets a default VLAN ID for Data Center Bridging (DCB) on an EqualLogic Storage Array	<i>vLanId</i> —Default vLanId for dcb
DCBSetState	Enables or disables DCB on an EqualLogic Storage Array.	<pre>dcbState {enable disable}</pre>
PoolCreate	Creates a new storage pool in the storage group.	<i>poolName</i> —Storage pool name

Figure 95. Storage Member-Level Supported Operations

Resource Center (No Filtering)	•	Resource Information Resource Details
Name System [Domain] System [Domain] System [Domain] System [Domain] System [Domain] System [As800] [AS800] System [Group] System [Gro	Status offline online	Properties Sessions Templates Monitoring Supported Operations ConfigureRAIDPolicy Configures RAID type to one of the following: raid5,raid6, raid10, UpgradeFirmware Upgrade/Downgrade a firmware version on a storage.

Operation	Description	Input Parameter
ConfigureRAIDPolicy	Configures the required redundant array of independent disks (RAID) level on an EqualLogic Storage Array.	<i>raidType</i> {raid6 raid10 raid50}
UpgradeFirmware	Upgrades the firmware image on an EqualLogic Storage Array.	<i>imageName</i> —Image from repository.
		delayInMinutesAfterRestart— Introduce wait once the firmware is installed and the member storage device is restarted, the RA connects the storage after this defined delay (in minutes) after the restart parameter.

Table 10. Storage Member-Level Supported Operations

7 Dashboard Reports

7.1 Resource Allocation by Sessions Report

This report provides resource allocation data for sessions which are in a Running state. This report displays CPU and memory allocations grouped by Active System Manager sessions, and can be used to view the CPU and memory allocation in a data center environment at that particular instant. The figure displays an example of a Resource Allocation by Sessions report.



Figure 96. Resource Allocation by Sessions Report

7.2 Resource Allocation by Hosts Report

This report provides resource allocation data for hosts on which some virtual resources are provisioned in running sessions. This report displays CPU and memory allocations grouped by hosts, and can be used to view a current usage of the CPU and memory allocation per host for a data center. The figure displays an example of a Resource Allocation by Hosts report.





7.3 Resource Allocation by Groups Report

This report provides resource allocation data for virtual resources that are utilized in sessions owned by members of a group (grouped by group name). This report also captures the current allocation by groups and works for CPU and memory allocation. The figure displays an example of a Resource Allocation by Groups report.





7.4 Top Ten Resource Allocation Report

This report includes three sub-options for different groupings:

- **By Host**—Lists top ten hosts which are currently in use and have allocated maximum CPU and memory attributes.
- **By User**—Displays the list of top 10 users who are currently consuming the maximum number of CPUs and memory.
- By Group-Similar to "By User", but consolidated at the group level.

The figure displays an example of a Top Ten Resource Allocation report.





7.5 Top Ten Resource Utilization Report

This report is similar to the Top Ten Resource Allocation report; however, this report provides utilization data as opposed to allocation. The required data is made available using a monitoring method that continuously keeps polling the device, VM, or cluster for current utilization data. The data is persisted in the database and the last polled data is provided to the user. This report can be grouped by the following:

- VMs
- Hosts
- Clusters
- Storage

The figure displays an example of a Top Ten Resource Utilization report.







7.6 VM Utilization by Session Report

This report provides the most recent data for CPU and memory utilized on any VM, grouped by sessions. This data is available in terms of percentage with respect to the allocated limits. The figure displays an example of a VM Utilization by Session Report.



Figure 101. VM Utilization by Session Report

7.7 Host Utilization (Consolidated) Report

This report displays information about how much capacity is being utilized on a host by all running VMs, with respect to the allocated capacity. This report is available for CPU and memory attributes. The figure displays an example of a Host Utilization (Consolidated) report.





7.8 Cluster Utilization (Consolidated) Report

This report is similar to the Host Utilization (Consolidated) report, except that it works for clusters. The figure displays an example of a Cluster Utilization (Consolidated) report.



Figure 103. Cluster Utilization (Consolidated) Report

7.9 Storage Utilization (Consolidated) Report

This report provides storage utilization as a percentage of allocated storage for clusters. The figure displays an example of a Storage Utilization (Consolidated) Report.

Figure 104. Storage Utilization (Consolidated) Report

7.10 CPU and Memory Utilization Showback Report

This report provides CPU and memory utilization of Hosts in percentage over a period of given time (e.g. Weekly, Daily, and Hourly). The figure displays an example of a CPU and Memory Utilization Showback report.

Figure 105. CPU & Memory Utilization Showback Report

You can view the data for a specific time interval (with a minimum time interval limit of ten minutes between two data points). To view the specific time interval data, select a point and drag the mouse to a desired data point; this will show the data for the specific time interval. You can rest the time interval to default by clicking **Reset Zoom**.

Figure 106. Reset Zoom

A Appendix A–Deployment Activities

A.1 Verifying Active System Manager Services

To verify that all Active System Manager services are up and running, perform the following steps:

- 1. Log in as the user who installed the services.
- 2. Run the following script to display the current status of all services, including the Oracle database status:

```
cd asm-galeforce/gf/sbin
./gfstatus.sh
```

Below is sample output:

```
Active System Manager Services Status
Installation
_____
Release Version: 7.0
Build Number: 21286
Database
_____
Vendor: Oracle (Ver: 11.2.0.1.0)
Host: asm-galeforce Port: 1521
Service name: DB11G
Status: Running
Active System Manager Service
_____
Host: asm-galeforce Port: 40500 Secure Port: 50500
Enterprise: Dell
Lab: DEMO
Status: Running
Domain Services
_____
1. Domain : System (Id: 1)
  Description:
  _____
  Session server
    Host: asm-galeforce Port: 40500 Secure Port: 50500
    Status: Running
```

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B Appendix B-Build of Materials

Table 11 displays a list of build of materials, grouped by Resource Adapters.

Table 11. Build of Material-Resource Adapters

Vendor	Model	Description
Dell	Chassis	Dell Chassis resource adapter using WSMAN and RACADM CLI used for discovery operations
Dell	Servers	Dell Servers resource adapter using WSMAN and RACADM CLI used for provisioning the servers
Dell	ΙΟΑ	Management of IO Aggregator
Dell	EqualLogicPS6110	Management of EqualLogic storage
Dell	EqualLogicStoragePool	Management of EqualLogic storage pool
Dell	Force10-S4810	Management of ToR switches
Template	VMwareLib	VMware Host Provisioning on Blades
VMware	Host	VMware vCenter Management
VMware	Virtual Machine	VMware Virtual Machine Instance Management

Table 12 displays a list of build of materials, grouped by templates.

Table 12. Build of Material-Templates

ID	Description	Workflows
1—Physical	Cluster - VMware ESXi 5.1 Hypervisor deployment ISO boot	Configure ESXi Servers using ISO Boot, Cleanup-Orchestration, and VMFS Datastore Provision.
2—Physical	Cluster - VMware ESXi 5.1 Hypervisor deployment PXE boot	Configure ESXi servers using PXE Boot, Cleanup-Orchestration, and VMFS Datastore Provision.
3-Physical	Standalone - VMware ESXi 5.1 Hypervisor deployment PXE boot	Configure ESXi servers using PXE Boot, Cleanup-Orchestration, and VMFS Datastore Provision.
4-Physical	Standalone - VMware ESXi 5.1 Hypervisor deployment ISO boot	Configure ESXi servers using ISO Boot, Cleanup-Orchestration, and VMFS Datastore Provision.
5—Logical	Logical template with one VM connected to a VLAN	Built-in orchestration.

ID	Description	Workflows
6—Logical	Logical template with two VMs connected to a VLAN	Built-in orchestration.

C Appendix C-Firmware and Software Base Lineup

Table 13 displays a list of firmware and software base lineups, grouped by Hypervisor blades.

Table 13.	Firmware and	Software Base	e Lineup–Hyperviso	r Blades
-----------	--------------	---------------	--------------------	----------

Resource	Active System Manager 7.0
BIOS	1.6.0
CPLD	1.0.5
iDRAC7 Enterprise	1.35.35
LCC (Life Cycle Controller) 2	1.1.1.18
Network Controller Broadcom FW	7.4.8
EqualLogic MEM	1.1.1
VMware ESXi	5.1(799733) A02
Microsoft Hyper-V	NA

Table 14 displays a list of firmware and software base lineups, grouped by management blades.

 Table 14.
 Firmware and Software Base Lineup

Resource	Active System Manager 7.0
BIOS	1.5.0
iDRAC7 Enterprise	1.35.35
LCC (Life Cycle Controller) 2	1.1.1.18
Network Controller Broadcom FW	7.2.20
EqualLogic MEM	1.1.1
VMware ESXi	5.1(799733) A02

Table 15 displays a list of firmware and software base lineups, grouped by chassis, storage, and switches.

Table 15.	Firmware and	Software I	Base Lineup—	Chassis,	Storage,	Switches

Resource	Active System Manager 7.0
СМС	4.31
PowerEdge M I/O Aggregator 8.3.17.2	8.3.17.3
Force10 S4810 (LAN)	8.3.12.1
Force10 S55 (OOB)	8.3.5.3
EqualLogic PS Arrays	6.0.2 (R305616)

Table 16 displays a list of firmware and software base lineups, grouped by management VMs and software.

Table 16.	Firmware	and Software	Base	Lineup
-----------	----------	--------------	------	--------

Resource	Active System Manager 7.0
СМС	NA
PowerEdge M I/O Aggregator 8.3.17.2	NA
Force10 S4810 (LAN)	8.3.12.1
Force10 S55 (OOB)	8.3.5.3
EqualLogic PS Arrays	6.0.2 (R305616)

Table 17 displays a list of firmware and software base lineups, grouped by management VMs and software.

Table 17. Firmware and Software Base Lineup–Management VMs and Software

Resource	Active System Manager 7.0
Windows Server 2008 R2 Standard	N/A
VMware vCenter Server	5.1.0 (799731)
Dell EqualLogic Virtual Storage Manager (VSM)	3.5 EPA

Resource	Active System Manager 7.0
Dell OpenManage Plug-in for vCenter	1.6.0.33
Dell SAN HQ	2.5 EPA
VMware vCloud Connector	1.5
Dell OpenManage Essentials	1.1
Dell OpenManage Repository Manager	1.4.113

D Appendix D-Adding New ESXi PXE Images

This appendix describes the following topics related to adding new ESXi images:

- Preparing the VMware ESXi 5.x Installation Media
- Modifying the ESXi boot.cfg Configuration File
- Configuring the HTTP ServerCreating a Kickstart Configuration File

D.1 Preparing the VMware ESXi 5.x Installation Media

To prepare the VMware ESXi 5.x installation media, perform the following steps:

- 1. Log in to <u>www.dell.com.</u>
- Open the support and driver page (<u>http://www.dell.com/support/drivers/us/en/04/ProductSelector/Select?rquery=fkey-e-Drivers_PS</u>)
- 3. Select Server > Storage & Networking.
- 4. Select PowerEdge.
- 5. Select PowerEdge M620.
- 6. Select VMware ESXi 5.1.

The image will be listed in the "Drivers for OS Deployment" section

Figure 107. Downloading the ISO Image

Refine your results: (42 files)					See More Filtering Options
Operating System:	Category:	Releas	e Date:		Importance:
VMWare ESXi 5.1	All	▼ All		•	All
xpand All Categories Collapse All Ca	tegories				
BIOS (1)					
✓ Chassis System Management (1)					
 Diagnostics (1) 					
Orivers for OS Deployment (1)					
File Title	Importance	Release Date	Version	Actio	ins
Enterprise : 4Q2012 - Q4 B	ock Optional	12/4/2012	7.2.0.7, A00		Download File
(OM 7.2), Version 2 Other Formats			Previous Versions	÷	Add to My Download List
Description					

7. On your Trivial File Transfer Protocol (TFTP) server, simply extract the contents of the installation ISO into a new directory using the following commands (as the **root** user):

```
# mkdir /tmp/dellISO
# mkdir /tftpboot/esxi5.1_dell
# mount -o loop VMware-VMvisor-Installer-5.1.0-799733.x86_64-
Dell_Customized_RecoveryCD_A00.iso tmp/dellISO
# cp -fr /tmp/dellISO/* /var/lib/tftpboot/esxi5.1_dell/
# chmod +w /tftpboot/esxi5.1_dell/*
```

D.2 Modifying the ESXi boot.cfg Configuration File

To confirm that the installation source is not in the root of the TFTP server, perform the following steps:

- 1. Remove all slashes (/) from the **boot.cfg** file so that relative paths are used (vi :%s#/##g).
- 2. Add a "prefix" directive to the **boot.cfg** file to specify the proper subdirectory, from the perspective of the TFTP root:

```
# cat boot.cfg
bootstate=0
title=Loading ESXi installer
kernel=tboot.b00
kernelopt=ks=http://xx.xx.xx/esxi5.1 dell/ks.cfg
modules=b.b00 --- useropts.gz --- k.b00 --- chardevs.b00 --- a.b00 --- user.b00
--- s.v00 --- misc cni.v00 --- net bnx2.v00 --- net bnx2.v01 --- net cnic.v00 -
-- net tq3.v00 --- scsi bnx.v00 --- scsi bnx.v01 --- net bna.v00 ---
scsi bfa.v00 --- ima_be2i.v00 --- scsi_be2.v00 --- net_igb.v00 --- scsi_mpt.v00
--- ima qla4.v00 --- net qlcn.v00 --- scsi qla.v00 --- ata pata.v00 ---
ata pata.v01 --- ata pata.v02 --- ata pata.v03 --- ata pata.v04 ---
ata_pata.v05 --- ata_pata.v06 --- ata_pata.v07 --- block_cc.v00 ---
ehci_ehc.v00 --- weaselin.t00 --- esx_dvfi.v00 --- xlibs.v00 --- ipmi_ipm.v00 -
-- ipmi ipm.v01 --- ipmi ipm.v02 --- misc dri.v00 --- net be2n.v00 ---
net e100.v00 --- net e100.v01 --- net enic.v00 --- net forc.v00 ---
net ixgb.v00 --- net nx n.v00 --- net qlge.v00 --- net r816.v00 ---
net r816.v01 --- net s2io.v00 --- net sky2.v00 --- net vmxn.v00 ---
ohci_usb.v00 --- sata_ahc.v00 --- sata_ata.v00 --- sata_sat.v00 ---
sata sat.v01 --- sata sat.v02 --- sata sat.v03 --- sata sat.v04 ---
```

```
scsi_aac.v00 --- scsi_adp.v00 --- scsi_aic.v00 --- scsi_fni.v00 ---
scsi_hps.v00 --- scsi_ips.v00 --- scsi_lpf.v00 --- scsi_meg.v00 ---
scsi_meg.v01 --- scsi_meg.v02 --- scsi_mpt.v01 --- scsi_mpt.v02 ---
scsi_rst.v00 --- uhci_usb.v00 --- tools.t00 --- scsi_qla.v01 --- dell_con.v00 -
-- xorg.v00 --- imgdb.tgz --- imgpayld.tgz
build=
updated=0
# chmod +w /var/lib/tftpboot/esxi5.1_dell/*
```

D.3 Adding a PXE Menu Entry

Create a file named "pxe.cfg" inside the image directory on the TFTP server. The content of the file displays as follows:

```
DEFAULT menu.c32

MENU TITLE ESXi-5.1 Boot Menu

NOHALT 1

PROMPT 0

TIMEOUT 80

LABEL install

KERNEL esxi5.1_dell/mboot.c32

APPEND -c /esxi5.1_dell/boot.cfg ks=http://KSFILEPATH +++

MENU LABEL ESXi-5.1 ^Installer

LABEL hddboot

LOCALBOOT 0x80

MENU LABEL ^Boot from local disk
```

Note:

The value of **KSFILEPATH** will be replaced dynamically by the Resource Adapter with the TFTP IP address value defined for the "PXE Repo" repository (assuming the TFTP server and the web server are running on the same machine). If dynamic replacement is not required, place the of the IP address (or hostname) value of the web server where the ks.cfg file is located.

D.4 Configuring the HTTP Server

HTTP services are enabled, by default, on the appliance.

D.5 Creating a Kickstart Configuration File

To create a kickstart configuration file, perform the following steps:

1. Create the image directory on the HTTP server base location:

```
# cd /var/www/html
# mkdir esxi5.1 dell
```

Note:

The name of the directory needs to be same as the image directory created on the TFTP server.

2. Create a file named "ks_template.cfg" inside the image directory on the HTTP server.

The content of the file will as shown below:

```
# Sample scripted installation file
# Accept the VMware End User License Agreement
vmaccepteula
# Set the root password for the DCUI and ESXi Shell
rootpw <PASSWORD>
clearpart --firstdisk=<FIRSTDISK> --overwritevmfs
# Install on the first local disk available on machine
install --firstdisk=<FIRSTDISK> --overwritevmfs
# Set the network to DHCP on the first network adapater, use the specified
hostname and do not create a portgroup for the VMs
<NETWORKCONTENT>
# reboots the host after the scripted installation is completed
reboot
%firstboot --interpreter=busybox
<FIRSTBOOTDATA>
```

Notes:

- The value of <PASSWORD> will be replaced with the password string defined in the Resource Adapter configuration file. The default value is **iforgot**.
- The value of <FIRSTDISK> will be replaced by local/usb, depending on the boot sequence defined in the deployment template.
- The value of <NETWORKCONTENT> will be replaced for the DHCP or static IP address configuration. The default configuration is **dhcp**. If the value of the IP address, subnet mask, and name-server is provided in the inventory, then the static IP address configuration will be applied on the server.
- The value of <FIRSTBOOT> will be replaced by the network configuration template file, available inside the Resource Adapter package. The configuration is based on the specifications for the Active System 800VMware Deployment document.
- The <FIRSTBOOT> configuration also includes:
 - o iSCSI initiator configuration
 - ESXi license Key. The value is added if the license key information is available in the resource adapter configuration file.
 - \circ Name of the Local datastore

D.6 Adding the New Image to the Software Repositories

If the new image is added by replacing the earlier image directory, then no change is required.

If the new image is added with a new name/directory then the "PXE Bootable Image" repository must be updated, as described in 3.3.3 Updating Repository Elements for PXE Bootable Images section. Active System Manager Solution Guide-Active System 800 (AS800)

E Appendix E–Adding New ESXi ISO Images

This appendix describes the following topics related to adding new ESXi images:

- Preparing the VMware ESXi 5.x Installation Media
- Modifying the ESXi boot.cfg Configuration File
- Configuring the HTTP ServerCreating a Kickstart Configuration File

E.1 Preparing the VMware ESXi 5.x Installation Media

To prepare the VMware ESXi 5.x installation media, perform the following steps:

- 3. Log in to <u>www.dell.com.</u>
- Open the support and driver page (<u>http://www.dell.com/support/drivers/us/en/04/ProductSelector/Select?rquery=fkey-e-Drivers_PS</u>)
- 5. Select Server > Storage & Networking.
- 6. Select PowerEdge.
- 7. Select PowerEdge M620.
- 8. Select VMware ESXi 5.1.

The image will be listed in the "Drivers for OS Deployment" section.

Figure 108. Drivers for OS Deployment

✓ Refine your results: (42 files)					See More Filtering Options
Operating System:	Category:	Releas	e Date:		Importance:
VMWare ESXi 5.1	All	▼ All		•	All
xpand All Categories Collapse All Cate	egories				
✓ BIOS (1)					
✓ Chassis System Management (1)					
 Diagnostics (1) 					
Orivers for OS Deployment (1)					
File Title	Importance	Release Date	Version	Actio	ins
Enterprise: 4Q2012 - Q4 Bloo	ck Optional	12/4/2012	7.2.0.7, A00	•	Download File
(OM 7.2), Version 2 Other Formats			Previous Versions	Đ	Add to My Download List
Description					

9. On your Active System Manager appliance server, simply extract the contents of the installation ISO into a new directory using the following commands (login as the **root** user") :

<pre># mkdir /tmp/dellISO</pre>	
<pre># mkdir /home/delladmin/ISOBootImages/esxi5.1_dell_ISOBoot_New</pre>	
<pre># mount -o loop VMware-VMvisor-Installer-5.1.0-799733.x86_64-</pre>	
Dell_Customized_RecoveryCD_A00.iso /tmp/dellISO	
<pre># cp -fr /tmp/dellISO /home/delladmin/ISOBootImages/esxi5.1 dell ISOB</pre>	3oot New

chmod +w /home/delladmin/ISOBootImages/esxi5.1_dell_ISOBoot_New/*

Note:

If the newly added image need to replace the existing image, then execute following commands:

```
mv /home/delladmin/ISOBootImages/esxi5.1_dell_ISOBoot_New
/home/delladmin/ISOBootImages/esxi5.1 dell ISOBoot
```

E.2 Modifying the ESXi boot.cfg Configuration File

To confirm that the installation source is not in the root of the TFTP server, perform the following steps:

1. Update the kernelopt parameter to point the kickstart file to the CD-ROM:

```
# cat boot.cfg
bootstate=0
title=Loading ESXi installer
kernel=/tboot.b00
kernelopt=ks=cdrom:/KS.CFG
modules=/b.b00 --- /useropts.gz --- /k.b00 --- /chardevs.b00 --- /a.b00 ---
/user.b00 --- /s.v00 --- /misc cni.v00 --- /net bnx2.v00 --- /net bnx2.v01 ---
/net cnic.v00 --- /net tq3.v00 --- /scsi bnx.v00 --- /scsi bnx.v01 ---
/net bna.v00 --- /scsi bfa.v00 --- /ima be2i.v00 --- /scsi be2.v00 ---
/net igb.v00 --- /scsi mpt.v00 --- /ima qla4.v00 --- /net qlcn.v00 ---
/scsi_qla.v00 --- /ata_pata.v00 --- /ata_pata.v01 --- /ata_pata.v02 ---
/ata pata.v03 --- /ata pata.v04 --- /ata pata.v05 --- /ata pata.v06 ---
/ata pata.v07 --- /block cc.v00 --- /ehci ehc.v00 --- /weaselin.t00 ---
/esx dvfi.v00 --- /xlibs.v00 --- /ipmi ipm.v00 --- /ipmi ipm.v01 ---
/ipmi ipm.v02 --- /misc dri.v00 --- /net be2n.v00 --- /net e100.v00 ---
/net e100.v01 --- /net enic.v00 --- /net_forc.v00 --- /net_ixgb.v00 ---
/net nx n.v00 --- /net glge.v00 --- /net r816.v00 --- /net r816.v01 ---
/net s2io.v00 --- /net sky2.v00 --- /net vmxn.v00 --- /ohci usb.v00 ---
/sata_ahc.v00 --- /sata_ata.v00 --- /sata_sat.v00 --- /sata_sat.v01 ---
/sata sat.v02 --- /sata sat.v03 --- /sata sat.v04 --- /scsi aac.v00 ---
/scsi adp.v00 --- /scsi aic.v00 --- /scsi fni.v00 --- /scsi hps.v00 ---
/scsi ips.v00 --- /scsi lpf.v00 --- /scsi meq.v00 --- /scsi meq.v01 ---
/scsi_meg.v02 --- /scsi_mpt.v01 --- /scsi mpt.v02 --- /scsi rst.v00 ---
/uhci usb.v00 --- /tools.t00 --- /scsi qla.v01 --- /dell con.v00 --- /xorg.v00
--- /imgdb.tgz --- /imgpayld.tgz
build=
updated=0
# chmod +w /home/delladmin/ISOBootImages/esxi5.1 dell ISOBoot New/*
```

E.3 Creating a Kickstart Configuration File

To create a kickstart configuration file, perform the following steps:

Active System Manager Solution Guide-Active System 800 (AS800)

1. Create the image directory on the HTTP server base location:

```
# cd /home/delladmin/ISOBootImages/esxi5.1_dell_ISOBoot_New
```

Note:

The name of the directory needs to be same as the image directory created on the TFTP server.

2. Create a file named "ks.cfg" inside the image directory.

The content of the file will as shown below:

```
# Sample scripted installation file
# Accept the VMware End User License Agreement
vmaccepteula
# Set the root password for the DCUI and ESXi Shell
rootpw <PASSWORD>
clearpart --firstdisk=<FIRSTDISK> --overwritevmfs
# Install on the first local disk available on machine
install --firstdisk=<FIRSTDISK> --overwritevmfs
# Set the network to DHCP on the first network adapter, use the specified
hostname and do not create a portgroup for the VMs
<NETWORKCONTENT>
# reboots the host after the scripted installation is completed
reboot
%firstboot --interpreter=busybox
<FIRSTBOOTDATA>
```

Notes:

- The value of <PASSWORD> will be replaced with the password string defined in the Resource Adapter configuration file. The default value is **iforgot**.
- The value of <FIRSTDISK> will be replaced by local/usb, depending on the boot
 sequence defined in the deployment template.
- The value of <NETWORKCONTENT> will be replaced for the DHCP or static IP address configuration. The default configuration is **dhcp**. If the value of the IP address, subnet mask, and name-server is provided in the inventory, then the static IP address configuration will be applied on the server.
- The value of <FIRSTBOOT> will be replaced by the network configuration template file, available inside the Resource Adapter package. The configuration is based on the specifications for the Active System 800VMware Deployment document.
- The <FIRSTBOOT> configuration also includes:
 - o iSCSI initiator configuration

 $\circ~$ ESXi license Key. The value is added if the license key information is available in the resource adapter configuration file.

Name of the Local datastore

3. Copy the ks.cfg file to the HTTP Server base location.

```
mkdir -p /var/www/html/esxi5.1_dell_ISOBoot_New/
cp /home/delladmin/ISOBootImages/esxi5.1_dell_ISOBoot_New/ks.cfg
/var/www/html/esxi5.1_dell_ISOBoot_New/ks.cfg
```

If the existing image directory is replaced, skip the above commands and execute the following:

```
mkdir -p /var/www/html/esxi5.1_dell_ISOBoot
cp /home/delladmin/ISOBootImages/esxi5.1 dell ISOBoot/ks.cfg
```

/var/www/html/esxi5.1_dell_ISOBoot/ks.cfg

4. Update the file permission on the newly added image:

```
chown -R delladmin:delladmin /home/delladmin/ISOBootImages
chmod -R +w /home/delladmin/ISOBootImages/
```

E.4 Adding the New Image to the Software Repositories

If the new image is added by replacing the earlier image directory, then no change is required.

If the new image is added with a new name/directory then "ISO Bootable Image" repository must be updated, as described in 3.3.4 Updating Repository Elements for ISO Bootable Images section.

F Appendix F– Planning Worksheet

Equipment	IP Address	Subnet Mask	Gateway	Username	Password
Chassis 1 CMC					
Chassis 2 CMC					
iDRAC for all M620					
Force10 S4810 Switch1					
Force10 S4810 Switch2					
EqualLogic Storage Array Group Management					
EqualLogic Storage Array Group on iSCSI Network					
Active System Manager Appliance					
vCenter					

Table 18. Out of Band Management IP Address Configuration

F.1 ESXI Server IP Configuration

The following parameters for each server are required:

- ISCSIvNICIPAddresses—Space-separated list of IP addresses to be assigned to iSCSI virtual network interface cards (vNICs). For example, for updating information for "vmnic6 vmnic7" using the Update Port Group with iSCSI VLAN operation, the value will be in the 192.168.120.xx 192.168.120.yr format. The IP Addresses needs to be separated by a space ""
- ISCSINetmask iSCSI subnet mask of the iSCSI virtual network interface cards (vNICs)
- iSCSIChapUsername iSCSI Chap username used to access volume of EqualLogic Storage Array
- iSCSIChapSecret iSCSI Chap secret corresponding to iSCSI Chap username.
- ServerHostname-Hostname to be assigned to the ESXi server.
- ServerDomainName Domain name to be assigned to the ESXi server.
- ServerNameServer Name server to be assigned to the ESXi server.
- ServerGateway–Gateway for the ESX server.
- ServerNetmask–Netmask for the ESX server.
- ServerIPAddress—IP address that must be assigned to the ESX server. If the hypervisor must retrieve an IP address from the DHCP server, leave this parameter blank.
- ServerPassword Server password to be assigned during unattended installation.

F.2 VLAN for IOA Configuration

Traffic Type

VLAN

Management	
vMotion	
VM Workload(s)	

iSCSI Management / Traffic

VMware Workloads

- 1. Administrator needs to create a volume on EqualLogic storage array manually
- 2. This volume needs to contain the base line VMs that will be used for creating the VM workloads

Note:

The base line VMs needs to have VMware Tools installed.

G Appendix G–PXE Setup Requirements

Considerations before creating the DHCP Server:

- The PXE Network must be separate from the Management Network.
- Active System Manager must have a network interface with same subnet as the TFTP Server. Appliance uses ARP entries for identifying the IP Address assigned to the ESXi Servers by the DHCP Server.
- The Active System Manager VM appliance has pre-defined templates for installing ESXi 5.1 on the Dell blade servers using PXE boot. For enabling the Preboot Execution Environment (PXE) boot, the following additional services are configured on the appliance:

G.1 TFTP Server

TFTP services are enabled and deployed at **/var/lib/tftpboot** on the appliance. The ESXi Dell customized image is embedded within the appliance.

G.2 HTTP Server

HTTP services are enabled on the appliance.

G.3 DHCP Server

DHCP services are disabled on the appliance to avoid any issue with an existing DHCP server that may already be running on the same customer network. For the PXE setup requirement, the DHCP services should be running on the same network as the PXE. The DHCP server is configured to use Eth1 on the appliance

The VM appliance is created with one vNIC. The vNIC needs to be in the Hypervisor Management Network.

G.4 Configuring PXE Setup with Embedded DHCP Server

The DHCP Services needs to be enabled on separate network interface on the appliance. Before configuring the DHCP Services, add a new Virtual NIC on the appliance using the VMware vSphere client and restart the appliance.

G.4.1 Configuring the DHCP Server

To configure the DHCP server, perform the following steps:

- 1. Connect to the VM appliance console using the **root** user credentials through either the VMware vSphere Client VM console or the Hyper-V VM console.
- 2. Assign a static IP address on the eth1 interface. This IP Address must belong to the hypervisor Management subnet.
- 3. Edit file /etc/sysconfig/dhcpd and add following content to the file.

```
# Command line options here
DHCPDARGS="eth1"
```

- 4. Edit the /etc/dhcp/dhcpd.conf file.
- 5. Update the values of the IP address ranges and subnets per the customer environment.
- 6. Update the value of the next server with the VM appliance IP address on the same subnet as the DHCP server (eth0 IP address). The "next-server" represents the TFTP Server where the image is hosted.

```
# DHCP Server for Hypervisor management network
# Uncomment following lines with appropriate IP Address range
```

```
" oncommon of for the stand of the stand of the standard of th
```

```
subnet 192.168.122.0 netmask 255.255.255.0 {
```

```
range 192.168.122.102 192.168.122.230;
allow booting;
allow bootp;
filename "pxelinux.0";
next-server 192.168.122.101;
# --- default gateway
option routers 192.168.122.1;
option subnet-mask 255.255.255.0;
option domain-name-servers 192.168.122.1;
option netbios-node-type 2;
default-lease-time 28800;
max-lease-time 28800;
```

G.4.2 Configuring the TFTP Server

}

The ESXi 5.1 customized image is embedded inside the appliance at

/var/lib/tftpboot/esxi51._dell. The image is configured to create a kickstart file dynamically based on the IP address provided in the Active System Manager inventory.

If the ESXi host is configured to learn the IP address through DHCP (configured through orchestration), and then there is no need to update the Server IP Address information in the Active System Manager inventory. The IP Address configured on the hosts by the DHCP server will be updated automatically during the server installation.

If a new image is required to be added to the appliance, follow the steps available in Appendix C-Firmware and Software Base Lineup.

To start the DHCP services, execute the /etc/init.d/dhcpd restart command.

G.5 Configuring the PXE Setup with the Existing DHCP Server

If the DHCP server already exists on the Hypervisor Management Network, perform the following steps:

- 1. Update the appliance's DHCP settings to support the Bootstrap Protocol (BOOTP).
- 2. Edit the /etc/dhcpd/dhcpd.conf file.
- 3. Update the next-server to point to the Active System Manager appliance IP address; the images are hosted on the appliance.

```
allow booting;
allow bootp;
filename "pxelinux.0";
next-server 192.168.122.101;
```

H Appendix H–FAQs

- Q1 Volumes on EqualLogic Array are not removed for cancelled sessions. This wastes storage space and consumes iSCSI connections.
- A1 User should manually cleanup the unused volumes on the EqualLogic storage array and iSCSI connections after session is canceled.
- Q2 The orchestrations assume that Port Channel 2 is configured on the switches. If not, you get a failure indicated by red links on the session.
- A2 The list of port-channels are configurable, based on the environment this list could be controlled by updating the "portChannelList" in the "ssi.properties" file under "\$HOME/asm-galeforce/gf/common/integrations/Dell/Force10-S4810"
- Q3 Where is the VM created? Is there way to specify which Datastore gets created?
- A3 User can specify on which datastore the VM will be created by providing the value of "TargetDatastore" provisioning parameter of the VM in the template as shown in the screenshot below. If there is no value provided for "TargetDatastore", the RA chooses the best available datastore for VM creation.

Figure 109. Provisioning Properties

	Link	_1(
Template Link		
Properties		
	DiskFormat	Thin
Resource	GuestCustomizationRequired	false
Provisioning	GuestDNSDomain	
Inventory	GuestHostName	
Configuration Files	GuestType	Windows
Image Files	GuestWindowsDomain	
inagernes	GuestWindowsDomainAdministrator	
	LinuxTimeZone	
	ManagementNetwork	
	MonitoringFrequency	1
	MonitoringRequired	true
	ProductId	
	ResourcePool	
	TargetDatastore	Datastore2
	VMDisplayName	

- Q4 Is there a way to revert a template or import the original template?
- A4 The original templates are available on the appliance under folder \$HOME/DefaultTemplates

Also as best practice:

- a. You should make a copy of the template and make the required modification in the cloned template.
- b. Keep the copy of the original templates by exporting them locally on a client machine and importing it back as needed.
- Q5 What is the difference between synchronize and discovery

A5 TBD.

- Q6 SSI properties will be overwritten when upgrading the RA.
- A6 Yes upgrading the RA will override the ssi.properties file. As best practice, before upgrading the RA, backup RA directory by following the steps given below -
 - Login the Active System Manager server as "delladmin" user
 - cd \$HOME/asm-galeforce/gf/common/integrations
 - cp -r <manufacturer>/<model> <manufacturer>/<model>_<CurrentDate>
- Q7 How Gold Volumes on EqualLogic storage array are secured?
- A7 Gold volume is secured by creating the access rights for the chap users.

Steps to create the Gold Volume -

- 1. Create a volume of appropriate size on EqualLogic Storage array.
- 2. Associate the chap account and associate it with the newly created volume.
- 3. Connect to the management host and configure the newly created datastore.

- **Q8** What about images and firmwares released after this release of Active System Manager 7.0?
- A8 Images and firmware versions that are released after Active System Manager 7.0 should work but this should be validated with the solution.
- Q9 What is base level configuration and what is consists of for Dell Force10 switches?
- A9 Base level configuration is the minimal set of configuration running on the switches so as to bring them to an operational state. Additional details of these configurations can be found in the embedded files.
- Q10 Is it required to create pools on Dell EqualLogic storage array?
- A10 Creating pool is optional. If there are no user-defined pools on the EqualLogic Storage array, then a newly created volume becomes part of the default storage pool. Pools can be created by executing the **PoolCreate** method on the EqualLogic group object in the Operation Center View.
- Q11 Is HTTPS supported for connecting to Active System Manager?
- A11 Yes, HTTPS is supported on Active System Manager.
- Q12 Is terminal server connectivity required for Dell Force10 switches?
- A12 Terminal server connectivity to Dell Force10 switches is optional.
- Q13 Does the default password of the Active System Manager appliance get updated?
- A13 The appliance login password can be changed. If the password is changed, Software repositories that are configured on Active System Manager Appliance should be modified with the new password.
- Q14 How would a user know what's the optional parameters in an orchestration step method?
- A14 Parameters with the * sign suffixed in front of them are mandatory and the ones without * sign are optional. See figure for exampls.

Figure 110. Parameters

Name	Value	Data Type	Unit	-
ImageName	san://ISO Bootable Ima	string		
ESXServerLicenseKey		string		
■vCenterIPAddress	192.168.120.125	string		
vCenterClusterName	AS800Cluster	string		
🖁 vCenterDatacenter	Gale	string		Ξ
📄 GoldDatastoreVolum	GoldVolume	string		
📱 DatastoreVolumeSize	100g	string		
BootProtocol	static	string		
📄 vCenterFolderName	AS800Folder	string		
InstallationDiskType	HDD	string		
StoragePoolName	default	string		-

Q15 When do I add new images and firmware versions in the appliance?

A15 TBD

- Q16 If a customer is not going to use PXE deployments, are they still required to configure this?
- A16 PXE setup is optional if a customer is not going to use PXE deployment. They can use ISO boot solution of Active System Manager 7.0
- Q17 Do you want to show Hyper-V? These are all only VMware specific.

- A17 Active System Manager 7.0 supports VMware ESXi server imaging and workload provisioning for VMware VM. Microsoft Hyper-V is not supported with Active System Manager 7.0.
- Q18 How to change the hostname of the Active System Manager Server?
- A18 Steps to change hostname of the Active System Manager server
 - a. Log in to the Active System Manager as the root user.
 - b. Open the **/etc/sysconfig/network** file and update the "HOSTNAME" field value with the new hostname.
 - c. Also update the hostname in the /etc/hosts file.
 - d. Reboot the server by executing the **reboot** command.
 - e. Once the server is up and running, log in to the server as the **delladmin** user.
 - f. Verify that the hostname is updated to the new hostname by executing the **hostname** command.
 - g. Ensure that all Active System Manager services are stopped first:

cd \$HOME/asm-galeforce/gf/sbin

- h. Execute the **./updateHostName.sh** file and follow the instructions to update the hostname in the Active System Manager installation.
- i. Start the Active System Manager Services. Details on how to start the services are provided in this guide.