Active System Manager
Version 7.5 Quick Installation Guide

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Overview

Active System Manager (ASM) is Dell's unified management product that provides a comprehensive infrastructure and workload automation solution for IT administrators and teams. ASM simplifies and automates the management of heterogeneous environments, enabling IT to respond more rapidly to dynamic business needs.

IT organizations today are often burdened by complex data centers that contain a mix of technologies from different vendors and cumbersome operational tasks for delivering services while managing the underlying infrastructure. These tasks are typically performed through multiple management consoles for different physical and virtual resources, which can dramatically slow down service deployment.

The new Active System Manager 7.5 features an enhanced user interface that provides an intuitive, end-to-end infrastructure and workload automation experience through a unified console. This speeds up workload delivery and streamlines infrastructure management, enabling IT organizations to accelerate service delivery and time to value for customers.

Other Documents You May Need

In addition to this guide, the following documents available on the Dell Support website at dell.com/support/manuals provide additional information about the Active System Manager (ASM), version 7.5.

On the **Manuals** page, in the **Tell us about your Dell system** section, under **No**, select **Choose from a list of all Dell products**, and then click **Continue**. On the **Select your product type** page, click **Software & Security → Enterprise System Management → Active System Manager → Dell Active System Manager 7.5**.

- *Dell Active System Manager version 7.5 User's Guide*
- *Dell Active System Manager version 7.5 Online Help*

  NOTE: You can access the online help after you install ASM.
- *Dell Active System Manager version 7.5 Release Notes*

Licensing

Active System Manager (ASM) licensing is based on the total number of managed resources, except for VMware vCenter. In ASM 7.5 release, standard is the only valid license type supported.

The standard license is a full-access license type.

To download a license:

1. You will receive an email from customer service with instructions to access the license file from digital locker that includes your login ID and password.
2. To view the instructions, log in to "My Locker" with your login (email address) and password.
3. To download a license to your local share, click **download**.

If you are using ASM for the first time, you must upload the license file through the **Initial Setup** wizard. You can then upload and activate subsequent licenses on the **Virtual Appliance Management** page under **Settings**. After uploading an initial license, subsequent uploads replaces the existing license.

Virtual Appliance Requirements

Active System Manager runs as a virtual appliance on a Dell server configured with the following hardware and software:

- Two virtual CPUs
- 8.0 GB RAM
- Hypervisor - vSphere Client (5.1 or 5.5) with ESXi (5.1 or 5.5)

Software Requirements

To display Active System Manager (ASM) correctly, a system must have a minimum 1024 x 768 screen resolution and a Web browser that meets minimum requirements based on the operating system.

Operating System	Internet Explorer	Mozilla Firefox	Google Chrome
Windows Server 2012	Version 9 and Later	Version 26 and Later	Version 32 and Later
Windows Server 2012 R2	Version 9 and Later	Version 26 and Later	Version 32 and Later
Red Hat Enterprise Linux 6.5	Not Supported	Version 26 and Later	Version 32 and Later
Cent OS 6.5	Not Supported	Version 26 and Later	Version 32 and Later

Supported Resources

This section provides information about the resources supported by Active System Manager (ASM). The information has been segmented based on the resource types.

Supported Dell PowerEdge Chassis

PowerEdge M1000e, version CMC 4.5

Supported PowerEdge Servers and Firmware Matrix

The following table provides information about the supported servers.

Resource	BIOS	iDRAC	LC
Dell PowerEdge M420	2.0.23	1.51.51	1.3
Dell PowerEdge M520	2.0.23	1.51.51	1.3
Dell PowerEdge M620	2.1.6	1.51.51	1.3
Dell PowerEdge M820	1.7.3	1.51.51	1.3
Dell PowerEdge R420	2.0.22	1.51.51	1.3
Dell PowerEdge R520	2.0.22	1.51.51	1.3
Dell PowerEdge R620	2.1.3	1.51.51	1.3
Dell PowerEdge R720	2.1.3	1.51.51	1.3
Dell PowerEdge R720XD	2.1.3	1.51.51	1.3
Dell PowerEdge R820	1.7.2	1.51.51	1.3

Supported Cisco UCS Servers and Firmware Matrix

Resource	Firmware Supported
Cisco UCS B200 M1	2.1(3b)
Cisco UCS B200 M2	2.1(3b)
Cisco UCS B230 M2	2.1(3b)
Cisco UCS B250 M1	2.1(3b)
Cisco UCS B200 M3	2.1(3b)

Supported Storage and Firmware Matrix

The following table provides information about the supported storage resources.

Resources	Firmware Supported
EqualLogic PS 4100	7.0
EqualLogic PS 6100	7.0
EqualLogic PS 6110	7.0
EqualLogic PS 6210	7.0

Supported Networks and Firmware Matrix

The following table provides information about the supported Networks.

Resource	Firmware Supported
Dell PowerConnect 7024K	5.1.2.3
Dell Force10 S4810	9.3.0.0
S5000	9.3.0.0
S6000	9.3.0.0
Dell PowerEdge M I/O Aggregator switch	9.2.0.0
Dell Networking MXL 10/40GbE blade switch	9.2.0.0
Cisco Nexus 5548	6.0(2)N2(3)

Supported Adapters and Firmware Matrix

The following table provides information about the supported adapters.

Resource	Firmware Supported
Broadcom 5719 Quad-Port 1GbE Network Daughter Card	7.8
Broadcom 57810 -k Dul-Port 10Gb Mezzanine	7.8
Broadcom 57810 Dual-Port 10GbE Network Daughter Card	7.8
Broadcom 5719 Quad-Port 1Gb Network Interface Card	7.8
Broadcom 5719 Quad-Port 1GbE Network Daughter Card	7.8
Broadcom 57840-k Quad-Port 10GbE Mezzanine	7.8
Broadcom 57840 Quad-Port 10Gb Converged Network Adapter	7.8

2

Installation and Quick Start

The following sections provide installation and quick start information, including step-by-step instructions for deploying and configuring Active System Manager (ASM) in VMware vSphere Client. Only one instance of ASM should be installed within a network environment. Exceeding this limit can cause conflicts in device communication.

Information Prerequisites

Before you begin the installation process:

- Gather TCP/IP address information to assign to the virtual appliance.
- Make sure that VMware vCenter Server and VMware vSphere Client are currently running.
- Download the ASM zip file (contains executable file for VMware and the readme file), and choose a location where you want to deploy.
- Determine the host on which the ASM virtual appliance will be installed. You can use any host managed by VMware vCenter that has network connectivity with your out-of-band (OOB), management, and potentially iSCSI networks. This is required for discovery to complete successfully.

CAUTION: The ASM virtual appliance functions as a regular virtual machine. Therefore, any interruptions or shut downs affects the overall functionality.

Installing Active System Manger

Before you begin, make sure that systems are connected and VMware vCenter Server and VMware vSphere Client are running.

Deployment Prerequisites

Specification	Prerequisite
Connection Requirements	• The virtual appliance is able to communicate with the out-of-band management network and any other networks from which you want to discover the resources. • The virtual appliance is able to communicate with the PXE network in which the appliance is deployed. It is recommended to configure the virtual appliance directly on the PXE network, and not on the external network. • The virtual appliance is able communicate with the hypervisor management network.

Specification	Prerequisite
	• The DHCP server is fully functional with appropriate PXE settings to PXE boot images from ASM or Razor in your deployment network.
Firmware and BIOS Requirements	Make sure all the resources are configured with the firmware versions listed in the section Supported Resources
PowerEdge M1000e Chassis, blade server, and IO aggregators	• Chassis Management Controller (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.
Dell PowerEdge Hypervisor Servers	Server iDRAC is configured and has the out-of-band IP address and login credentials.
Dell PowerEdge Servers	Dell PowerEdge Servers are configured and have the management IP address and login credentials assigned. **NOTE:** The username (root) and password required.
Dell PowerConnect 7024 switches	• The management IP address is configured for the switches. • ASM creates the virtual machine (VM) traffic VLANs dynamically. • Users have access to the switches with enable passwords. • Switches have SSH connectivity enabled.
Dell Force10 S4810 switches (Top-of-Rack [ToR])	• The management IP address is configured for the ToR switches. • ASM creates the virtual machine (VM) traffic VLANs dynamically.
Dell 8 | 4 I/O modules	• The management IP address is configured for the Brocade switches.
EqualLogic Storage Array	• The management and group IP addresses are configured for Storage Array. • All storage array members are added to the group.
Compellent Storage Array	. • The management IP address is configured for Storage Array

Specification	Prerequisite
	• All storage array members are added to the group.
VMware vCenter 5.1 or 5,5	• VMware vCenter 5.1 or 5.5 is configured and accessible through the management and hypervisor management network. • Appropriate licenses are deployed on the VMware vCenter.
PXE Setup	• The details of PXE setup is described in the Configuring ASM Virtual Appliance as PXE Boot Responder section.

Deploying Active System Manager from VMware vSphere Client

1. Extract the .zip file to a location accessible by VMware vSphere Client. It is recommended to use a local drive or CD/DVD, because installing from a network location can take up to 30 minutes.
2. In vSphere Client, select **File** → **Deploy OVF Template**. The Deploy OVF Template wizard displays.
3. On the **Source** page, click **Browse**, and then select the OVF package. Click **Next** to continue.
4. On the **OVF Template Details** page, review the information that is displayed. Click **Next** to continue.
5. On the **Name and Location** page, enter a name with up to 80 characters and then, select an **Inventory Location** where the template will be stored. Click **Next** to continue.
6. On the **End User License Agreement** page, read the license agreement and click **Accept**. Click **Next** to continue.
7. Depending on the vCenter configuration, one of the following options display:
   - **If resource pools are configured** — On the **Resource Pool** page, select the pool of virtual servers on which you want to deploy the appliance virtual machine.
   - **If resource pools are NOT configured** — On the **Hosts/Clusters** page, select the host or cluster on which you want to deploy the appliance virtual machine.

   Click **Next** to continue.
8. If there is more than one datastore available on the host, the **Datastore** page displays. Select the location to store virtual machine (VM) files, and then click **Next** to continue.
9. On the **Disk Format** page, choose one of the following options:
   - To allocate storage space to virtual machines as it is needed, click **thin provisioned format**.
   - To pre-allocate physical storage space to virtual machines at the time a disk is created, click **thick provisioned format**.

   Click **Next** to continue.
10. On the **Ready to Complete** page, review the options you selected on previous pages and click **Finish** to run the deployment job. A completion status window displays where you can track job progress.

3

Configuring the Active System Manager Virtual Appliance

You must configure the following settings in the virtual appliance console before you start using Active System Manager (ASM):

- Configure static IP Address in the virtual appliance. For detailed information, see Configuring Static IP Address in the Virtual Appliance
- Configure ASM Virtual Appliance as PXE boot responder. For detailed information, see Configuring ASM Virtual Appliance as PXE Boot Responder
- Import Windows ISO on the virtual appliance. For detailed information, see Importing Windows ISO on Virtual Appliance
- Deploy the WinPE image file to the virtual appliance Razor. For detailed information, see Deploying WinPE on the Virtual Appliance Razor

Configuring Static IP Address in the Virtual Appliance

1. In the VMware Sphere, click the **Console** tab to open the console of the virtual appliance.
2. Log in to the console with the user name *root* and password *linux* and press Enter.
3. In the **Properties** dialog box, click **Network Configuration.**
4. In the **Network Connections** dialog box, click **Wired** → **Auto eth0**, and then click **Edit**.
5. In the **Editing Auto eth0** dialog box, click **IPv4 Settings** tab.
6. Select **Manual** from the **Method** drop-down list.
7. In the **Addresses** table, type the static IP address, subnet mask, gateway, and then click **Add**.
8. Click **Apply** to set the static IP address of the appliance.

Configuring ASM Virtual Appliance as PXE Boot Responder

Active System Manager (ASM) requires both PXE and DHCP network services to function. The ASM virtual appliance contains a PXE service (called Razor) that is used to register resources with ASM so that workloads can be deployed. The ASM virtual appliance must be deployed directly on the network configured for the PXE service.

The PXE service requires a DHCP server configured to provide boot server (TFTP PXE server) information and specific start-up file information. The ASM PXE implementation uses the iPXE specification so that the configuration details include instructions to allow legacy PXE servers and resources to boot properly to this iPXE implementation.

This section provides information about configuring DHCP on the following servers. The information includes only the basic configuration options and declarations required for an iPXE environment. These details should be used as a cumulative addition to the settings currently used in your DHCP implementation (if you already have a DHCP environment).

- Microsoft Windows 2012 Server. See Configure DHCP on Windows 2012 DHCP Server
- Microsoft Windows 2008 Server R2. See Configure DHCP on Windows 2008 DHCP Server
- Linux DHCPd (ISC DHCP). See Configuring DHCP for Linux

Configure DHCP on Windows 2012 DHCP Server

To configure the DHCP on Windows 2012 DHCP Server, perform the following tasks:

1. Create DHCP User Class
2. Create DHCP Policy
3. Create Boot File scope option

For additional information, see http://ipxe.org/howto/msdhcp

Create the DHCP User Class

You must create the user class for the DHCP server before creating the DHCP Policy.

1. Open the Windows 2012 DHCP Server DHCP Manager.
2. In the console tree, navigate to **IPv4**. Right click **IPv4**, and then click **Define User Classes** from the drop-down menu.
3. In the **DHCP User Classes** dialog box, click **Add**.
4. In the **New Class** dialog box, enter the following information and click **OK** to create a user class.
   a. In the **Display Name** box, enter *iPXE*
   b. In the **Description** box, enter *iPXE Clients*
   c. In the data pane, under **ASCII**, enter *iPXE*
5. Click **Close**.

Create the DHCP Policy

1. Open the Windows 2012 DHCP Server DHCP Manager.
2. In the console tree, expand the scope that will service your ASM PXE network. Right click **Policies** and select **New Policy**.
   The DHCP Policy Configuration Wizard is displayed.
3. Next to **Policy Name**, type *iPXE* and enter the description as *iPXE Client.* Click **Next**.
4. On the **Configure Conditions for the policy** page, click **Add**.
5. In the **Add/Edit Condition** dialog box, perform the following actions, and then click **OK**.
   - Select **User Class** from the **Criteria** list.
   - Select **iPXE** from the list of **Values** and click **Add**.
6. On the **Configure Conditions for the policy** page, select the **AND** operator and click **Next**.
7. On the **Configure settings for the policy** page, select the **AND** operator and click **Next**.
   - If you want to use only the portion of the DHCP scope for PXE, click **Yes**, and then enter the IP address range to limit the policy.

- If you do not want to use the portion of the DHCP scope for PXE, click **No**.

8. For PXE service to function properly, under **Available Options**, select **067 Bootfile Name**, and enter the string value as *bootstrap.ipxe*.
9. Click **Next**, and then click **Finish**.

Create the Boot File Scope Option

1. Open the Windows 2012 DHCP Server DHCP Manager.
2. In the console tree, expand the scope that will service your ASM PXE network. Right click **Scope Options** and select **Configure Options**.
3. In the right pane, enter the following information:
   - Click **066 Boot Server Host Name** and enter the IP address or DNS name of the ASM server in the **Value** column.
   - For PXE service to function properly, click **067 Bootfile Name** and enter *undionly.kpxe* in the **Value** column.
4. In the right pane, based on your network settings, configure the following:
   - **003 Router** (default gateway that is on the PXE network)
   - **006 Name Server** (DNS server IP address)

Configure DHCP on Windows 2008 DHCP Server

To configure the DHCP on Windows 2008 DHCP Server, perform the following tasks:

1. Create DHCP User Class
2. Create DHCP Policy
3. Create Boot File Scope Option

For additional information, see http://ipxe.org/howto/msdhcp

Create the DHCP User Class

You must create the user class for the DHCP server before creating the DHCP Policy.

1. Open the Windows 2008 DHCP Server DHCP manager.
2. In the console tree, navigate to **IPv4**. Right click **IPv4**, and then click **Define User Classes** from the drop-down menu.
3. In the **DHCP User Class** dialog box, click **Add** to create a new user class.
4. In the **New Class** dialog box, enter the following information and click **OK** to create a user class.
   a. In the **Display Name** box, enter *iPXE*.
   b. In the **Description** box, enter i*PXE Clients*.
   c. In the data pane, under **ASCII**, enter *iPXE*.
5. Click **Close**.

Create the DHCP Policy

Use the new User Class to create a DHCP policy scope option.

1. Open the Windows 2008 DHCP Server DHCP manager.
2. Add a scope option to the DHCP scope that will service the ASM PXE environment.

3. In the **Scope Options** dialog box, click the **Advanced** tab, select **067 Bootfile Name** check box, and in the **String value** box, enter *bootstrap.ipxe* .

   NOTE: For PXE service to function properly, you must enter *bootstrap.ipxe* for the **067 Bootfile Name**.
4. Select **DHCP Standard Options** from the **Vendor** class drop-down list.
5. Select **iPXEclass** from the **User Class** drop-down list.
6. Click **OK** to save the scope option.

The policy is created by utilizing the new User Class with a scope option.

Create the Boot File Scope Option

The Boot File option is created for the DHCP scope that services your ASM PXE.

1. Open the Windows 2008 DHCP Server DHCP Manager.
2. In the console tree, expand the scope that will service your ASM PXE network. Right click **Scope Options** and select **Configure Options**.
3. In the right pane, enter the following information:
   - Click **066 Boot Server Host Name** and enter the IP address or DNS name of the ASM server in the **Value** column.
   - For PXE service to function properly, click **067 Bootfile Name** and enter *undionly.kpxe* in the **Value** column.
4. Additionally, in the right pane, based on you network settings, configure the following:
   - **003 Router** (default gateway that is on the PXE network)
   - **006 Name Server** (DNS server IP address)

Configuring DHCP for Linux

You can manage the configuration of the Linux DHCPD service by editing the **dhcpd.conf** configuration file. The **dhcpd.conf** is located at **/etc/dhcp** directory of most Linux distributions. If the DHCP is not installed on your Linux server, install the Network Infrastructure Server or similar services.

Before you start editing the **dhcpd.conf** file, it is recommended to back up the file. After you install the appropriate network services, you must configure the **dhcpd.conf** file before you start the DHCPD service.

The DHCP configuration must include the following options:

- **next-server <IP address>**

  Indicates the IP address of the PXE server. That is, the IP address of the ASM appliance vNIC that exists on the PXE network.
- **filename "bootstrap.ipxe"**

  NOTE: For PXE service to function properly, you must specify *bootstrap.ipxe* for the file name.

The PXE service uses iPXE service. You must use two different bootstrap files for the PXE environment, one for the initial PXE boot, which starts up the system to the final iPXE boot file.

To run this operation, add the following code to the **dhcpd.conf** file:

```
if exists user-class and option user-class = "iPXE" {
      filename "bootstrap.ipxe";
```

```
        } else {
                filename "undionly.kpxe";
        }
```

Secondly, add the following code to the subnet declaration within your **dhcpd.conf** file. This code instructs a legacy PXE server to boot to a legacy boot file, and then directs to the iPXE boot file. For more details, see the Sample DHCP Configuration

The configuration file must contain the following information:

```
# dhcpd.conf
# Sample configuration file for ISC dhcpd
next-server 192.168.123.21;# IP address of ASM Server
default-lease-time 6000;
max-lease-time 7200;
authoritative;
log-facility local7;

subnet 192.168.123.0 netmask 255.255.255.0 {
            range 192.168.123.24 192.168.123.29;
            option subnet-mask 255.255.255.0;
            option routers 192.168.123.1;
            if exists user-class and option user-class = "iPXE" {
                        filename "bootstrap.ipxe";
                        } else {
                        filename "undionly.kpxe";
                        }
            }
```

After you modify the **dhcpd.conf** file based on your environment, you need to start or restart your DHCPD service. For more information, see http://ipxe.org/howto/dhcpd

Sample DHCP Configuration

```
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
#option definitions common to all supported networks...
#option domain-name "example.org";
#option domain-name-servers 192.168.203.46;


#filename "pxelinux.0";
next-server 192.168.123.21;# IP address of ASM Server


default-lease-time 6000;
max-lease-time 7200;


# Use this to enble / disable dynamic dns updates globally.
#ddns-update-style none;


# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
authoritative;


# Use this to send dhcp log messages to a different log file (you also
```

```
have to hack syslog.conf to complete the redirection.
log-facility local7;


# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.


#subnet 192.168.123.0 netmask 255.255.255.0 {
#}


# This is a very basic subnet declaration.


subnet 192.168.123.0 netmask 255.255.255.0 {
range 192.168.123.24 192.168.123.29;
option subnet-mask 255.255.255.0;
option routers 192.168.123.1;
if exists user-class and option user-class = "iPXE" {
    filename "bootstrap.ipxe";
  } else {
    filename "undionly.kpxe";
  }
}


# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.

#subnet 10.254.239.32 netmask 255.255.255.224 {
#range dynamic-bootp 10.254.239.40 10.254.239.60;
#option broadcast-address 10.254.239.31;
#option routers rtr-239-32-1.example.org;
#}


#A slightly different configuration for an internal subnet.
#subnet 10.5.5.0 netmask 255.255.255.224 {
#range 10.5.5.26 10.5.5.30;
#option domain-name-servers ns1.internal.example.org;
#option domain-name "internal.example.org";
#option routers 10.5.5.1;
#option broadcast-address 10.5.5.31;
#default-lease-time 600;
#max-lease-time 7200;
#}


# Hosts which require special configuration options can be listed in
# host statements.   If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.


#host passacaglia {
#  hardware ethernet 0:0:c0:5d:bd:95;
#  filename "vmunix.passacaglia";
#  server-name "toccata.fugue.com";
#}
```

```
# Fixed IP addresses can also be specified for hosts.   These addresses
# should not also be listed as being available for dynamic assignment.
# Hosts for which fixed IP addresses have been specified can boot using
# BOOTP or DHCP.   Hosts for which no fixed address is specified can only
# be booted with DHCP, unless there is an address range on the subnet
# to which a BOOTP client is connected which has the dynamic-bootp flag
# set.
#host fantasia {
#  hardware ethernet 08:00:07:26:c0:a5;
#  fixed-address fantasia.fugue.com
#}


# You can declare a class of clients and then do address allocation
# based on that.   The example below shows a case where all clients
# in a certain class get addresses on the 10.17.224/24 subnet, and all
# other clients get addresses on the 10.0.29/24 subnet.

#class "foo" {
#  match if substring (option vendor-class-identifier, 0, 4) = "SUNW";
#}

#shared-network 224-29 {
#subnet 10.17.224.0 netmask 255.255.255.0 {
#option routers rtr-224.example.org;
#  }
#  subnet 10.0.29.0 netmask 255.255.255.0 {
#    option routers rtr-29.example.org;
#  }
#  pool {
#    allow members of "foo";
#    range 10.17.224.10 10.17.224.250;
#  }
#  pool {
#    deny members of "foo";
#    range 10.0.29.10 10.0.29.230;
#  }
#}
```

Importing Windows ISO on the Virtual Appliance

1. Log in to the virtual appliance with the user name *root*.
2. Copy the **Windows.iso** file to the directory **/var/lib/razor/repo-store/**
3. Create a **/tmp/windows_repo.json** file with the following content:

   ```
   {
   "name": "win2012",
   "iso-url": "file:///var/lib/razor/repo-store/<windows ISO name>.iso"
   }
   ```
4. To register the .iso file, run the following command.

   ```
   sudo razor create-repo --json /tmp/windows_repo.json
   ```
5. To verify whether or not the repository is created, run:

   ```
   sudo razor repos
   ```

6. Execute the following commands to extract the **.iso file** from the directory **/var/lib/razor/repo-store** to the directory **/var/lib/razor/repo-store/win2012**. Make sure that your Windows **.iso file**is available in **"repo-store"** directory where you run the following commands.

   ```
   "mount -o loop en_windows_server_2012_x64_dvd_915478.iso /mnt"
   "rsync -av /mnt/ win2012"
   "/umount/mnt"
   ```

7. Rename the WinPE image file that you created to **razor-winpe.wim**, and then copy the file to the directory **win2012**.
8. Make sure that the right privileges are granted to the repository files.

   ```
   "find win2012 -print0 | xargs -0 chown razor:razor"
   ```

9. Edit the **unattended.xml.erb** file available in the following directory **/opt/razor-server/installers/windows/8-pro**, and then enter the Windows license key where the license is saved in the **unattend.xml** file. Windows license keys are not included with ASM and must be obtained from the vendor.

Deploying WinPE on the Virtual Appliance Razor

Before creating the WinPE image, perform the following tasks:

1. Extract the files from the following location:

   https://github.com/puppetlabs/razor-server/tree/master/build-winpe
2. In the **razor-client.ps1** file, replace `${server}` with the IP address of your ASM appliance in the following code:

   ```
   $baseurl = http://${server}:8080/svc
   ```

3. To deploy WinPE using an image file, complete the tasks given in the link here:

   https://github.com/puppetlabs/razor-server/wiki/Installing-windows

NOTE: If you have issue accessing the links, check if your browser is supported by GitHub.

4

Completing Initial Configuration

Log in to Active System Manager using the appliance IP address after completing the steps in this guide,

After logging into ASM, you need complete the basic configuration setup in the **Initial Setup** wizard. For more information about completing the initial setup see the *Active System Manger Version 7.5 User's Guide*.