



PlateSpin Forge® 11.1

Hardware Provider Guide

March 2015

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About This Book and Library

This *Hardware Provider Guide* provides conceptual information about the PlateSpin Forge product. It also defines terminology and includes troubleshooting information.

Intended Audience

This guide is intended for IT staff, such as data center administrators and operators, who use PlateSpin Forge in their ongoing workload protection projects.

Information in the Library

The library for this product is available in HTML and PDF formats on the [PlateSpin Forge Documentation \(https://www.netiq.com/documentation/platespin-forge/\)](https://www.netiq.com/documentation/platespin-forge/) website. In addition to the English language, online documentation is available in the Chinese Simplified, Chinese Traditional, French, German, Japanese, and Spanish languages.

The PlateSpin Forge library provides the following information resources:

Release Notes

Provides information about new features and enhancements in the release, as well as any known issues.

Getting Started Guide

Provides information about how to configure the appliance for your environment.

User Guide

Provides conceptual information, an overview of the user interface, and step-by-step guidance for common tasks.

Rebuild Guide

Provides information about how to rebuild and reconfigure the appliance by using the *Protect Forge Field Rebuild Kit*.

Upgrade Guide

Provides information about how to upgrade the appliance software.

Help

Provides context-sensitive information and step-by-step guidance for common tasks as you work in the user interface.

Additional Resources

We encourage you to use the following additional resources online:

- ♦ [PlateSpin Forge Forum \(https://forums.netiq.com/forumdisplay.php?56-Platespin-Forge\)](https://forums.netiq.com/forumdisplay.php?56-Platespin-Forge): A web-based community of product users where you can discuss product functionality and advice with other product users.
- ♦ [PlateSpin Forge Product \(https://www.netiq.com/products/forge/\)](https://www.netiq.com/products/forge/): A web-based product brochure that provides information about features, how to buy, technical specifications, frequently asked questions, and a variety of resources such as videos and white papers.
- ♦ [NetIQ User Community \(https://www.netiq.com/communities/\)](https://www.netiq.com/communities/): A web-based community with a variety of discussion topics.
- ♦ [NetIQ Support Knowledgebase \(https://www.netiq.com/support/kb/\)](https://www.netiq.com/support/kb/): A collection of in-depth technical articles.
- ♦ [NetIQ Support Forums \(https://forums.netiq.com/forum.php\)](https://forums.netiq.com/forum.php): A web location where product users can discuss NetIQ product functionality and advice with other product users.
- ♦ [MyNetIQ \(https://www.netiq.com/f/mynetiq/\)](https://www.netiq.com/f/mynetiq/): A website offering product information and services, such as access to premium white papers, webcast registrations, and product trial downloads.

About NetIQ Corporation

We are a global, enterprise software company, with a focus on the three persistent challenges in your environment: Change, complexity and risk—and how we can help you control them.

Our Viewpoint

Adapting to change and managing complexity and risk are nothing new

In fact, of all the challenges you face, these are perhaps the most prominent variables that deny you the control you need to securely measure, monitor, and manage your physical, virtual, and cloud computing environments.

Enabling critical business services, better and faster

We believe that providing as much control as possible to IT organizations is the only way to enable timelier and cost effective delivery of services. Persistent pressures like change and complexity will only continue to increase as organizations continue to change and the technologies needed to manage them become inherently more complex.

Our Philosophy

Selling intelligent solutions, not just software

In order to provide reliable control, we first make sure we understand the real-world scenarios in which IT organizations like yours operate — day in and day out. That's the only way we can develop practical, intelligent IT solutions that successfully yield proven, measurable results. And that's so much more rewarding than simply selling software.

Driving your success is our passion

We place your success at the heart of how we do business. From product inception to deployment, we understand that you need IT solutions that work well and integrate seamlessly with your existing investments; you need ongoing support and training post-deployment; and you need someone that is truly easy to work with — for a change. Ultimately, when you succeed, we all succeed.

Our Solutions

- ◆ Identity & Access Governance
- ◆ Access Management
- ◆ Security Management
- ◆ Systems & Application Management
- ◆ Workload Management
- ◆ Service Management

Contacting Sales Support

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Email:	info@netiq.com
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Europe, Middle East, and Africa:	+353 (0) 91-782 677
Email:	support@netiq.com
Website:	www.netiq.com/support
Product Specific Information:	https://www.netiq.com/support/kb/product.php?id=PlateSpin_Forge

To learn more about the services and procedures of NetIQ Technical Support, see the *Technical Support Guide* (https://www.netiq.com/Support/process.asp#_Maintenance_Programs_and).

Contacting Documentation Support

Our goal is to provide documentation that meets your needs. The documentation for this product is available on the [PlateSpin Forge Documentation](https://www.netiq.com/documentation/platespin-forge/) (<https://www.netiq.com/documentation/platespin-forge/>) website in HTML and PDF formats.

If you have suggestions for documentation improvements, click **comment on this topic** at the bottom of any page in the HTML version of the documentation. You can also email Documentation-Feedback@netiq.com. We value your input and look forward to hearing from you.

Contacting the Online User Community

NetIQ Communities, the NetIQ online community, is a collaborative network connecting you to your peers and NetIQ experts. By providing more immediate information, useful links to helpful resources, and access to NetIQ experts, NetIQ Communities helps ensure you are mastering the knowledge you need to realize the full potential of IT investments upon which you rely. For more information, visit <http://community.netiq.com>.

1 Overview

This guide is intended for contracted hardware appliance vendors tasked with building and configuring the PlateSpin Forge hardware appliance. It provides the procedure for building and configuring Platespin Forge 11.1 (a consolidated recovery hardware appliance from NetIQ) on Dell PowerEdge R720 servers and Dell PowerEdge R730xd servers.

- ◆ [Section 1.1, “About the Forge Build and Configuration Process,” on page 9](#)
- ◆ [Section 1.2, “What You Need,” on page 9](#)

1.1 About the Forge Build and Configuration Process

At a high level, the Forge 11.1 hardware appliance build and configuration consists of the following major steps:

- ◆ Creating the RAID array on the appliance
- ◆ Installing the hypervisor
- ◆ Deploying Forge software (including the Forge Management VM and the Appliance Configuration Console (ACC))
- ◆ Licensing all components

1.2 What You Need

Before you start building and configuring the Forge appliance, ensure that you have the following prerequisites:

Prerequisite	Notes
A <i>Forge 11.1 Appliance Build Kit</i> , containing: <ul style="list-style-type: none">◆ The <i>PlateSpin Forge 11.1 Appliance Build Kit</i> USB Flash Drive◆ This <i>PlateSpin Forge 11.1 Hardware Appliance Build and Configuration Guide</i>.◆ A printed version of the <i>Forge 11.1 Getting Started Guide</i>.	Contact PlateSpin Support to request a kit. The USB Flash drive contents include the following: <ul style="list-style-type: none">◆ An <code>.iso</code> image at the root of the drive (burn the contents of this folder onto a CD for mounting.)<ul style="list-style-type: none">◆ The Forge Appliance installation program.◆ A <code>/vm</code> folder<ul style="list-style-type: none">◆ the Forge VM in <code>.ovf</code> format◆ vmdk files needed by the VM
A VMware ESXi 5.5 license for the Forge hypervisor	Contact VMware support to obtain the ESXi 5.5 OEM product key.
A <i>Microsoft Windows Server 2012</i> license for the Forge VM	Follow your normal procedure for obtaining a COA sticker (with a product key) for <i>Windows Server 2012</i> .
A <i>Microsoft SQL Server 2014</i> license for the Forge VM	Follow your normal procedure for obtaining an OEM product key for <i>SQL Server 2014</i> .

2 Configuring the RAID Controller

This section provides information about configuring the RAID controller of the Forge 11.1 hardware appliance:

- Section 2.1, “PowerEdge R720 RAID Configuration,” on page 11
- Section 2.2, “PowerEdge R730xd RAID Configuration,” on page 14

2.1 PowerEdge R720 RAID Configuration

On first boot of the hardware, you use the PERC H710P configuration utility to configure the RAID controller for PlateSpin Forge.

To configure the RAID controller on a Dell R720:

- 1 During the R720 boot sequence, wait approximately 24 seconds for this screen,

```

F2 = System Setup
F10 = Lifecycle Controller
Entering BIOS Boot Manager
F12 = PXE Boot

Two 2.40 GHz Quad-core Processors, Bus Speed:6.40 GT/s, L2/L3 Cache:1 MB/10 MB
System running at 2.40 GHz
System Memory Size: 32.0 GB, System Memory Speed: 1067 MHz, Voltage: 1.35V

Dell Serial ATA AHCI BIOS Version 1.0.2
Copyright (c) 1988-2012 Dell Inc.
Port E: HL-DT-ST DVD-ROM DU30M

Broadcom NetXtreme Ethernet Boot Agent
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.
Press Ctrl-S to enter Configuration Menu

PowerEdge Expandable RAID Controller BIOS
Copyright(c) 2011 LSI Corporation
Press <Ctrl><R> to Run Configuration Utility
HA -0 (Bus 3 Dev 0) PERC H710 Mini
FW package: 21.0.2-0001
```

then press Ctrl+R to launch the PERC H710P configuration utility.

- 2 In the configuration utility, configure the PERC RAID controller with multiple logical disks spanning all six physical disks in a single RAID 5 array:

2a Delete all existing disk groups:

IMPORTANT: Remember, deleting a disk group also deletes the data on that disk group.

2a1 On the *Virtual Disk* page, select an existing disk group, then press F2 to open the Operations dialog.

2a2 In the dialog, select **Delete Disk Group**.



2a3 Repeat [Step 2a1](#) and [Step 2a2](#) until all disk groups are deleted.

2b Create a new disk group for the Forge system:

2b1 On the *Virtual Disk* page, select the root of the tree view, **PERC 710 Mini** and press F2 to open the Operations dialog.

2b2 In the dialog, select **Create New VD** to open the *Create New VD* page.



2b3 On this the page, configure the new virtual disk by completing the following fields:

- ◆ **Raid Level:** Select **RAID-5**.

or

If your hardware configuration consists of eight 4TB disk drives, select **RAID-6**.

- ◆ **Physical Disks:** Select all available physical disks.

Disk sizes might vary.

- ◆ **VD Size:** Enter 300, the recommended size for the Forge System disk group.
- ◆ **VD Name:** Enter `ForgeSystem`.

Click **OK** when these fields are completed.

2c Create a new disk group for the Forge failover VMs:

2c1 On the *Virtual Disk* page tree view, select **Disk Group: 0, RAID 5** (or **RAID 6** – see [Step 2b3](#)) and press F2 to open the Operations dialog.

2c2 In the dialog, select **Add New VD** to open the *Add VD in Disk Group 0* page.

2c3 On this the page, configure the new virtual disk for the failover by completing the following fields:

- ◆ **VD Size:** Enter the default maximum size for the rest of the disk (that is, 4355 GB or greater).
- ◆ **VD Name:** Enter `FailoverVMs`.

Click **OK** when these fields are completed.

2d Configure the VD disks: to fast initialize:

2d1 On the *Virtual Disk* page tree view, select **Virtual Disks** > <disk_name> and press F2 to open the Operations dialog.

2d2 In the dialog, select **Initialization** > **Fast Init** > **OK**.

2d3 Repeat [Step 2d1](#) and [Step 2d2](#) for each virtual disk.

The final RAID configuration should look like this:



3 Press Esc to exit the controller configuration utility.

4 (Conditional) Press Ctrl+Alt+Del if you are prompted.

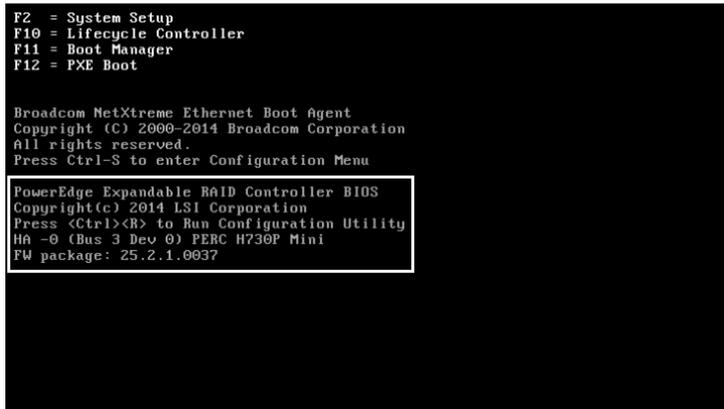
The server reboots.

2.2 PowerEdge R730xd RAID Configuration

On first boot of the hardware, you use the PERC H730P configuration utility to configure the RAID controller for PlateSpin Forge.

To configure the RAID controller on a Dell R730xd:

- 1 During the R730xd boot sequence, wait approximately 24 seconds for this screen,



then press Ctrl+R to launch the PERC H730P configuration utility.

- 2 In the configuration utility, configure the PERC RAID controller with multiple logical disks spanning all physical disks in a single RAID 6 array:

2a Delete all existing disk groups:

IMPORTANT: Remember, deleting a disk group also deletes the data on that disk group.

2a1 On the *Virtual Disk* page, select an existing disk group, then press F2 to open the Operations dialog.

2a2 In the dialog, select **Delete Disk Group**.

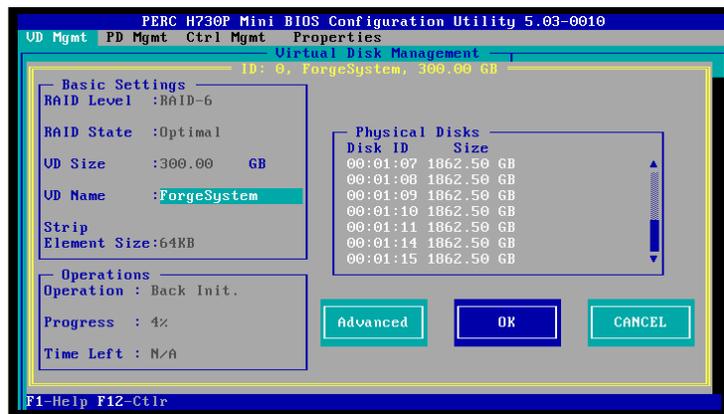


2a3 Repeat [Step 2a1](#) and [Step 2a2](#) until all disk groups are deleted.

2b Create a new disk group for the Forge system:

2b1 On the *Virtual Disk* page, select the root of the tree view, **PERC 730P Mini** and press F2 to open the Operations dialog.

2b2 In the dialog, select **Create New VD** to open the *Create New VD* page.



2b3 On this the page, configure the new virtual disk by completing the following fields:

- ◆ **Raid Level:** Select **RAID-6**.
- ◆ **Physical Disks:** Select all available physical disks.
Disk sizes might vary.
- ◆ **VD Size:** Enter 300, the recommended size for the Forge System disk group.
- ◆ **VD Name:** Enter ForgeSystem.

Click **OK** when these fields are completed.

2c Create a new disk group for the Forge failover VMs:

2c1 On the *Virtual Disk* page tree view, select **Disk Group: 0, RAID 6**, and the press F2 to open the Operations dialog.

2c2 In the dialog, select **Add New VD** to open the *Add VD in Disk Group 0* page.



2c3 On this the page, configure the new virtual disk for the failover by completing the following fields:

- ◆ **VD Size:** Enter the default maximum size for the rest of the disk (that is, 22050 GB or greater).
- ◆ **VD Name:** Enter FailoverVMs.

Click **OK** when these fields are completed.

2d Configure the VD disks: to fast initialize:

2d1 On the *Virtual Disk* page tree view, select **Virtual Disks** > <disk_name> and press F2 to open the Operations dialog.

2d2 In the dialog, select **Initialization** > **Fast Init** > **OK**.

2d3 Repeat [Step 2d1](#) and [Step 2d2](#) for each virtual disk.

The final RAID configuration should look like this:



3 Press Esc to exit the controller configuration utility.

4 (Conditional) Press Ctrl+Alt+Del if you are prompted.

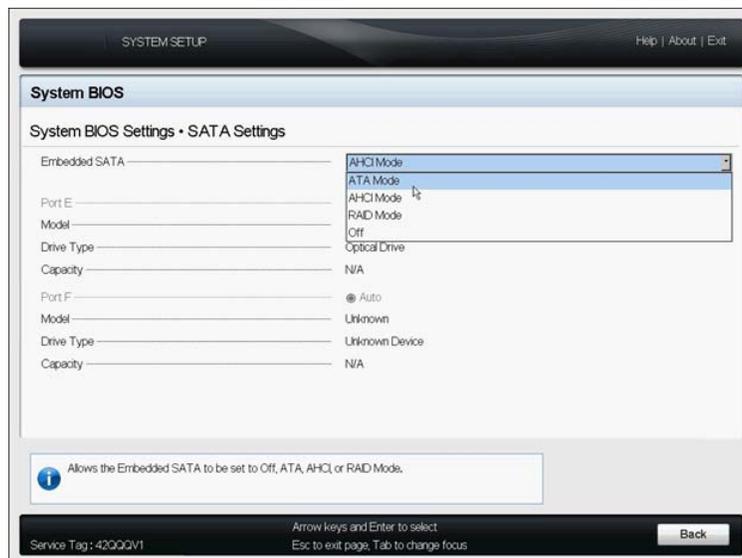
The server reboots.

3 Configuring SATA Settings

NOTE: The Dell PowerEdge R730xd does not have a CD/DVD drive. Ignore this section for R730xd.

The Forge Appliance requires a particular SATA setting in the BIOS. Use these steps to configure that setting:

- 1 During the POST of the Forge appliance hardware, press F2 to open its *System Setup* screen (opening the screen might take up to 30 seconds).
- 2 In the **System Setup Main Menu**, select **System BIOS** to open the *System BIOS Settings* page.
- 3 On the *System BIOS Settings* page, scroll to **SATA Settings**, then press Enter to open the *SATA Settings* page.
- 4 On the *SATA Settings* page, change the **Embedded SATA** setting to **ATA Mode**.



- 5 Press Esc to return to the *System BIOS Settings* page, then continue with instructions in [Chapter 4, “Configuring the Virtualization Technology,”](#) on page 19.

4 Configuring the Virtualization Technology

The Forge Appliance requires a particular virtual technology BIOS setting. Use these steps to configure that setting:

- 1 During the POST of the Forge appliance hardware, press F2 to open its *System Setup* screen (opening the screen might take up to 30 seconds).
- 2 In the **System Setup Main Menu**, select **System BIOS** to open the *System BIOS Settings* page.
- 3 On the *System BIOS Settings* page, scroll to **Processor Settings**, then press Enter to open the *Processor Settings* page.
- 4 On the *Processor Settings* page, ensure that the **Virtualization Technology** setting is set to **Enabled**.
- 5 Press Esc > Esc to exit the *System BIOS Settings* page and return to the *System Setup Main Menu*, then continue with instructions in [Chapter 5, “Configuring LCD Screen Settings,” on page 21](#).
- 6 (Conditional) If you are prompted to save the changes made to the BIOS, click **Yes**.
You should see a message indicating that the changes were successfully saved.

5 Configuring LCD Screen Settings

NOTE: The Dell PowerEdge R730xd does not have an LCD screen. Ignore this section for R730xd.

On Dell hardware, you have the option of configuring the Forge Appliance LCD, a small readout on the computer's front panel. Use these steps to configure the LCD display for Forge:

- 1 In the *System Setup Main Menu*, select **iDRAC Settings** to open the *System iDRAC Settings* page.
- 2 On the *System iDRAC Settings* page, scroll to **LCD**, then press Enter to open the *LCD* page.

NOTE: The menu option and page name used for the LCD settings might vary according to the Dell model you are using:

- ♦ **R720:** The setting name is **LCD** or **Front Panel Security**.
 - ♦ **R710:** The setting name is **Embedded Server Management**.
-

- 3 In the **User-Defined String** field of the *LCD* page, enter `PlateSpin Forge`.
- 4 Press Esc > Esc > Esc to exit the *iDRAC Settings* page and the *System Setup Main Menu*, then continue with instructions in [Chapter 6, "Installing Other Components Required by Forge," on page 23](#).
- 5 (Conditional) If you are prompted to save the changes made to the BIOS, click **Yes**. You should see a message indicating that the changes were successfully saved.

6 Installing Other Components Required by Forge

This section includes information about installing and configuring the other software components required by PlateSpin Forge.

- ♦ [Section 6.1, “Creating the Forge 11.1 Installation CD,” on page 23](#)
- ♦ [Section 6.2, “Installing VMware ESXi 5.5.0 to the Appliance,” on page 23](#)
- ♦ [Section 6.3, “Preparing a Forge Administrative Computer,” on page 24](#)
- ♦ [Section 6.4, “Licensing Microsoft Products on the Forge Management VM,” on page 27](#)
- ♦ [Section 6.5, “Licensing the ESXi 5.5 Hypervisor,” on page 29](#)
- ♦ [Section 6.6, “Running the Forge Appliance Configurator,” on page 30](#)
- ♦ [Section 6.7, “Backing Up the Factory VM,” on page 30](#)
- ♦ [Section 6.8, “Preparing the Appliance for Shipping,” on page 31](#)

IMPORTANT: Prior to installing the software listed in this section, check your keyboard model. Do not use the Dell Enhanced Multimedia USB Keyboard, Model SK-8135. This keyboard is known to cause USB conflicts.

6.1 Creating the Forge 11.1 Installation CD

The PlateSpin Forge 11.1 installation program requires a bootable CD. You need to burn this CD from the ISO image included on the *PlateSpin Forge 11.1 Appliance Build Kit* USB Flash Drive.

To create a Forge installation CD from the PlateSpin Forge 11.1 USB Flash Drive:

- 1 At an independent, running Windows computer, insert a recordable CD into the CD-ROM drive.
- 2 At this same computer, insert the *PlateSpin Forge 11.1 Appliance Build Kit* USB Flash Drive into an available USB port and wait for it to mount.
- 3 At the Windows desktop, click **Start** > **Computer** to open Windows Explorer.
- 4 Navigate to the `forge-esx5-11.1.0.xxx-provider.iso` image file at the root of the USB drive, then double-click the image file.
- 5 Select your disk burner from the **Disk Burner** list in Windows.
- 6 Click **Burn** to burn the disk.
- 7 Eject the disk and label it *PlateSpin Forge 11.1.0 Installation*.

6.2 Installing VMware ESXi 5.5.0 to the Appliance

PlateSpin Forge requires VMware ESXi 5.5 to control the Forge Management VM. You need to ensure that you have the *PlateSpin Forge 11.1.0 Installation* CD to proceed with the installation.

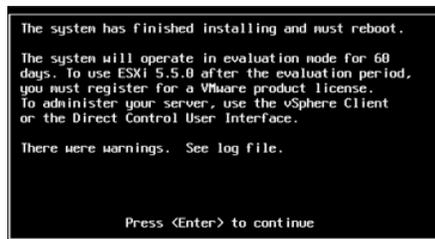
To install VMware ESXi 5.5.0 to the Forge Appliance:

- 1 Power on the appliance and press F11 at the boot prompt.
- 2 While at the boot prompt, insert the installation CD into the CD-ROM drive.
It might take some time for the *Boot Manager* utility to be displayed.
- 3 On the *Boot Manager Main Menu*, select **BIOS Boot Menu** to launch the *BIOS Boot Manager*.
- 4 In the *BIOS Boot Manager* utility, navigate to the option that lets you boot from an optical device (for example, a SATA optical drive), then press Enter.

NOTE: The name of the optical device might vary, depending on the device driver installed on the appliance.

- 5 On the Forge *ESXi build* installation menu, select **ESX Scripted Install for the Forge Appliance**, then press Enter to load the ESXi installer.

The installation progress updates on the screen and moves through several stages. When the process is completed, the following dialog is displayed prior to the system reboot:



NOTE: If you choose not to attend the installation, the system reboots on its own. You will see the ESXi console when you return.

If you encounter problems during the installation, see [Section 7.2, "Errors Occurring During ESXi Installation,"](#) on page 33 of this guide.

- 6 In the dialog, press Enter to reboot the system (or let the system reboot itself), then continue with the instructions in [Section 6.3, "Preparing a Forge Administrative Computer,"](#) on page 24.

6.3 Preparing a Forge Administrative Computer

To continue with the installation and configuration of the appliance, you need to connect directly to it through another computer, an "administrative computer." You should consider using a Windows notebook computer (that is, a "laptop") for this purpose because of its flexibility and mobility.

This section includes the following information:

- ♦ [Section 6.3.1, "Connecting the Appliance and the Administrative Computer,"](#) on page 24
- ♦ [Section 6.3.2, "Deploying the OVF Template,"](#) on page 26

6.3.1 Connecting the Appliance and the Administrative Computer

For licensing and configuration tasks in this section, use the following procedure to connect your administrative computer to the Forge hardware appliance. This requires setting up a physical connection, configuring with a static IP address in the same subnet as Forge, then re-connecting the

administrative computer to the Forge appliance. It also includes establishing a management connection, which enables the administrative computer to configure aspects of the Forge appliance software.

This section includes the following information:

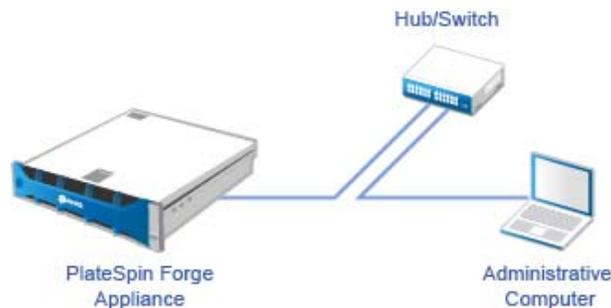
- ◆ “Establishing a Physical Connection” on page 25
- ◆ “Establishing a Management Connection through the vSphere Client” on page 26

Establishing a Physical Connection

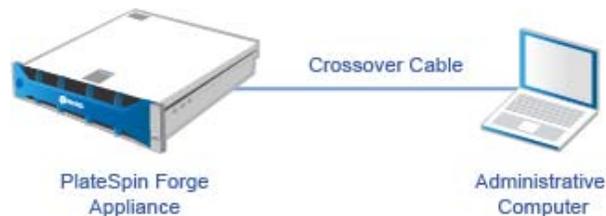
To establish a physical connection between the administrative computer and the Forge Appliance:

- 1 Use one of these methods:

Connection through a Network Switch: Connect both units to a network switch or a hub through an Ethernet network cable:



Direct Connection: Connect your PlateSpin Forge appliance and the computer directly through a crossover cable:



- 2 Turn on the power at the Forge appliance. Wait at least 10 minutes for the system to fully start before trying to connect.
- 3 Access the TCP/IP properties of the administrative computer's wired LAN adapter and assign it an IP address (192.168.1.205) and an associated subnet mask (255.255.255.0).

NOTE: Do not use the following IP addresses:

- ◆ 192.168.1.200 - used by the hypervisor
- ◆ 192.168.1.210 - used by the Forge VM (assigned by an automatic appliance configuration utility).

- 4 Save the settings and close the LAN Properties applet.

Establishing a Management Connection through the vSphere Client

When the administrative computer has been connected physically, you need to establish the management connection between the administrative computer and the ESXi hypervisor and the Forge Management VM. The connection is enabled through the VMware vSphere Client on the administrative computer. By using the vSphere client on the administrative computer, you can access the ESXi hypervisor and the Forge Management VM.

You already installed ESXi 5.5 on the Forge Appliance. From the administrative computer's physical connection to the Forge Appliance, you can access and download the VIC.

On the administrative computer, use the following steps to install the VMware Infrastructure Client program:

- 1 From a browser, enter the Forge Host address to open the *VMware ESXi 5.5 Welcome* page, then select **Download vSphere Client**.
- 2 At the download location, run the vSphere client installation .exe.
- 3 Launch the vSphere Client login, then connect to the PlateSpin Forge using these parameters:

IP address: 192.168.1.200

User name: root

Password: Password1

The VIC opens, connected to the hypervisor.

6.3.2 Deploying the OVF Template

Included in the *PlateSpin Forge 11.1 Appliance Build Kit* USB Flash Drive (available from [PlateSpin Support](#)) is the The VM .ovf file used in the PlateSpin Forge 11.1.0.x release build. You will access this .ovf file during the installation process to import the Forge VM into ESXi.

Use the following steps to deploy the OVF template:

- 1 From the *PlateSpin Forge 11.1 Appliance Build Kit* USB Flash Drive, copy the PlateSpin Forge 11.1 Appliance VM folder, with all its contents, to the administrative computer.
- 2 In the vSphere Client, click **File > Deploy OVF Template**. See ["Installing VMware ESXi 5.5.0 to the Appliance" on page 23](#).
- 3 In the *Deploy OVF Template* dialog, browse to the location where you downloaded the .ovf file, then click **Next**.
- 4 In the **Name** field of the *Name and Location* view, enter PLATESPINFORGE01 as the name for the imported PlateSpin Forge Management VM, then click **Next**.
- 5 From the *Storage* view, select **ForgeSystem** as the destination storage location, then click **Next**.
- 6 From the *Disk Format* view, select **Thick Provision Eager Zeroed**, then click **Next**.
- 7 From the *Ready to Complete* view, select **Power on after deployment**, then click **Finish**.

The VM import process should complete after approximately 15 minutes.

- 8 In the vSphere client, locate the Forge Management VM (PLATESPINFORGE01), right-click the VM, then rename it to PlateSpin Forge Management VM.
- 9 In the vSphere client, click the **Console** tab, then click inside the remote console window.
- 10 At the *Product Key Settings* page, enter the product key.

- 11 On the *Administrator Account Settings* page, set the Administrator user's password as `Password1`, click **Finish**.
- 12 Press `Ctrl+Alt+Insert` to bring up a list of users, select the Administrator user, and then log in as Administrator to the VM.

6.4 Licensing Microsoft Products on the Forge Management VM

NetIQ subscribes to a Microsoft Volume Licensing agreement, allowing us to pre-install Windows Server 2012 and SQL Server 2014 on the Forge Management VM without activating a license for either installation. As the OEM reseller and NetIQ partner, you need to activate the OEM licenses as you prepare each Forge Appliance for shipping.

NOTE: It is assumed that, as an OEM reseller, you have an existing arrangement with Microsoft to obtain product keys/stickers/documentation for Microsoft products being installed.

6.4.1 Licensing Windows Server 2012

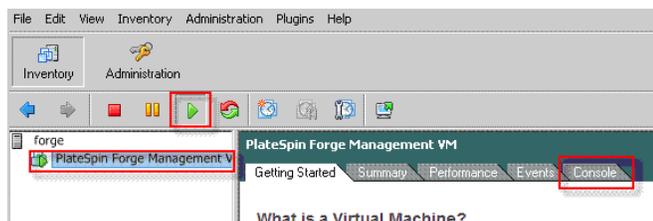
There are two methods you can use to activate the Windows Server 2012 license:

- ♦ [“Offline License Activation by Phone”](#) on page 27
- ♦ [“Multiple Activation Key License Activation”](#) on page 28

Offline License Activation by Phone

To license Windows Server 2012 offline for the Forge Management VM and log in for the first time:

- 1 In the program tree view of the vSphere client (on the administrative computer), select the **PlateSpin Forge Management VM** item and click the green **Play** button to power it on (if it is not already on).



- 2 Click the **Console** tab, then click inside the remote console window.
- 3 On the Windows Server 2012 desktop, right-click the Start button, then select **Command Prompt (Admin)** to open the command line interface with administrative privileges.
- 4 At the command line, enter `slui 4`.
The command launches the Software Licensing User Interface (Wizard) used for calling Microsoft for manual license activation.
- 5 In the interface, select your country or region, dial the toll-free number provided by Microsoft, write down the confirmation ID provided by the Microsoft automated phone system, then click **Enter confirmation ID**.

- 6 In the *Enter your confirmation ID* Wizard page of the interface, enter the confirmation ID you obtained from Microsoft, then click **Activate Windows**.

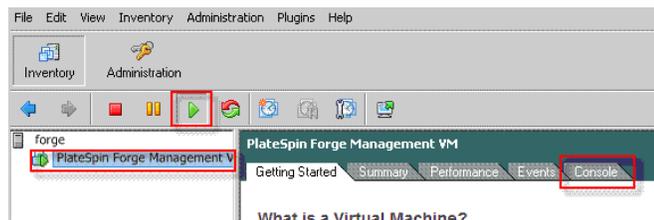


Multiple Activation Key License Activation

As an OEM provider, you might have already made Volume Licensing arrangements with Microsoft to automate and manage the activation process of Volume Licensing media. Under such an arrangement, you could have a Multiple Activation Key License (MAK) that allows the use of a command line licensing tool.

To license Windows Server 2012 for the Forge Management VM using a command line:

- 1 In the program tree view of the vSphere client (on the administrative computer), select the **PlateSpin Forge Management VM** item and click the green **Play** button to power it on (if it is not already on).



- 2 Click the **Console** tab, then click inside the remote console window.
- 3 On the Windows Server 2012 desktop, right-click the Start button, then select **Command Prompt (Admin)** to open the command line interface with administrative privileges.
- 4 At the command line, enter `slmgr.vbs /ipk <MultipleActivationKey>`.

The command launches a visual basic script that configures licensing on the Windows 2012 Server. After the script executes, a pop-up dialog confirms that the product key is installed successfully.

- 5 In the dialog, click **OK** to finish the key installation.

6.4.2 Licensing the SQL Server 2014

To license the SQL Server 2014 for the Forge Management VM:

- 1 Open the remote console window of the running Forge Management VM, click **Start**, then select the Apps arrow located at the lower-left corner of the *Start* screen.
- 2 In the **Apps** tiles array, expand the list, then scroll right to find **SQL Server 2014 Installation Center**.

IMPORTANT: Do NOT select the *SQL Server Installation Center* app listed in the **Microsoft SQL Server 2008** category.

- 3 In this Installation Center app, click **Maintenance > Edition Upgrade**.
- 4 On the *Edition Upgrade* dialog, select **Enter the product key**, then enter the product key you obtained from Microsoft to activate the SQL Server 2014 OEM license on the Forge Management VM.
- 5 On subsequent upgrade dialogs, click **Next** or **Upgrade** until the licensing process is complete, then close the licensing application.

6.5 Licensing the ESXi 5.5 Hypervisor

NetIQ subscribes to a VMware Volume Licensing agreement, allowing us to pre-install ESXi 5.5 on the Forge Management VM without activating a license for the installation. As the OEM reseller and NetIQ partner, you need to activate the vSphere OEM license as you prepare each Forge Appliance for shipping.

Obtaining the vSphere Product Key

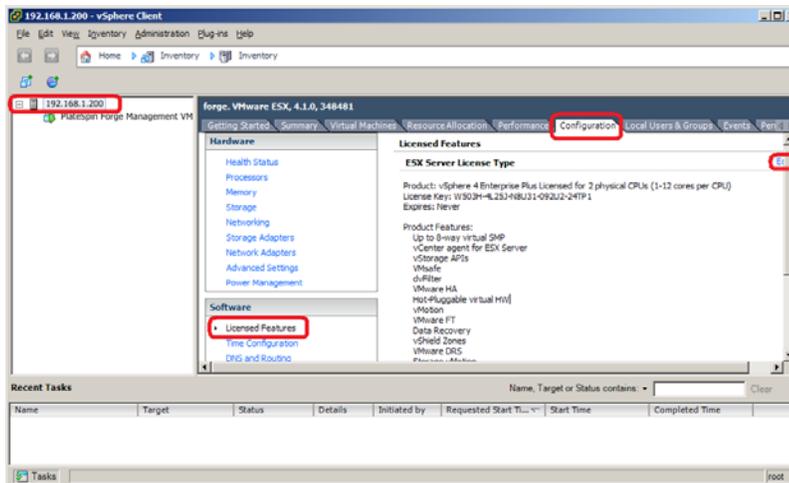
To obtain the OEM Product Keys:

- 1 Contact VMware Support, using one of regional telephone numbers listed on its [Support Contacts page](https://www.vmware.com/support/contacts/us_support.html) (https://www.vmware.com/support/contacts/us_support.html).
- 2 Advise the support representative of the VMware Customer number for NetIQ (supplied in the *Forge 11.1 Appliance Build Kit*) and that you are activating a license for PlateSpin Forge. The representative will provide an ESXi 5.5 OEM product key.
- 3 Write down the ESXi 5.5 OEM product key for later use.

Activating the ESXi 5.5 License

To activate the ESXi 5.5 license for the Forge Management VM:

- 1 In the tree view of the VIC client, select the ESXi server node, click the **Configuration** tab, then click **Licensed Features**.



- 2 In the upper right corner of the client interface, click **Edit** and select **Assign a new license key to this host**.
- 3 In the *Assign License* dialog, enter your license key and click **OK**.
- 4 Click **OK** and exit the vSphere Client program.

6.6 Running the Forge Appliance Configurator

After its components are installed, the Forge Appliance is ready for configuration.

To configure the Forge Appliance after installation:

- 1 On the Windows desktop of the *Forge Management* VM, double-click the **Configure Forge Appliance** shortcut.
The tool runs for about two minutes. The configuration is complete when the system console displays a **SUCCESS** message at the command prompt.
- 2 Shut down the Forge Management VM in Windows (**Settings > Power > Shut down**).

6.7 Backing Up the Factory VM

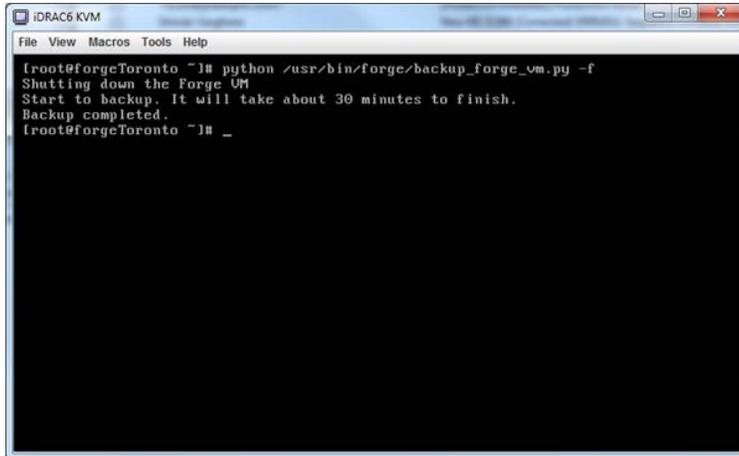
As a precaution after the installation and configuration, you need to back up the Forge Management VM (a.k.a. the “Factory VM”) on the Forge Appliance.

To back up the Factory VM:

- 1 Verify that the Forge Factory VM is shut down.
- 2 At the local console of the Forge Appliance (that is, the Dell Server iDRAC), press Alt+F1.
- 3 Log in as `root` (password: `Password1`).
- 4 At the console prompt, enter the following command:

```
python /opt/platespin/config/backup_forge_vm.py -f
```

Wait for the Python script to complete the factory backup process:



```
iDRAC6 KVM
File View Macros Tools Help
[root@forgeToronto ~]# python /usr/bin/forge/backup_forge_vm.py -f
Shutting down the Forge VM
Start to backup. It will take about 30 minutes to finish.
Backup completed.
[root@forgeToronto ~]# _
```

6.8 Preparing the Appliance for Shipping

When you have completed the license activation for the software on the Forge Management VM and backed it up, you are ready to shut down the appliance and prepare it for shipping.

To prepare the Forge Appliance for shipping to a customer:

- 1 Shut down the appliance.
 - 1a At the local console of the Forge Appliance (that is, the Dell Server iDRAC), press Alt+F2 to open the VMware console.
 - 1b Press F12 to initiate the shutdown sequence.
- 2 After the appliance is halted on the console, remove the *Forge 11.1.0 Installation CD* from the CDROM drive, then power down the server.
- 3 Ensure that the Windows Server 2012 *Certificate of Authenticity (COA)* sticker is affixed to the Forge Appliance.
- 4 Add the *PlateSpin Forge 11.1 Getting Started Guide* (printed manual) to the hardware documentation bundle, ensuring that the guide is plainly visible at the top of the bundle.
- 5 Store the appliance for shipping, or pack the appliance and its documentation appropriately for shipping to the PlateSpin Forge customer.

7 Troubleshooting

This section includes current information that can help you to troubleshoot the setup of the Forge Appliance.

- ♦ [Section 7.1, “Log File Locations,” on page 33](#)
- ♦ [Section 7.2, “Errors Occurring During ESXi Installation,” on page 33](#)
- ♦ [Section 7.3, “Errors Occurred During Forge VM Configuration,” on page 34](#)

7.1 Log File Locations

Use these installation logs to help you diagnose problems with the configuration of the Forge Appliance:

- ♦ The automated ESXi installer writes log files located at `/var/log/messages`.
- ♦ Forge installation logs are located at `/var/log/forge/`.

7.2 Errors Occurring During ESXi Installation

An error has occurred while parsing the installation script

Source: When you are performing the [VMware ESXi configuration](#), you might see the following error:

```
Error (see log for more info):
An error has occurred while parsing the installation
script

error:/vmfs/volumes/mpx.vmhba33:C0:T0:L0/KICK/KS.CFG:
line 37: "/pre" script returned with an error.
```

```
Press <Enter> to continue
```

Explanation: This is a symptom of the hardware model verification script that is failing.

Action: You need to gather information from the installation to understand the corrective actions you need to take.

- 1 Press Alt+F11. This command displays the ESXi alert messages related to the installation failure.
- 2 Press Alt+F1. This command displays the ESXi shell, where you can log in to locate the relevant diagnostic log file:

2a Log in with these credentials:

username: root

password: press Enter for an “empty” password (this is the beginning of the ESXi install, so no root password is set)

2b When logged in, navigate to `/var/log/forge/forge.log`.

This file can provide clues to reasons behind the failure of the install.

7.3 Errors Occurred During Forge VM Configuration

A `FAILURE` error occurred on running Forge Appliance Configurator

Source: When you run the Forge Appliance Configurator, you might not see `SUCCESS`.

Troubleshoot: Check the log file found at the location mentioned in the error message. For example:

```
D:\Program Files\PlateSpin Forge
Server\ForgeApplianceConfigurator\ForgeApplianceConfigurator.log
```

Explanation: The possible causes for this problem could be any of the following:

Possible Cause: The Forge VM disk is not `PLATESPINFORGE01`.

Action: Delete the Forge VM, then deploy the OVF Template, according to the instructions in [Section 6.3.2, “Deploying the OVF Template,” on page 26](#), where the name of the imported VM is `PLATESPINFORGE01`.

Possible Cause: The Forge VM name is not `PlateSpin Forge Management VM`.

Action: Rename the Forge VM to `PlateSpin Forge Management VM`, according to the instructions in [Step 8 of Section 6.3.2, “Deploying the OVF Template,” on page 26](#).

Possible Cause: The Forge ESXi Hypervisor has the Evaluation License.

Action: Follow the instructions in [Section 6.5, “Licensing the ESXi 5.5 Hypervisor,” on page 29](#), and then re-run the Forge Appliance Configurator.

Possible Cause: The Forge Appliance Configurator log reports an `Installing self-signed SSL certificate` event before the exception error. Check the Event Log if the Forge VM’s IIS Admin Service failed to manually or automatically start up because of an `Invalid Signature` error.

Action: We are not sure why this happens, but here are the possible solutions (so far):

- ♦ Delete the Forge VM, then deploy the OVF Template, according to the instructions in [Section 6.3.2, “Deploying the OVF Template,” on page 26](#), where the name of the imported VM is `PLATESPINFORGE01`.
- ♦ The checksums of the copied VM folder might not match. Re-copy the VM folder and repeat [Section 6.3.2, “Deploying the OVF Template,” on page 26](#).