

Appliance Setup and Administration Guide

Novell® PlateSpin® Forge®

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About This Guide

This text provides information about setting up your PlateSpin Forge appliance and performing various maintenance tasks, such as upgrading the Forge software and the appliance host.

- ♦ [Chapter 1, “Setting Up the PlateSpin Forge Appliance,” on page 9](#)
- ♦ [Chapter 2, “Setting up Appliance Networking,” on page 15](#)
- ♦ [Chapter 3, “Using External Storage Solutions with PlateSpin Forge,” on page 17](#)
- ♦ [Chapter 4, “PlateSpin Forge Appliance Maintenance,” on page 19](#)

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.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or submit your comments through the [Novell Documentation Feedback site \(http://www.novell.com/documentation/feedback.html\)](http://www.novell.com/documentation/feedback.html).

Additional Documentation

This text is part of the PlateSpin Forge 3 documentation set. For a complete list of publications supporting this release, visit the [PlateSpin Forge Online Documentation Web Site \(http://www.novell.com/documentation/platespin_forge_3\)](http://www.novell.com/documentation/platespin_forge_3).

Documentation Updates

For the most recent version of this text, visit the product’s Online Documentation Web Site (see [Additional Documentation](#)).

Additional Resources

We encourage you to use the following additional resources on the Web:

- ♦ [Novell User Forum \(http://forums.novell.com\)](http://forums.novell.com): A Web-based community with a variety of discussion topics.
- ♦ [Novell Knowledge Base \(http://www.novell.com/support\)](http://www.novell.com/support): A collection of in-depth technical articles.

Technical Support

- ♦ Telephone (North America): +1-877-528-3774 (1 87 PlateSpin)
- ♦ Telephone (global): +1-416-203-4799
- ♦ E-mail: support@platespin.com

You can also visit the [PlateSpin Technical Support Web site \(http://www.platespin.com/support\)](http://www.platespin.com/support)

Setting Up the PlateSpin Forge Appliance

1

The following sections contain information to help you with the initial setup and configuration of your PlateSpin Forge appliance:

- [Section 1.1, “Before You Begin,” on page 9](#)
- [Section 1.2, “Appliance Setup Procedure,” on page 9](#)
- [Section 1.3, “Post-Setup Tasks,” on page 14](#)

1.1 Before You Begin

In preparation for the initial configuration of your appliance, do the following tasks:

1. **Obtain your license activation code:** For product licensing, you must have a license activation code, e-mailed to the named contact of a PlateSpin Purchase Order. To view your activation code, log in to the [Novell Customer Center Web site \(http://www.novell.com/customercenter/\)](http://www.novell.com/customercenter/), using the same e-mail address specified in your Purchase Order.
2. **Fill in the configuration worksheet:** Record all pertinent information on your printed Configuration Worksheet for future reference. This reference might save you time during the installation and configuration of the appliance. You can also download a copy of the [Configuration Worksheet in PDF \(http://www.novell.com/documentation/platespin_forge_3/pdfdoc/appl/appl_worksheet.pdf\)](http://www.novell.com/documentation/platespin_forge_3/pdfdoc/appl/appl_worksheet.pdf).
3. **Set up the hardware:** Unpack the PlateSpin Forge appliance and use the Components List in the box to ensure that all components have been received. If there is anything missing, contact your PlateSpin representative. Use the hardware manufacturer’s documentation shipped with the unit to mount and connect the hardware, including the monitor and keyboard.

After everything is connected and powered on, proceed to [“Appliance Setup Procedure” on page 9](#).

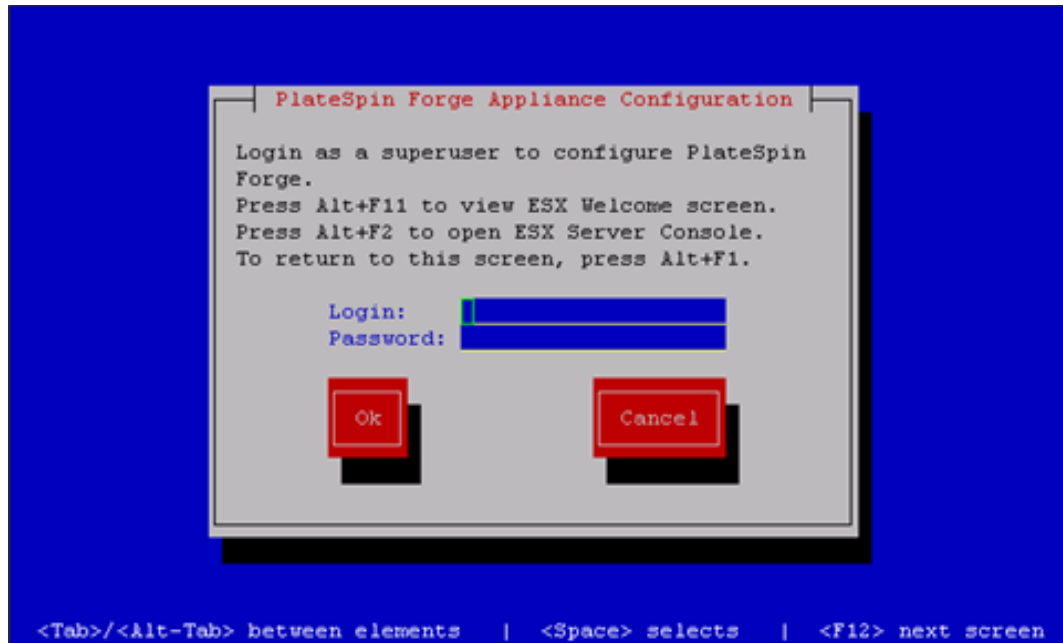
1.2 Appliance Setup Procedure

The initial setup and configuration of the PlateSpin Forge appliance is a one-time procedure. Record all pertinent information on the printed Configuration Worksheet in case you need to contact PlateSpin Technical Support with any setup issues.

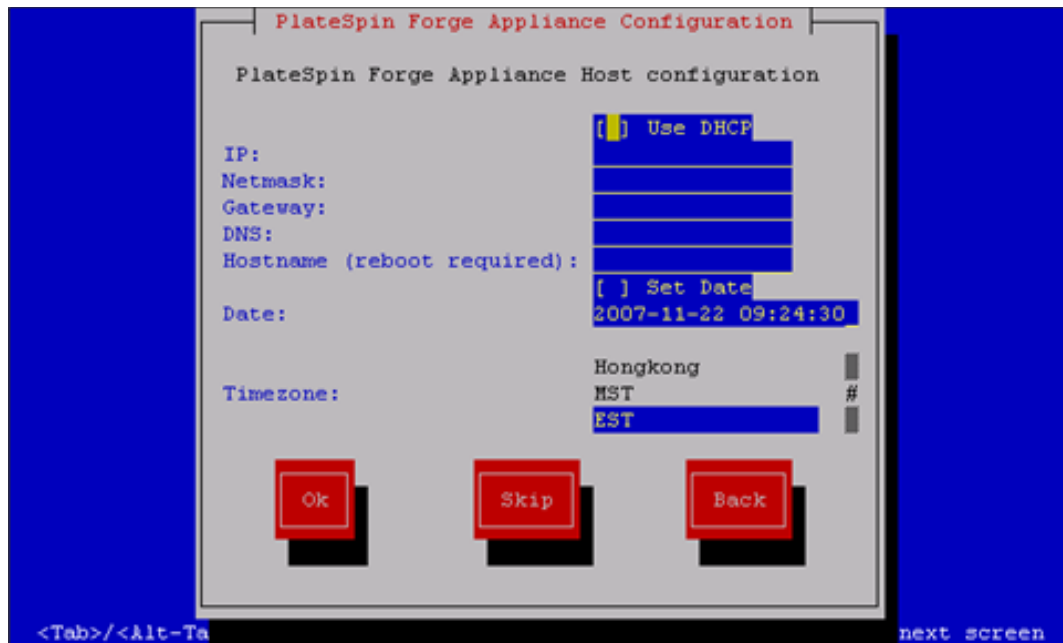
IMPORTANT: Unsupported modifications of the PlateSpin Forge or Management VM, including running other virtual machines on PlateSpin Forge, can impact its performance and might violate the End User License Agreement, voiding your warranty.

To fully configure PlateSpin Forge, you need to configure the hardware and the Management VM (the software).

- 1 Upon initial power-on, ensure that the PlateSpin Forge Configuration dialog box is displayed.



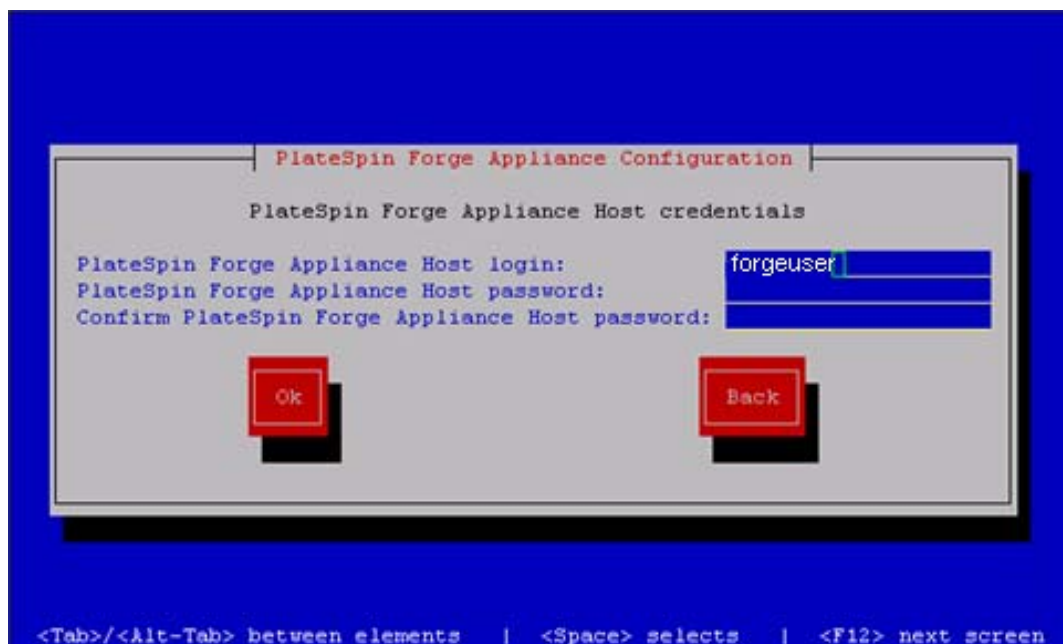
- 2 Type `root` in the *Login* field and `password` in the *Password* field. Select *OK*.
The *change default password* dialog box is displayed. You must change the default password before proceeding.
- 3 Type a new password in the *New password* field and again in the *Confirm Password* field. Select *OK*.
The system confirms the password change.
- 4 Select *OK*.
You are logged out so that you can log back in with your new password.
- 5 Log back in.
The VMware ESX EULA dialog box is displayed. You must accept the end user license before continuing.
- 6 Select *I accept the terms and conditions*, then select *OK*.
See the [VMware Web Site \(http://www.vmware.com\)](http://www.vmware.com) for the latest end user license agreement.
The PlateSpin Forge EULA dialog box is displayed.
- 7 Select *I accept the terms and conditions*, then select *OK*.
The PlateSpin Forge Host Configuration dialog box is displayed.
- 8 Specify the *IP* address, *Netmask*, and *Gateway* IP address you want to assign to the Appliance Host. Optionally, you can also enter a *Hostname*, but you will need to reboot the appliance.



You can also use DHCP, but assigning a static IP address is recommended. It is also highly recommended to assign hostnames to the appliances in multiple-appliance environments to avoid hostname conflicts.

- 9 Select *Set Date*, specify a date and time, select a *Timezone*, then select *OK*.

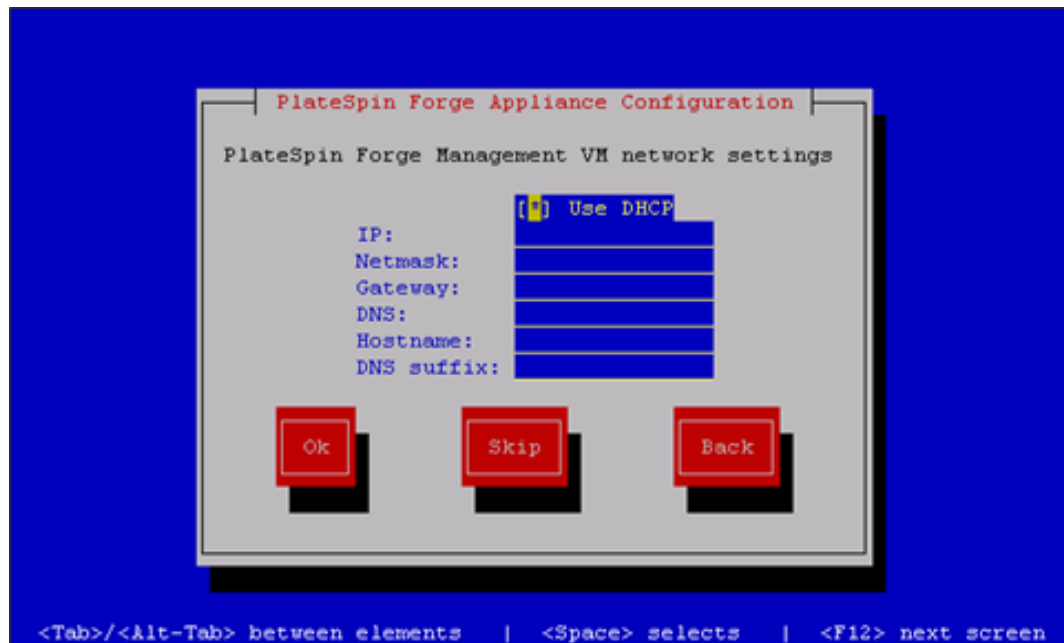
The PlateSpin Forge Host Credentials dialog box is displayed. This is where you enter the credentials you want to use to access the ESX server, which is the hypervisor layer of the appliance.



- 10** Specify a login name in the *PlateSpin Forge Appliance Host login* field, type a password, confirm by retyping the password, then select *OK*.

This creates a new ESX user that is a member of the `root` group. Unlike the *root* user, the new user has SSH permissions on ESX.

The Management VM network settings dialog box is displayed.



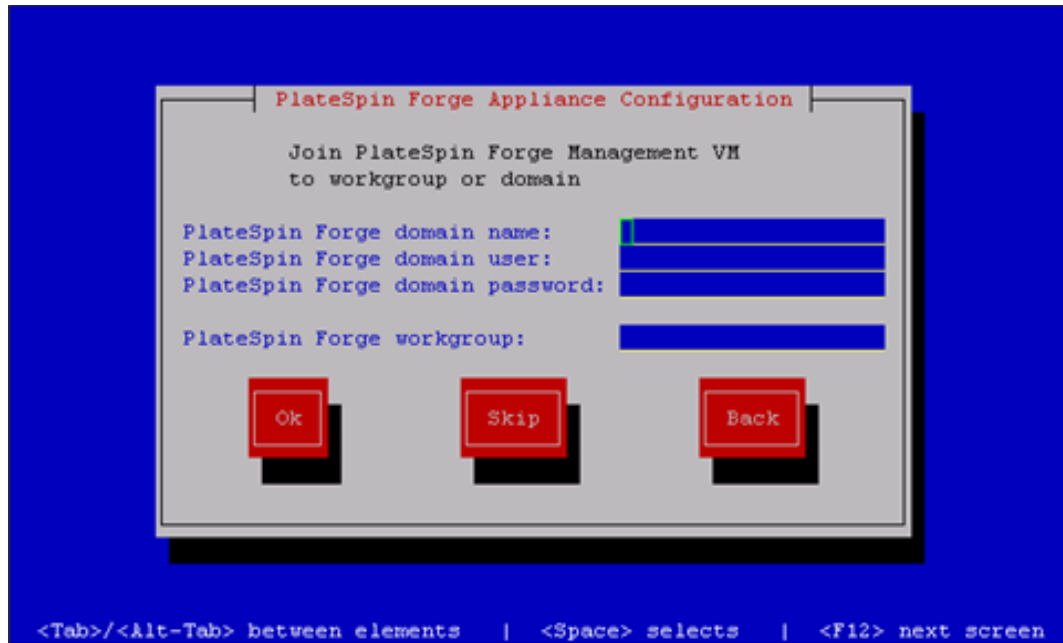
- 11** Deselect *Use DHCP* and provide the Management VM *IP* address, *Netmask*, *Gateway* address, and (optionally) a *Hostname*. The IP address entered here is used to access the PlateSpin Forge Web Client.

You can also use DHCP, but assigning a static IP address is recommended.

- 12** (Optional) Type the name of a DNS server in the *DNS* field and provide a *DNS suffix*.
- 13** Click *OK*.

The Appliance Configuration dialog box prompts whether or not to join a workgroup or domain.

- 14** Select *Yes* to open the Join PlateSpin Forge Management VM to Workgroup or Domain dialog box:



Joining a domain allows you to give selected domain users permissions for the application. See [“Setting Up User Authorization and Authentication”](#) in your *Configuration Guide*.

15 Do one of the following:

- ♦ Type a domain name, user, and password, or type a workgroup. If the domain fields are populated, the *Workgroup* field is ignored. Select *OK*.
- ♦ Leave the fields empty and click *Skip* to proceed to the next step and use *WORKGROUP* as the default workgroup name.

A Configuration Review dialog box is displayed with a summary of the parameters you have selected. Use the information to verify your settings.

If necessary, select *Cancel* to display an error message or to exit the configuration interface. Select *Back* to edit previous settings.

16 Select *OK*.

A configuration progress dialog box is displayed. Configuration can take several minutes. A final dialog box is displayed confirming the configuration’s success or failure. If the process is successful, the dialog box presents a URL you can use to access the PlateSpin Forge Web Client. Record this URL for future use.



17 Select *OK*.

1.3 Post-Setup Tasks

After the initial setup of the appliance, proceed to the following post-setup tasks:

1. (International versions) Set up PlateSpin Forge and your browser for use in a specific supported language. See [“Language Setup for International Versions of PlateSpin Forge”](#) in your *Configuration Guide*.
2. Activate your PlateSpin license. See [“Product Licensing”](#) in your *Configuration Guide*.
3. (Optional) Configure appliance host networking to separate replication or failover traffic from your main production network. See [“Setting up Appliance Networking”](#) on page 15.
4. (Optional) Set up the proper role-based access to Forge. See [“Setting Up User Authorization and Authentication”](#) in your *Configuration Guide*. In particular, make sure that you immediately change the default Administrator password ([“Changing the PlateSpin Forge Administrator Password”](#)).
5. (Optional) Configure SMTP settings and add e-mail notification recipients. For information, see [“Setting Up E-Mail Notifications of Events”](#) in your *Configuration Guide*.
6. (Optional) Add additional data storage capacity to Forge. See [“Using External Storage Solutions with PlateSpin Forge”](#) on page 17.

Setting up Appliance Networking

2

This section provides information about customizing the networking settings of your appliance host.

- ♦ [Section 2.1, “Setting up Appliance Host Networking,” on page 15](#)
- ♦ [Section 2.2, “Relocating PlateSpin Forge and Reassigning Its IP Addresses,” on page 15](#)

2.1 Setting up Appliance Host Networking

Your PlateSpin Forge appliance has six physical network interfaces configured for external access:

- ♦ **External Test Network:** To isolate network traffic when testing a failover workload with the Test Failover feature.
- ♦ **Internal Test Network:** For testing a failover workload in complete isolation from the production network.
- ♦ **Replication Network:** To provide the system with networking designated for ongoing traffic between your production workload and its replica in the Management VM.
- ♦ **Production Network:** For real-life business continuity networking when performing a failover or a failback.
- ♦ **Service Console:** Hypervisor management network. This network is unavailable for selection in the PlateSpin Forge Web Client.
- ♦ **Management Network:** The Forge Management VM network.
- ♦ **Appliance Host Network:** Hypervisor management network. This network is unavailable for selection in the PlateSpin Forge Web Client.

By default, PlateSpin Forge ships with all 6 physical network interfaces mapped to one vSwitch in the hypervisor. You can customize the mapping to better suit your environment. For example, you can protect a workload that has two NICs, one of which is used for production connectivity, and the other strictly for replications. For additional information, see [KB Article 7921062 \(http://www.novell.com/support/viewContent.do?externalId=7921062\)](http://www.novell.com/support/viewContent.do?externalId=7921062).

In addition, to further fine-tune the control of your network traffic, consider assigning a different VLAN ID to each of these individual port groups. This ensures that your production network is not interfered with by traffic from workload protection and recovery operations. See [KB Article 21057 \(http://www.novell.com/support/viewContent.do?externalId=7921057\)](http://www.novell.com/support/viewContent.do?externalId=7921057).

2.2 Relocating PlateSpin Forge and Reassigning Its IP Addresses

Relocating your PlateSpin Forge appliance involves changing the IP addresses of its components to reflect the new environment. These are the IP addresses you specified during the initial setup of the appliance. See [“Appliance Setup Procedure” on page 9](#).

To relocate your PlateSpin Forge appliance:

- 1** Pause all replication schedules, ensuring that at least one incremental has been run for each workload.
 - 1a** In your PlateSpin Forge Web Client, select all workloads, click *Pause*, then click *Execute*.
 - 1b** Ensure that the status *Paused* is displayed for all the workloads.
- 2** Shut down the Forge Management VM. See [“Starting and Shutting Down the Forge Management VM” on page 21](#).
- 3** Shut down the Appliance Host:
 - 3a** At the Forge Console, switch to the ESX Server console by pressing Alt-F2 (to switch back to the Forge Console, press Alt-F1).
 - 3b** Log in as the superuser (`root` and the associated password).
 - 3c** Type the following command and press Enter:

```
shutdown -h now
```
 - 3d** Power the appliance down.
- 4** Move the appliance to the new location, set up the hardware, make the required cable connections, then power the appliance on.
- 5** Update the appliance network configuration:
 - 5a** At the Forge console, log in as the superuser (`root` and the associated password).
 - 5b** Update the *IP address*, *Netmask*, and *Gateway IP address* settings for the appliance host as required. You can use DHCP, but only if a static IP lease is enabled. For multiple appliance environments, assign unique hostnames to the appliances to avoid hostname conflicts.
 - 5c** Update the *IP address*, *Netmask*, *Gateway IP address* and domain affiliation settings for the Forge Management VM as required.
 - 5d** Select *OK*, review the updates, then select *OK* again.
- 6** Update the network settings for the paused replications; in your PlateSpin Forge Web Client, do the following for each paused workload:
 - 6a** Access the Replication Settings section in the paused workload’s protection details.
 - 6b** Update the *Replication Network* value to reflect the network change.
 - 6c** Save the settings.
- 7** Resume replications: in your PlateSpin Forge Web Client, select all workloads, click *Resume Schedule*, then click *Execute*.

Using External Storage Solutions with PlateSpin Forge

3

The following sections contain information to help you with the setup and configuration of external storage for PlateSpin Forge.

- ♦ [Section 3.1, “Using Forge with SAN Storage,” on page 17](#)
- ♦ [Section 3.2, “Adding a SAN LUN to Forge,” on page 18](#)

3.1 Using Forge with SAN Storage

PlateSpin Forge supports existing external storage solutions, such as Storage Area Network (SAN) implementations. Both Fibre Channel and iSCSI solutions are supported. SAN support for Fibre Channel and iSCSI HBAs allows a Forge appliance to be connected to a SAN array. You can then use SAN-array LUNs (Logical Units) to store workload data. Using Forge with a SAN improves flexibility, efficiency, and reliability.

Each SAN product has its own nuances and differences that do not migrate from one hardware manufacturer to the next. This is especially true when considering how these products connect and interact with the Forge Management VM. As such, specific configuration steps for each possible environment and context are beyond the scope of this guide.

The best place to find this type of information is from your hardware vendor or your SAN product sales representative. Many hardware vendors have support guides available describing these tasks in detail. You can find a wealth of information at the following sites:

The [VMware Documentation Web site](http://www.vmware.com/support/pubs/) (<http://www.vmware.com/support/pubs/>).

- ♦ The *Fibre Channel SAN Configuration Guide* discusses the use of ESX Server with Fibre Channel storage area networks.
- ♦ The *iSCSI SAN Configuration Guide* discusses the use of ESX Server with iSCSI storage area networks.
- ♦ The *VMware I/O Compatibility Guide* lists the currently approved HBAs, HBA drivers, and driver versions.
- ♦ The *VMware Storage/SAN Compatibility Guide* lists currently approved storage arrays.
- ♦ The *VMware Release Notes* give information about known issues and workarounds.
- ♦ The *VMware Knowledge Bases* have information on common issues and workarounds.

The following vendors provide storage products that have all been tested by VMware:

- ♦ 3PAR: <http://www.3par.com>
- ♦ Bull: <http://www.bull.com> (FC only)
- ♦ Compellent: <http://www.compellent.com>
- ♦ Dell: <http://www.dell.com>
- ♦ EMC: <http://www.emc.com>
- ♦ EqualLogic: <http://www.equallogic.com> (iSCSI only)

- ♦ Fujitsu/Fujitsu Siemens: <http://www.fujitsu.com> and <http://www.fujitsu-siemens.com>
- ♦ HP: <http://www.hp.com>
- ♦ Hitachi/Hitachi Data Systems (HDS): <http://www.hitachi.com> and <http://www.hds.com> (FC only)
- ♦ IBM: <http://www.ibm.com>
- ♦ NEC: <http://www.nec.com> (FC only)
- ♦ Network Appliance (NetApp): <http://www.netapp.com>
- ♦ Nihon Unisys: <http://www.unisys.com> (FC only)
- ♦ Pillar Data: <http://www.pillardata.com> (FC only)
- ♦ Sun Microsystems: <http://www.sun.com>
- ♦ Xiotech: <http://www.xitech.com> (FC only)


You can also learn more about iSCSI by visiting the Storage Networking Industry Association Web site at http://www.snia.org/tech_activities/ip_storage/iscsi/.

3.2 Adding a SAN LUN to Forge

PlateSpin Forge supports the use of Storage Area Network (SAN) storage, but before Forge can access an existing SAN, a SAN Logical Unit (LUN) needs to be added to Forge's ESX.

To add a SAN LUN to Forge:

- 1 Set up and configure your SAN system.
- 2 Access the appliance host (see “[Downloading the VMware Infrastructure Client \(VIC\)](#)” on [page 19](#)).
- 3 In the Virtual Infrastructure Client (VIC), click the root (top-level) node in the Inventory panel, then click the *Configuration* tab.
- 4 Click the *Add Storage* hyperlink in the upper right.
- 5 In the Add Storage Wizard, click *Next* until you are prompted to specify datastore information.
- 6 Specify a datastore name and click *Next* in the subsequent wizard pages. When the wizard completes, click *Finish*.
- 7 Click *Storage* under *Hardware* to see the Forge datastores. The newly-added SAN LUN should appear in the window.
- 8 Quit the VIC.

In the PlateSpin Forge Web Client, the new datastore won't appear until the next replication runs and the Application Host is refreshed. You can force a refresh by selecting *Settings > Containers* and clicking  near the appliance hostname.

PlateSpin Forge Appliance Maintenance

4

Topics in this section provide information about tasks that deal with PlateSpin Forge appliance maintenance.

- ♦ [Section 4.1, “Accessing and Working with the Forge Management VM in the Appliance Host,” on page 19](#)

4.1 Accessing and Working with the Forge Management VM in the Appliance Host

Occasionally you might need to access the Forge Management VM and perform maintenance tasks as described here or when you are advised to do so by PlateSpin Support.

Use the VMware Virtual Infrastructure Client (VIC) to access the Forge Management VM, including its OS interface and VM settings.

- ♦ [Section 4.1.1, “Downloading the VMware Infrastructure Client \(VIC\),” on page 19](#)
- ♦ [Section 4.1.2, “Launching VIC and Accessing the Forge Management VM,” on page 19](#)
- ♦ [Section 4.1.3, “Starting and Shutting Down the Forge Management VM,” on page 21](#)
- ♦ [Section 4.1.4, “Managing Forge Snapshots on the Appliance Host,” on page 21](#)
- ♦ [Section 4.1.5, “Manually Importing VMs into the Appliance Host’s Datastore,” on page 22](#)
- ♦ [Section 4.1.6, “Guidelines for Applying Security Updates to the PlateSpin Forge Management VM,” on page 22](#)

4.1.1 Downloading the VMware Infrastructure Client (VIC)

Download the client software from the appliance host and install it on a Windows workstation external to PlateSpin Forge.

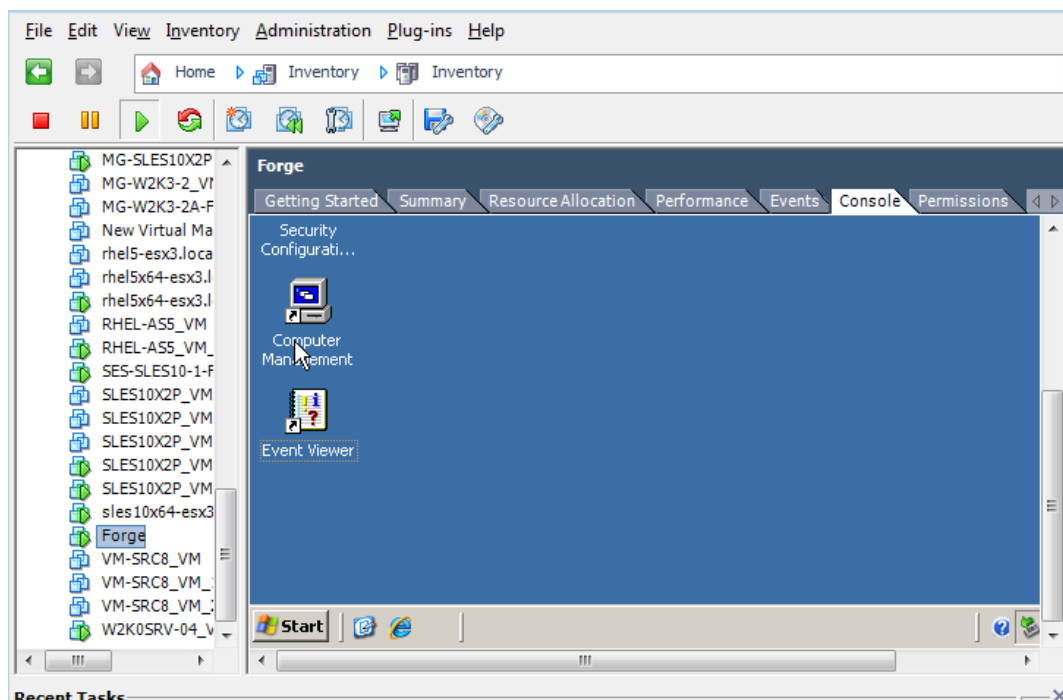
- 1 Open a Web browser and go to the home page of the appliance host (VMware ESX), using the appliance host’s IP address. Ignore the warning related to the security certificate.
- 2 On the VMWare ESX Server’s Welcome page, click the *Download Virtual Infrastructure Client* hyperlink, then follow the instructions to download and install the software.

4.1.2 Launching VIC and Accessing the Forge Management VM

- 1 Clicking *Start > Programs > VMWare > VMware Virtual Infrastructure Client*.
The VMware Virtual Infrastructure Client login window is displayed.



- 2 Specify your root-level credentials and log in, ignoring any certificate warnings.
The Virtual Infrastructure Client opens.



- 3 In the inventory panel at the left, locate and select the *PlateSpin Forge Management VM* item. At the top of the right panel, click the *Console* tab.

The Virtual Infrastructure Client's console area displays the Forge Management VM's Windows interface.

Use the console to work with the Management VM the same way as you would work with Windows on a physical machine.

To unlock the Management VM, click inside the console and press Ctrl+Alt+Insert.

To release the cursor for working outside the Virtual Infrastructure Client, press Ctrl+Alt.

4.1.3 Starting and Shutting Down the Forge Management VM

Occasionally you might need to shut down and then restart the Forge Management VM, such as when you relocate the appliance.

- 1 Use the VMware Virtual Infrastructure Client to access the Forge Management VM host. See [“Downloading the VMware Infrastructure Client \(VIC\)” on page 19](#).
- 2 Use the standard Windows procedure to shut down the VM (*Start > Shut Down*).

To restart the Management VM:

- 1 In the inventory panel at the left, right-click the *PlateSpin Forge Management VM* item and select *Power on*.

4.1.4 Managing Forge Snapshots on the Appliance Host

Occasionally you might need to take a point-in-time snapshot of your management VM, such as when you upgrade Forge software or when carry out troubleshooting tasks. You might also need to remove snapshots (recovery points) to free storage space.

- 1 Use the Virtual Infrastructure Client to access the appliance host. See [“Downloading the VMware Infrastructure Client \(VIC\)” on page 19](#).
- 2 In the inventory panel at the left, right-click the *PlateSpin Forge Management VM* item and select *Snapshot > Take Snapshot*.
- 3 Type a name and a description for the snapshot, then click *OK*.

To revert the management VM to a previous state:


- 1 In the inventory panel at the left, right-click the *PlateSpin Forge Management VM* item and select *Snapshot > Snapshot Manager*.
- 2 In the tree representation of the VM states, select a snapshot, then click *Go to*.

To remove snapshots that represent recovery points:

- 1 In the inventory panel at the left, right-click the *PlateSpin Forge Management VM* item and select *Snapshot > Snapshot Manager*.
- 2 In the tree representation of the VM states, select a snapshot, then click *Remove*.

4.1.5 Manually Importing VMs into the Appliance Host's Datastore

Use this procedure to manually import a VM into the appliance host's datastore. You might want to consider this option when you want your recovery workload to be created differentially (see [“Initial Replication Method \(Full and Incremental\)”](#) in your *User Guide*).

- 1 At the production site, create a VM (ESX 3.5 and later) from your production workload (for example, by using PlateSpin Migrate) and copy the VM files from the ESX host's datastore to portable media, such as a portable hard drive or a USB flash drive. Use the Datastore Browser of the client software to browse and locate the files.
- 2 At the disaster recovery site, attach the media to a workstation that has network access to Forge and has the Virtual Infrastructure Client Installed (VIC). See [“Downloading the VMware Infrastructure Client \(VIC\)”](#) on page 19.
- 3 Use the VIC's Datastore Browser to access the Forge datastore (*Storage1*) and upload the VM files from the temporary media. Use the uploaded VM to register it with the appliance host (right-click > *Add to Inventory*).
- 4 Refresh the PlateSpin Forge inventory (in the PlateSpin Forge Web Client, click *Settings* > *Containers*, then click  adjacent to the appliance host).

4.1.6 Guidelines for Applying Security Updates to the PlateSpin Forge Management VM

This section provides general guidelines for applying security patches to the Forge Management VM.

- 1 During a maintenance window, access the Forge Management VM by using the VMware Virtual Infrastructure Client. See [“Downloading the VMware Infrastructure Client \(VIC\)”](#) on page 19.
- 2 From within the Forge Management VM's Windows interface, check for security updates from Microsoft.
- 3 Use the PlateSpin Forge Web Client to put PlateSpin Forge into maintenance mode by pausing all replication schedules and ensuring that any incomplete replications are complete.
- 4 Take a snapshot of the Forge Management VM. See [“Managing Forge Snapshots on the Appliance Host”](#) on page 21.
- 5 Download and install the required security patches. When the installation complete, reboot the Forge Management VM.
- 6 Use the PlateSpin Forge Web Client to resume replications paused in [Step 3](#) and verify that replications are working properly.
- 7 Remove the snapshot of the Forge Management VM that you took in [Step 4](#). See [“Managing Forge Snapshots on the Appliance Host”](#) on page 21.

Upgrading PlateSpin Forge

5

This section provides information about upgrading your PlateSpin Forge appliance.

- ♦ [Section 5.1, “Before Starting the Upgrade,” on page 23](#)
- ♦ [Section 5.2, “Summary of Upgrade Tasks,” on page 23](#)
- ♦ [Section 5.3, “Forge Upgrade Procedure,” on page 23](#)
- ♦ [Section 5.4, “Appliance Host \(ESX\) Upgrade,” on page 24](#)

5.1 Before Starting the Upgrade

Before starting the upgrade, make sure that you have the following prerequisites:

- ♦ The Forge setup installation executable.
- ♦ The VMware ESX CD.
- ♦ IP addresses and appropriate credentials for:
 - ♦ The Forge appliance (used for the Forge Web Client Interface and the Forge Management VM)
 - ♦ The Forge Appliance Host (VMware ESX server)
- ♦ The VMware Virtual Infrastructure Client. See [“Downloading the VMware Infrastructure Client \(VIC\)” on page 19](#).

5.2 Summary of Upgrade Tasks

To upgrade your Forge appliance, you need to perform the following tasks in order:

1. Ensure that no replications are currently running or are scheduled to run during the upgrade.
2. Save the current state of the management VM by taking a snapshot.
3. Update the Forge Management VM with the latest Microsoft .NET Framework software and any security patches.
4. Copy and run the required setup executable locally within the Forge Management VM.
5. Verify proper operation of the appliance after the upgrade.

5.3 Forge Upgrade Procedure

This phase involves pausing all scheduled replications of protected workloads and waiting for running replications to complete.

- 1 Use the PlateSpin Forge Web Client to pause all scheduled replications. Wait for any replications that are underway to complete. Ensure that the replication status of protected workloads is *idle* in the Replication Status column.
- 2 Power off the Forge Management VM. See [“Starting and Shutting Down the Forge Management VM” on page 21](#).

- 3 Back up the Forge Management VM by creating a snapshot. See [“Managing Forge Snapshots on the Appliance Host” on page 21](#).
 - 4 For Forge 1.x appliances, disable Independent mode for VM Hard Disk 2:
 - 4a In the Inventory panel at the left, right-click the Forge Management VM and select *Edit Settings*.
The Virtual Machine Properties window is displayed.
 - 4b On the *Hardware* tab, click *Hard Disk 2*.
 - 4c At the right, clear the *Independent* check box.
 - 5 Power on the Forge Management VM, access it with the VMware Infrastructure Client, and do the following:
 - 5a Install the latest Microsoft .NET Framework software. Forge 3 requires at least [Microsoft .NET Framework 3.5, SP1](#) (<http://www.microsoft.com/downloads/details.aspx?FamilyId=AB99342F-5D1A-413D-8319-81DA479AB0D7>).
 - 5b Update Windows, applying any available security updates.
 - 5c Reboot the Forge Management VM.
 - 6 Run the Forge setup installation executable within the Forge Management VM and follow the on-screen instructions.
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- NOTE:** In some situations the installation program might fail to automatically re-import data that it exports during the upgrade process. If this happens, use the `PlateSpin.ImportExport.exe` utility to recover this data from your server host's `\Documents and Settings\<user_profile>\Application Data\PlateSpin` directory. See [KB Article 7921084](#) (<http://www.novell.com/support/viewContent.do?externalId=7921084>).
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- 7 Use the PlateSpin Forge Web Client to resume all paused replications.
 - 8 Use the Virtual Infrastructure Client to remove the snapshot created in [Step 3](#).

IMPORTANT: Drivers that were uploaded to the PlateSpin Forge driver database for failback are not preserved. Any such drivers need to be uploaded again after the upgrade.

5.4 Appliance Host (ESX) Upgrade

NOTE: To upgrade the Appliance Host (ESX) you need the VMware ESX ISO.

- 1 Make sure all protections are paused and all VMs are shut down, including the Forge Management VM.
- 2 Back up the Forge Management VM. See [“Managing Forge Snapshots on the Appliance Host” on page 21](#)
- 3 If your Forge appliance is equipped with DRAC, proceed to [“Preparing to Upgrade DRAC-equipped Appliance Hosts” on page 25](#). If your Forge appliance does not have DRAC, skip to [“Preparing to Upgrade Appliance Hosts without DRAC” on page 25](#).

5.4.1 Preparing to Upgrade DRAC-equipped Appliance Hosts

- 1 Connect to the DRAC by opening Internet Explorer and entering the DRAC IP Address in the form `https://DRAC_IP`.
- 2 Log in using the username `root` and the password `calvin`.
- 3 Click the *Media* tab at the top of the page, then click *Configuration* under the tabs.
- 4 Click the *Attach Virtual Media* check box, then click *Apply Changes*.
- 5 Click *Virtual Media* under the tabs.
- 6 Under *CD/DVD-ROM Drive*, select *ISO Image File*.
- 7 Click *Browse* and locate the upgrade ISO.
- 8 Select the ISO image and click *Connect* at the bottom of the page.
Skip to [“Performing the Appliance Host Upgrade” on page 25](#).

5.4.2 Preparing to Upgrade Appliance Hosts without DRAC

- 1 Burn the VMware ESX ISO to a CD.
- 2 Insert the Upgrade CD you just created into the Forge Appliance CD-ROM drive and open the console.
Proceed to [“Performing the Appliance Host Upgrade” on page 25](#).

5.4.3 Performing the Appliance Host Upgrade

- 1 Click the *Console* tab at the top of the page and then click *Connect* at the bottom of the page.
The Forge getty is displayed.
- 2 Press Alt+F2 to switch to an ESX login prompt and log in as `root`.
- 3 Type the `reboot` command and press Enter.
The ESX server performs a soft restart and switches back to the Forge configuration prompt.
- 4 When the Forge appliance reboots, press F11.
For DRAC-equipped Appliance Hosts, proceed to [Step 5](#). For Appliance Hosts without DRAC, skip to [Step 6](#).
- 5 At the Boot Device Menu, select `VIRTUAL CDROM`.
This boots the Forge appliance from the ISO you attached in [“Preparing to Upgrade DRAC-equipped Appliance Hosts” on page 25](#).
- 6 At the Boot Device Menu, select `IDE CD ROM device`.
This will boot the Forge appliance from the CD you burned and inserted in the Forge appliance in [“Preparing to Upgrade Appliance Hosts without DRAC” on page 25](#).
- 7 When the ESX installation screen is displayed, press Enter.
The graphical interface is displayed.
- 8 When prompted, skip the CD Media Test.
- 9 When the ESX Installer screen is displayed, click *Next*.
- 10 Select the appropriate keyboard type and click *Next*.

- 11 Click *Next* at the mouse selection screen.
- 12 Select *Upgrade* when prompted for the installation type.
- 13 Accept the license agreement.
- 14 In the Advanced Option screen, click *Next*.

IMPORTANT: Do not change the bootloader configuration.

- 15 In the About to Upgrade screen, click *Next*.
- 16 When the upgrade is complete, click *Finish*.
The Forge appliance will reboot. Do not touch the keyboard until the reboot is complete.
- 17 For Appliance Hosts without DRAC, remove the CD from the Forge appliance CD-ROM drive. For DRAC-equipped Appliance Hosts, proceed to [“DRAC-Equipped Appliance Host Upgrade Cleanup” on page 26](#).

5.4.4 DRAC-Equipped Appliance Host Upgrade Cleanup

- 1 Close the DRAC console window.
- 2 Switch back to the Internet Explorer window displaying the DRAC page you connected to in [“Preparing to Upgrade DRAC-equipped Appliance Hosts” on page 25](#) and click the *Console* tab at the top of the page. Verify that the window has timed out.
- 3 Log in using the username `root` and the password `calvin`.
- 4 Click the *Media* tab, then click *Disconnect* at the bottom of the page to disconnect the ISO from the DRAC.
- 5 Click *Configuration* under the tabs.
- 6 Deselect the *Attach Virtual Media* check box and click *Apply Changes* at the bottom of the page.
- 7 Click *Log Out* at the top right corner of the window and close the Internet Explorer window.