

SpinServer® 3300

Quick Start Guide

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Part number 215-00928
April 2004

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The *SpinServer® 3300 Quick Start Guide* provides descriptions of tasks that are required to get a SpinServer system up and running quickly.

System Components

This document is designed to set up a system with the following components that have been previously installed in an equipment rack:

- Two SpinServer 3300 chassis to create a cluster
- One SpinStor® RAID disk enclosure per cluster node
- One SpinStor JBOD disk enclosure per cluster node
- One UPS per SpinServer
- One AC transfer switch (ATS) per UPS
- Two Ethernet switches, one dedicated to clusters and one dedicated to the management network

When setting up SpinServer system equipment, follow all safety warnings and precautions as described in the *SpinServer 3300 Installation Guide*.

System Subnets

It is recommended that you have three subnets available for system operations, one for each of the following purposes:

- A physically secure, dedicated network to connect to the cluster ports on the SpinServers
- A physically secure network to connect to the management ports on the SpinServers
- A general corporate network that is connected to the network ports on the SpinServers for access to client data

Spinnaker Documentation

For additional information on each of the tasks listed in this guide, see the following Spinnaker documentation:

- *SpinServer 3300 Installation Guide*
- *SpinFS Administration Guide*
- *SpinFS Administration Reference*
- *SpinServer Release Notes*

Documentation is available in PDF format and can be accessed from the SpinManager™ GUI or from the Spinnaker CD. To access the documentation from the CD, open the *root_directory/SpinDocs/index.html* file in a web browser, where *root_directory* is the root directory of the CD.

Technical Assistance Center

You can contact the Technical Assistance Center (TAC) 24 hours a day and seven days a week. Use the three methods listed here.

Internet

Access TAC from the home page at
http://www.spinnakernet.com/support/support_home.html

Email

Send email queries to Spinnaker TAC at: support@spinnakernet.com

Phone

In North America, call Spinnaker TAC toll free at:

1-866-SPINNET or 1-866-774-6638

After you are connected, press 1 through the automated attendant to reach TAC.

Outside North America, call:

+1-412-968-SPIN or +1-412-968-7746

Step 1: Obtaining Configuration Information

Before installing SpinServer software, you must obtain configuration information from your network administrator. To complete Step 1, use the following tables to enter the information that is needed during your configuration process.

SpinServer Configuration Information

The following information is needed for each of the SpinServers in your cluster.

Important: The SpinServer ID cannot be changed after you have entered it during the initial software installation process.

SpinServer ID	
Management IP address (if not using DHCP)	
Management netmask (if not using DHCP)	
Management default gateway IP (if not using DHCP)	
Management primary name server (if not using DHCP)	
Server IP address 1	
Server netmask 1	
Server IP address 2 (optional)	
Server netmask 2 (optional)	
Cluster IP address 1	
Cluster IP address 2 (optional)	
Cluster netmask	
Cluster broadcast	

CIFS Clients Configuration Information

To enable the SpinServer for the CIFS protocol, you must obtain configuration information from your network administrator. Use the following table to enter the information that is needed for that process.

CIFS domain name or ID	
CIFS domain's WINS server IP address	
CIFS domain's primary domain controller name	
CIFS domain's primary domain controller IP address	
CIFS domain's backup domain controller name	
CIFS domain's backup domain controller IP address	
Virtual server name or ID	
Visible domain names or IDs	
NetBIOS name	
Node type	
Share name or ID	
Share's directory path	

NFS Clients Configuration Information

If your SpinServer system is deployed in an environment with NIS, you can configure the domain on the SpinServer to take advantage of NIS.

Use the following table to enter the information that is needed for that process.

NIS domain name	
NIS server	

Step 2: Attaching System Cables

The cables needed for connecting SpinServer system components to one another and to the subnets are described in this step. Proper system connectivity is needed for successful software installation and component configuration. The necessary system cable connections are described and illustrated on the following pages.

SpinServer and SpinStor Connections

Connect the SpinServers as follows:

- Console—Connect the SpinServer console port (COM1) to a console, configured for ANSI-9600-8N1, by null modem cable.
- UPS—Connect the SpinServer COM2 port to the APC UPS Computer Interface Port. See the *APC Smart-UPS User's Manual* to locate the proper connector on the UPS. Use the cable supplied with the UPS.
- Management, client, and cluster subnets—Connect these ports by Ethernet cables to the appropriate Ethernet switches.
- RAID enclosures—Use optical-fiber Fibre Channel cables to attach a Fibre Channel port on the SpinServer to a Fibre Channel port on the SpinStor RAID enclosure.
- Tape devices—To attached tape devices to the SpinServer, connect a Fibre Channel port on the SpinServer to the Fibre Channel bridge with a Fibre Channel cable. Connect the tape library or tape drive to the Fibre Channel bridge with a Fibre Channel cable. If the tape library is a Fibre Channel library, then a bridge is not required. The tape library can also be attached to a Fibre Channel switch.

In the example used in this guide, each SpinStor RAID enclosure is connected to one SpinStor JBOD enclosure by copper Fibre Channel cables. The SpinStor JBOD has two pairs of disk ports. One of each pair must be connected to the SpinStor RAID disk ports with the copper Fibre Channel cable.

Before connecting the JBOD enclosure to the RAID enclosure, set the disk ID on each JBOD by setting the least significant bit (LSB) to 0 and the most significant bit (MSB) to 1. See the *SpinServer 3300 Installation Guide* for details.

Important: When attaching cables to the SpinServer, you must provide a service loop of 3 feet (1 meter) to allow the SpinServer to be extended the full length of the installation slides for servicing components on the interior of the enclosure.

SpinServer System Physical Connections

The following illustration demonstrates the physical connections for the SpinServer system used in the example for this guide.

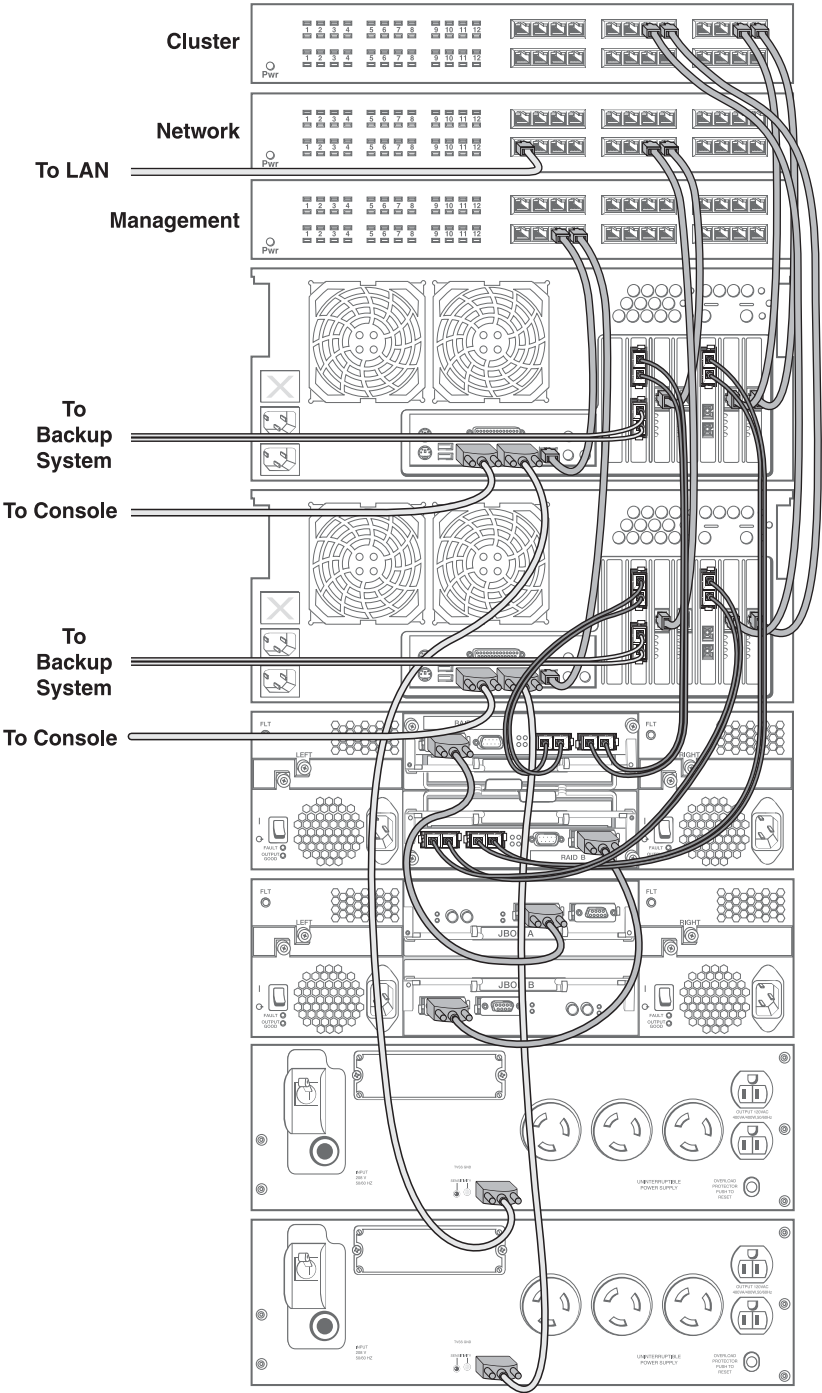


Figure 1. System cable connections for SpinServer components

Step 3: Attaching Power Cords

When connecting SpinServer system equipment to your site power system, follow all electrical warnings and precautions as described in the *Spinnaker Networks SpinServer 3300 Installation Guide*.

Attaching Power Cords

The power connections for the SpinServers and the RAID and JBOD enclosures must provide power redundancy for these system components, as follows:

- RAID and JBOD power connections—For each RAID and JBOD enclosure, the two power cords must be connected to AC power outlets on different circuits.
- SpinServer power Connections—For each SpinServer, the SpinServer must be connected to a UPS with one of the two power cords. That UPS must be connected to an AC transfer switch (ATS). The ATS must be connected to AC power outlets on two separate circuits.

Important: Only the SpinServer is connected to the UPS. Do not connect any other equipment to the UPS.



Caution: You must connect the SpinServer power cord to the same UPS that is connected to the SpinServer COM2 port. Failure to make these connections can result in the loss of data.

Illustration of System Power Connections

The following illustration demonstrates basic power connectivity for a possible SpinServer system power configuration. This figure shows SpinServer 4100 servers and SpinStor 200 disk enclosures; however, the power connections shown are also valid for a system with SpinServer 3300 servers and SpinStor disk enclosures.

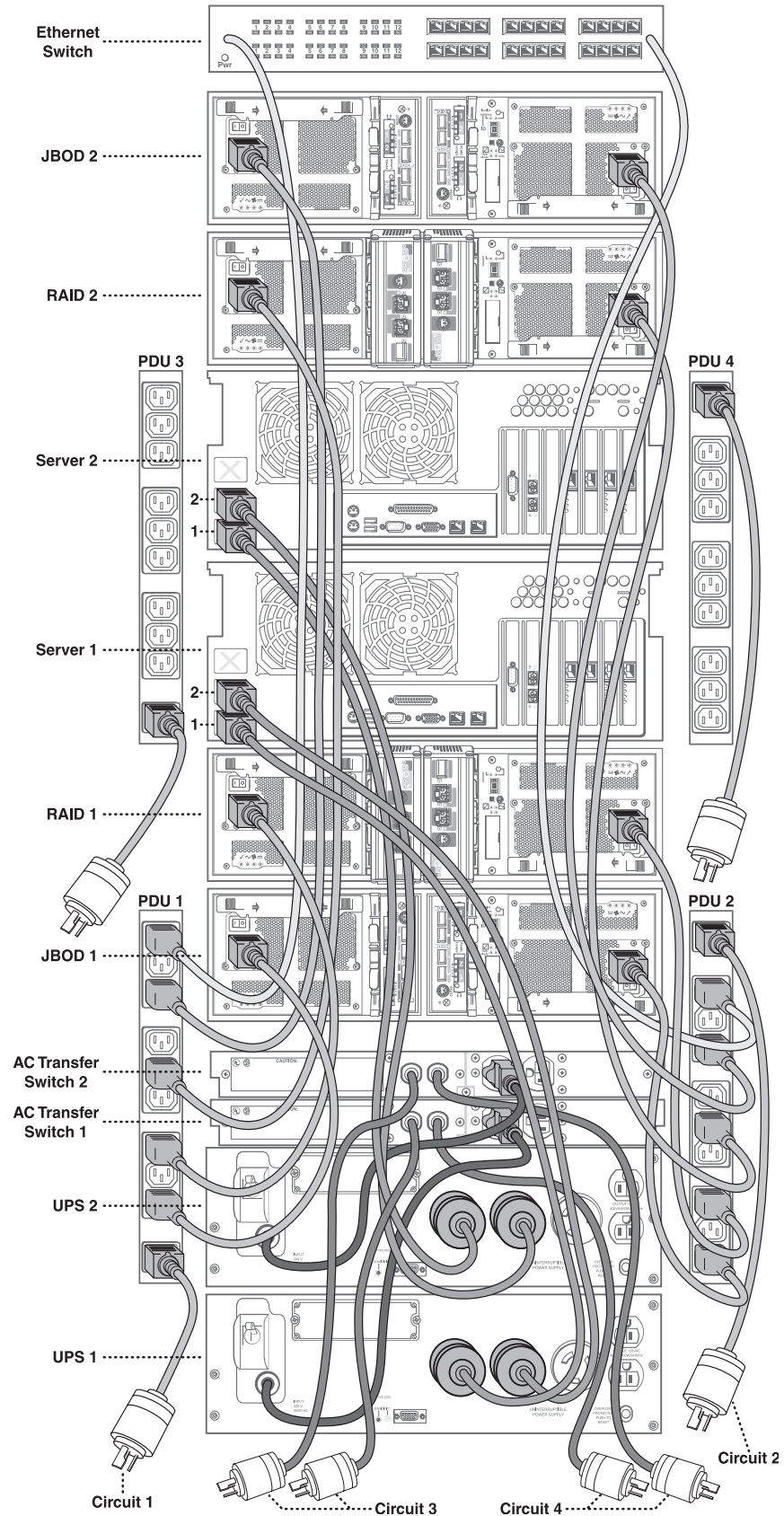


Figure 2. One possible power configuration for SpinServer system components

Step 4: Initializing the System

Power up the SpinServer system components and check component connectivity before the installation of the SpinFS™ software on the SpinServer.

Powering Up System Components

Power up the SpinServer system components in the following order:

1. UPS
2. SpinStor JBOD
3. SpinStor RAID
4. SpinServer

Note: During the power-up sequence for the SpinServer, place the Spinnaker installation CD into the CD drive. From the console, you can monitor the SpinServer startup sequence as it progresses.

Installing SpinServer Software

Initial installation of the SpinFS software on the SpinServer is described in this section. Check the current version of the *Release Notes* for any revisions to this procedure.

Important: You enter the SpinServer ID at the time you initially install the software. The SpinServer ID can be an IP address (for example, 10.1.1.14) or a name (for the examples used in this document, Server1). The name or ID of the SpinServer is propagated from that initial installation of the software into the SpinManager management framework. To prevent confusion and potential loss or misplacement of data, the SpinServer IDs you choose must be orderly and easily recognizable by all system administrators who maintain your SpinServer system. Any naming system can be chosen for your system, *but the IDs for the SpinServers must be unique within a cluster*. After the ID for a SpinServer has been set, you cannot modify the server name or ID or host name. To do so

invalidates the failover port designation for the SpinServer and can result in the loss of data.

Note: To assure that all system components work together properly, one cluster port must be configured even if only a single SpinServer is being installed. Even if you intend to use only one of the cluster ports, it is *strongly recommended* that you configure both cluster ports at initial installation of the software.

The serial number of a SpinServer is stored internally. During the installation of the SpinServer software, the SpinServer automatically restarts. At that time, the serial number is populated into the management framework.

Initial Installation of Software

For the initial installation of the Spinnaker SpinFS software, use the following procedures:

Note: If you are configuring the management port on the SpinServer by using a static IP address, you must enter the IP addresses manually and you need to have the following information available before you begin the software installation process. Obtain this information from your network administrator.

- Management port IP address
- Netmask
- Default gateway IP address
- Primary name server IP address

1. If the SpinServer is on, power it down by pressing and holding the power button until the LEDs on the front panel power supply units turn red. (This takes about 5 seconds.)
2. When the SpinServer is off, press and release the power button one time to turn it on again and begin to power up the SpinServer. During this process, place the Spinnaker installation CD into the CD drive. From the serial console, you can monitor the initialization processes.

Note: Make sure that the CD is in place before the SpinServer searches for the drives from which to boot.

3. The **Welcome** screen displays the End User License Agreement.
4. To continue reading the End User License Agreement, page through the the screens by following the instructions at the bottom of each screen (for example, to read the second End User License Agreement screen, press **Ctrl-F 2**).
5. After the final End User License Agreement screen, the following screen is displayed: Installing the Spinnaker software constitutes acceptance of the End User License Agreement and will cause all data on the local disk drives to be destroyed. Please enter **install** to begin the install process. Type **install** and press **Enter** to continue the installation process.

-
6. As the initialization continues, on-screen messages indicate that the system is creating RAID sets, formatting file systems, installing software packages, and completing other procedures for configuring the system.
 7. The SpinServer automatically restarts and ejects the CD. Remove the CD from the drive.



Caution: The Spinnaker CD must be removed from the CD drive. If the SpinServer loses power and the CD is in the drive, the SpinServer installation process can be restarted when power to the SpinServer is restored. If installation of the software is restarted and completed, all data that is stored on the SpinServer is lost.

8. Enter the clock settings into the system as shown in the following screen. Select the settings for your region and tab to **OK**. Press the space bar.

Note: The default setting for the hardware clock is GMT. Do not change this setting.

9. The initialization process prompts you for the name or ID of the SpinServer as shown in the following screen. After you enter the SpinServer ID into the **Hostname** field, tab to the **OK** box and press the space bar.
10. After entering the SpinServer ID, configure the management port for the SpinServer. If the management port is to be configured by using DHCP, tab to **OK** and press the space bar. If you are manually entering the network configuration information, complete the fields with the configuration information provided by your network administrator. When finished, tab to **OK** and press the space bar.
11. When the installation of the SpinFS software is complete, the SpinServer presents the login prompt. At the login prompt, type **admin**. At the Password prompt, type **admin**.
12. Your system is now ready for configuration.

Note: The SpinServer shows local disk activity for several minutes as it mirrors the SCSI drives. This is normal behavior and does not interfere with the configuration or operation of the SpinServer system components.

Changing the Login Password

After the initial installation of the SpinFS software on your SpinServer, you can change the user password by following these steps:

1. Use secure shell (SSH) to log in as root.
2. Use the **passwd** command (for example, **passwd admin**) to enter a new password.
3. Enter the password a second time to confirm the password.

Changing the Root Password

After the initial installation of the SpinFS software on your SpinServer, you can change the root password by following these steps:

1. Use secure shell (SSH) to log in as root.
2. Use the **passwd** command (for example, **passwd root**) to enter the new root password.
3. Enter the password a second time to confirm the password.

Step 5: Configuring the System

The following procedures provide an example for configuring the SpinServer system. This configuration example is for a mixed NFS and CIFS environment. The example uses the SpinManager GUI for each configuration procedure. See the *Administration Guide* for more information about SpinManager and these procedures.

Configuring the SpinServer System

To configure a typical SpinServer system, follow the procedures given below. Check the current version of the *Release Notes* for any revisions to these procedures.

Note: The IP addresses, names, and IDs that are used in this section are examples that are given for each of the configuration tasks. The IP addresses, names, and IDs for your system are different.

Creating a New Server Instance

To create a new server instance for the first SpinServer in a cluster, use the GUI's **SpinCluster** node: **SpinCluster** → **SpinServers** → **Create Cluster**. Every SpinServer is part of a cluster, and although the cluster can contain only a single SpinServer, every SpinServer must be entered into a cluster before any other system management task is undertaken.

Important: This command must not be used for any purpose other than to create a new cluster. If you mistakenly run the **Create Cluster** command in attempt to add a SpinServer to an existing cluster, you must reinstall the SpinServer (or completely delete all configuration data) to undo the operation. Before you reinstall the SpinServer or delete any configuration information, contact the Spinnaker Networks Technical Assistance Center.

You need the following information to complete the procedure.

- **SpinServer ID:** Server1
- **Cluster name:** Cluster1
- **Cluster IP address 1:** 192.168.66.1
- **Cluster IP address 2** (optional): 192.168.66.2
- **Cluster netmask:** 255.255.0.0

-
- **Cluster broadcast:** 192.168.255.255

Adding a Second SpinServer to the Cluster

To add a second SpinServer to the cluster, use the GUI's **SpinCluster** node: **SpinCluster** → **SpinServers** → **Join Cluster** with the following information.

- **Cluster host name** (the cluster IP address of an active SpinServer): 192.168.66.1
- **Cluster netmask:** 255.255.0.0
- **Cluster IP 1:** 192.168.66.3
- **Cluster IP 2:** 192.168.66.4
- **Cluster broadcast IP:** 192.168.255.255

Creating a RAID Set

To create a RAID set, use the GUI's **RAID** node: **RAID** → **RAID Sets** → **New** with the following information.

- **RAID level:** 5
- **Strip size:** 16
- **Disk IDs:** r0d1, r0d2, r0d5, r0d6, r0d9

Creating a Storage Pool

A single storage unit represents a single external RAID set or a single JBOD disk that has been used to create the storage unit.

Note: Depending on the number of physical disks that are included in the RAID sets that are being used, this command can take several minutes to complete.

To create a storage pool, use the GUI's **Storage Pools** node: **Storage Pools** → **Storage Pools** → **New** with the following information.

- **Storage pool name:** spl
- **Configuration of storage pool:** Stripe
- **Storage units (RAID sets) assigned to storage pool:** sul

Specifying a NIS Domain

To specify a NIS domain, use the GUI's **SpinAccess** node: **SpinAccess** → **NFS** → **NIS Domains** → **New** with the following information.

- **NIS domain name:** acmebricks.com
- **NIS servers:** 10.2.2.1, 10.3.3.1

Note: To configure a NIS domain at this point, it is assumed that the NIS server's IP address is on the same subnet as the management port (mgmt0). If the NIS server's

subnet is the same as the subnet connected to the network ports (serv0 and serv1), then a virtual server and a bound virtual interface must first be configured for the subnet. See “Creating a Virtual Server” on page 15 and “Creating a Virtual Interface” on page 15 for details.

Defining a CIFS Domain

Windows NT 4.0 and Windows 2000 CIFS domains are supported. Add any domains that CIFS users need to access the SpinServer. To create a CIFS domain, use the GUI's **SpinAccess** node: **SpinAccess** → **CIFS** → **Domains** → **New** with the following information.

- **Domain name:** ENG
- **WINS server:** 10.1.1.116
- **Primary Domain Controller (PDC) name:** STORM
- **Primary Domain Controller (PDC) IP address:** 10.1.1.116
- **Backup Domain Controller (BDC) 1 name:** RAIN
- **Backup Domain Controller (BDC) 1 IP address:** 10.1.1.118

Note: To configure a CIFS domain at this point, it is assumed that the PDC's IP address is on the same subnet as the management port (mgmt0). If the PDC's subnet is the same as the subnet connected to the network ports (serv0 and serv1), then a virtual server and a bound virtual interface must first be configured for the subnet. See “Creating a Virtual Server” on page 15 and “Creating a Virtual Interface” on page 15 for details.

Creating a Virtual Server

To create a virtual server and set the ownership of its root directory as a NFS user and group identity, use the GUI's **Virtual Servers** node: **Virtual Servers** → **Servers** → **New** with the following information.

- **Virtual server name:** vs1
- **Storage pool for root virtual file system (VFS):** sp1
- **Minimum authentication level:** none
- **Export ruleset name:** default_ruleset

Creating a Virtual Interface

To create a virtual interface, use the GUI's **Interfaces** node: **Interfaces** → **Configuration** → **New** with the following information.

- **SpinServer ID:** Server1
- **Virtual interface name:** if1
- **Physical port for interface binding:** serv0
- **IP address assigned to interface:** 10.1.1.140
- **Netmask assigned to interface:** 255.255.255.0

Binding the Virtual Interface to the Virtual Server

To bind the virtual interface to the virtual server, use the GUI's **Virtual Servers** node: **Virtual Servers → Servers → Bind Network Interface** with the following information.

- **SpinServer ID:** Server1
- **Interface name:** if1
- **Virtual server name:** vs1

Associating a NIS Domain with a Virtual Server for NFS

To associate a NIS domain with a virtual server for NFS access, use the GUI's **SpinAccess** node: **SpinAccess → NFS → Servers → New** with the following information.

- **Virtual server:** vs1
- **NIS domain name:** acmebricks.com

Creating a CIFS Server

A valid computer account must be created in the CIFS domain prior to configuring the virtual server for CIFS use. You must include all trusted domains in the visible domain list.

Use one of the following procedures:

- In the Windows 2000 Active Directory, when adding the SpinServer to the CIFS domain (**NEW → Computer**), select **Allow pre-Windows 2000 computers to use this account**.
- For Windows NT 4.0, use Server Manager to create the SpinServer account.

To create a shared virtual server for CIFS access, use the GUI's **SpinAccess** node: **SpinAccess → CIFS → Servers → New** with the following information.

- **Virtual server:** vs1
- **NetBios name:** NB0
- **Visible domains:** MARKETING, ENG
- **Domain name:** ENG
- **Node type:** M

Creating a Virtual File System

To create a VFS, use the GUI's **Virtual File Systems** node: **File Storage → Virtual File Systems → New** with the following information.

- **VFS:** vfs1
- **Virtual server:** vs1
- **Mount type:** context
- **Mount path:** /vfs1
- **Minimum quota (MB):** 5000

-
- **Maximum quota (MB):** 10000
 - **Free space alarm threshold (%):** 10
 - **Storage pool:** sp1
 - **User type of root FID:** NFS
 - **Domain of root FID:** acmebricks.com
 - **User of root FID:** user1
 - **Group of root FID:** group1
 - **Export ruleset name:** default_ruleset

The **User type of root FID** field has four options: **SPIN**, **NFS**, **CIFS**, and **NFS-Kerberos**. Use the **SPIN** value if an NIS or CIFS domain is not configured or available. If you create an NFS or CIFS virtual server or VFS, a NIS or a CIFS domain must already be configured on the SpinServer. The **CIFS** user type is used only for CIFS or mixed-security (NFS and CIFS) environments. The **NFS-Kerberos** user type assigns the ownership of the VFS to the user that is mapped to the Kerberos principal name specified by the value of the **User of root FID** field. For the current example, the **NFS** user type is used.

Creating a CIFS Share

To create a CIFS share, use the GUI's **SpinAccess** node: **SpinAccess → CIFS → Shares → New** with the following information. The path must already exist.

- **Virtual server:** vs1
- **Share name:** share1
- **Path:** /vfs1
- **Share properties:** oplocks
- **Remark:** This is a new share for vs1.

Setting Up a CIFS to NFS User and Group Mapping

To set up a CIFS to NFS user and group mapping, use the GUI's **SpinAccess** node: **SpinAccess → CIFS-NFS Mapping → New** with the following information.

Note: For further information about regular expressions, see *Mastering Regular Expressions* published by O'Reilly and Associates, Inc. at <http://www.oreilly.com/catalog/regex>. Additional information can be obtained from a UNIX prompt by running **info regex**. For further information and examples, run **man 7 regex**.

- **Virtual server:** vs1
- **Mapping type:** USER
- **Incoming CIFS pattern to match:** ENG\\(.+)
- **Replacement pattern for CIFS match:** \1
- **Incoming NFS pattern to match:** (.+)
- **Replacement pattern for NFS match:** ENG\\1

Performing Additional Setup Tasks

Additional setup tasks can include the following:

- Adding default routes to virtual interfaces and virtual servers
- Setting up SpinShots and mirrors of VFSs
- Setting up a high-availability (HA) system
- Setting up security by using Kerberos authentication, export rule sets, and pluggable authentication modules (PAM)
- Setting up the SpinServer to notify you of critical events via email
- Configuring backup and restoration products

For information on performing these and other tasks, see the *Administration Guide*.