

Network Interface Installation

Varian, Inc. NMR Systems

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Table of Contents

Introduction	5
Chapter 1. Network Interface Board Drivers	7
1.1 Requirements	7
1.2 Installing the Software Drivers	7
Chapter 2. Ethernet Router Installation for INOVA and MERCURYplus/-Vx	9
2.1 Requirements	9
2.2 Collect Network Information	10
2.3 Backup the <code>hosts</code> and <code>defaultrouter</code> Files	10
2.4 Disable the Second Ethernet Board	11
2.5 Connect the Router to the Sun and NMR Console	12
2.6 Configure the Router	13
2.7 Configure the Network	16
2.8 Configure VnmrJ or VNMR	17
2.9 Test the Connections	17
2.10 Returning to the Original Network Setup	18
2.11 Resetting the Router	18
Chapter 3. Ethernet Router Installation for Infinityplus	19
3.1 Requirements	19
3.2 Collect Network Information	20
3.3 Disable NIS and Edit the IP Addresses	21
3.4 Connect the Router to the Sun and NMR Console	22
3.5 Configure the Router	22
3.6 Reenable NIS	26
3.7 Modify the Spinsight <code>sys.config</code> File	26
3.8 Test the Connections	27
3.9 Returning to the Original Network Setup	27
3.10 Resetting the Router	27

Table of Contents

Introduction

Varian, Inc. NMR spectrometers and MRI systems use Ethernet for communications between the Sun host computer and the NMR console. Sun computers typically ship with one built-in Ethernet port. Therefore, connecting the Sun computer to a local area network (LAN), as well as to the NMR spectrometer, requires a second Ethernet option. Varian, Inc. provides the following Ethernet options:

- Sun Gigabit[®] Ethernet board
- Sun Gigabit[®] Ethernet/SCSI PCI board
- NETGEAR[®] Ethernet router for *UNITYINOVA* and *MERCURYplus* systems.
- NETGEAR[®] Ethernet router for *Infinityplus* systems.

Before you begin any of the procedures in this manual, you should be comfortable working with UNIX, Sun hardware, and Ethernet networks.

Ethernet Board

Chapter 1 describes how to install the software drivers for the Sun Gigabit Ethernet and Ethernet/SCSI boards for *UNITYINOVA* and *MERCURYplus*. This option is not available for *Infinityplus*.

Refer to the Sun documentation for instruction on installing the PCI board hardware.

Ethernet Router

Chapter 2 describes how to install the NETGEAR router on a *UNITYINOVA* or *MERCURYplus* system. Chapter 3 describes how to install the NETGEAR router on an *Infinityplus* system.

The installation of the router creates a subnet comprising three members:

- NMR console
- Sun computer
- router

The router will present its subnet IP address to the Sun, but at the same time it will present the Sun's former IP address to the LAN (i.e., the building network). The LAN will assume that it is communicating with the Sun, when it is actually communicating with the router. The router passes local LAN packets through to the Sun. The setup will appear to the Sun as though it is separately interfaced to both the building network, and to the console; but Ethernet traffic between the Sun and the console is prevented from appearing on the building network, since all such traffic takes place only on the subnet.

An increasing number of add-on NMR techniques, including automated sample changers and LC/MS systems, are taking advantage of Ethernet, and the router provides 8 ports for these other devices.

Chapter 1. Network Interface Board Drivers

Sections in this chapter:

- 1.1 “Requirements,” [this page](#)
- 1.2 “Installing the Software Drivers,” [this page](#)

This chapter applies to *UNITYINOVA* and *MERCURYplus/-Vx* only. The NMR Network Setup CD-ROM contains the drivers for the following PCI network interface boards:

- Sun Gigabit® Ethernet PCI board
- Sun Gigabit Ethernet/SCSI PCI board

If you are installing an Ethernet router, skip this chapter and follow the instructions in one of the next two chapters.

1.1 Requirements

The Sun Gigabit Ethernet or Ethernet/SCSI board must be installed according to the instructions provided by Sun Microsystems.

- Comfortable understanding of UNIX, Sun computers, and networking.
- Ethernet network and network configuration information.
- Sun computer with PCI, i.e., all SunBlades or Ultra 5,10, 30, or 60.
- Solaris 8 or higher.
- Root privileges.

1.2 Installing the Software Drivers

Install the new `finddevices`, `isetacq`, and `catcheaddr` files from the NMR Network Setup CD.

1. Log in as root.
2. Back up the `finddevices`, `catcheaddr`, and `isetacq` files:

```
# cd /vnmr/bin
# mv catcheaddr catcheaddr.orig
# mv finddevices finddevices.orig
# mv isetacq isetacq.orig
```
3. Insert the NMR Network Setup CD
4. Copy the new `finddevices`, `catcheaddr`, and `isetacq` files from the CD:

```
# cp /cdrom/cdrom0/* /vnmr/bin
```



5. Enter `./setacq` to start the communication between the NMR console and the host computer.
Reboot the console when directed.

Chapter 2. Ethernet Router Installation for *INOVA* and *MERCURYplus/-Vx*

Sections in this chapter:

- 2.1 “Requirements,” this page
- 2.2 “Collect Network Information,” page 10
- 2.3 “Backup the `hosts` and `defaultrouter` Files,” page 10
- 2.4 “Disable the Second Ethernet Board,” page 11
- 2.5 “Connect the Router to the Sun and NMR Console,” page 12
- 2.6 “Configure the Router,” page 13
- 2.7 “Configure the Network,” page 16
- 2.8 “Configure VnmrJ or VNMR,” page 17
- 2.9 “Test the Connections,” page 17
- 2.10 “Returning to the Original Network Setup,” page 18
- 2.11 “Resetting the Router,” page 18

This chapter describes how to install the NETGEAR ProSafe Firewall/VPN router on a *UNITYINOVA*, *MERCURYplus*, or *MERCURY-Vx* system.



2.1 Requirements

- Comfortable understanding of UNIX, Sun computer hardware, and Ethernet networking.
- Ethernet network and network configuration information.
- Solaris 8 or higher.
- Netscape 4.0 or higher -OR- Internet Explorer 4.0 or higher.
- Root privileges.

2.2 Collect Network Information

Use the following worksheet to collect your network information. You will use this information when setting up the router. The network administrator for your site should be able to provide this, or any additional, network information needed to set up the router.

Network Information Worksheet

<i>Network</i>	<i>Comments</i>	<i>Your Configuration</i>
Host Name	The host name of the Sun computer. DO NOT USE: inova, inovaauto, gemcon, or wormhole. Determine current host name by looking in the file /etc/hosts, or enter: uname -n	
Primary Network Interface	The interface with the main network (LAN, not the NMR console). Typically: le0 for 10baseT Ethernet boards; hme0 for Ultras or 10/100baseT Ethernet boards, and eri0 for Blades.	
IP Address	Current network IP number. Look in the file /etc/hosts, or enter: grep 'uname -n' /etc/hosts (note: use back quotes) The Sun computer will use 172.16.0.11 after it is connected to the router.	
Default Router	Current default router, referred to by the NETGEAR settings window as Gateway IP Address. To find your default router, look in the file /etc/defaultrouter. Enter: #more /etc/defaultrouter The router will be configured to be 172.16.0.1.	
Name Service	Depends on the local network setup. NIS+, NIS, DNS, DCE, or similar.	
Domain Name	Your network domain name; for example: our.domain. To find your domain name, enter domainname.	
Name Server	Your network name server. To find the name server, enter ypwhich for NIS, or look in the hosts file. Name Server Hostname – for example, ourserver Name Server IP Address – for example, 195.5.2.25 Subnet Mask – for example: 255.255.255.0	
Subnet Mask	The associated subnet mask or netmask number. The NETGEAR settings window refers to this as the IP Subnet Mask. To find your subnet mask number, enter: more /etc/netmasks	
Proxy Server	The name of the proxy server, e.g., proxy.domain.com To find the proxy server, open Netscape and look under Edit->Preferences->Advanced->Proxies	

2.3 Backup the hosts and defaultrouter Files

Make backup copies of the host and defaultrouter files as described below.

1. Make a copy of the hosts file:

- ```
cd /etc
cp hosts hosts_original
```
2. Make a copy of the defaultrouter file:
- ```
# cp defaultrouter defaultrouter_original
```

2.4 Disable the Second Ethernet Board

If your system has a second Ethernet board installed, remove or disable it.

- Remove the board by taking it out of the Sbus slot inside the Sun computer.
- Disable the board as follows:

- a. Make sure you are logged in as root.
- b. Change to the /etc directory:

```
# cd /etc
```

- c. List all the files with “host” in the name:

```
# ls host*
```

You should see two files that are named something like `hostname.hme0` and `hostname.eri0`.

- d. Remove or rename the file that is not the primary network interface. For example, if `eri0` is the primary network interface, remove `hostname.hme0`.
- e. Remove the wormhole entry in the `/etc/hosts` file.
- f. Disable the second Ethernet board, for example `hme0`:

```
# ifconfig hme0 down
```

```
# ifconfig hme0 unplumb
```

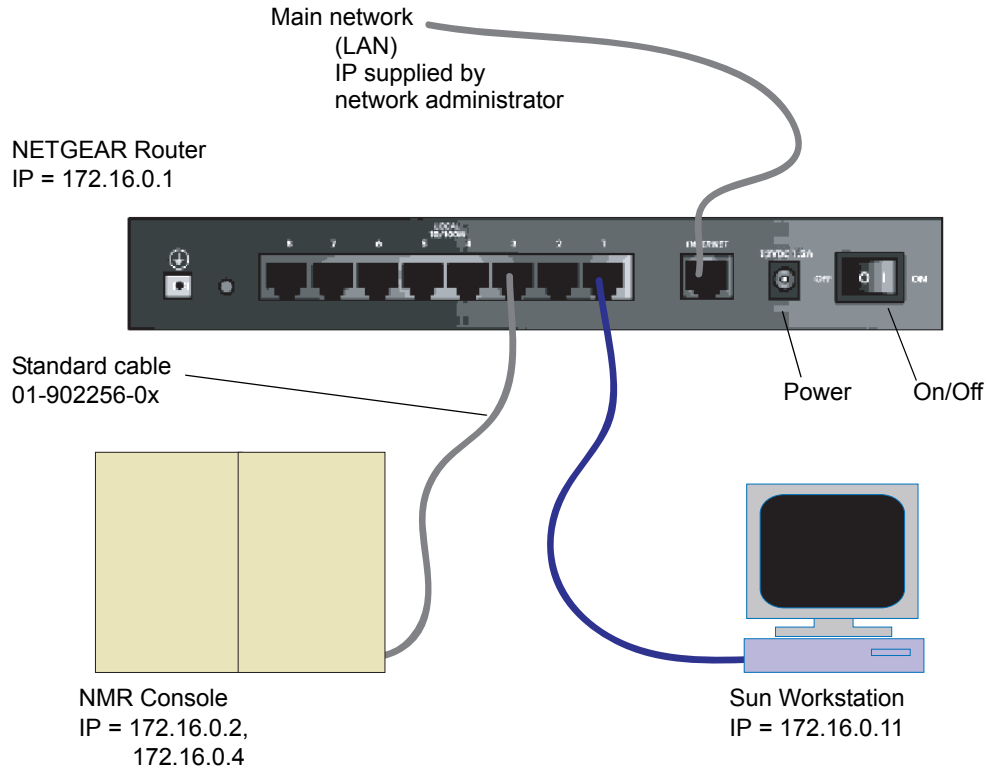
- g. Confirm that the board is disabled by entering:

```
# ifconfig -a
```

There should be no `hme0` entry.

2.5 Connect the Router to the Sun and NMR Console

Connect the NETGEAR router as follows:.



1. Connect the blue Ethernet cable between one of the LOCAL ports (1- 8) and the Sun computer. The blue Ethernet cable is included in the box with the router.
2. Connect the standard Ethernet cable (01-902256-0x) between one of the LOCAL ports (1- 8) and the NMR console:
 - *INOVA* – connect the Ethernet cable directly into the Ethernet Port on the Acquisition CPU board (front of console, left cabinet).
 - *MERCURY* – connect the AUI-to-10baseT transceiver to the ETHERNET PORT on the acquisition CPU board (back of console). Then, connect the Ethernet cable to the transceiver.
3. Connect the main network (LAN) to the INTERNET port on the router.
4. Connect the power adaptor to the router and turn on the router.

2.6 Configure the Router

The IP address of the router is set to 192.168.0.1 by default. This address must be changed to work with the NMR spectrometers, which use the 172.16.0.x IP addresses.

1. Enter the following to change the Sun computer IP address so that it can communicate with the router. Enter `hme0` or `eri0` depending on the primary network interface described in the Network Information Worksheet on page 2.

```
# ifconfig [hme0 or eri0] 192.168.0.11/24
```

Verify the change:

```
# ifconfig -a
```

The interface should be set to 192.168.0.11.

2. Start a Web browser. Make sure the browser is set for a direct connection to the Internet, not through a proxy server.
3. Enter the following URL: `http://192.168.0.1`
4. Log in when prompted (check the manufacturer's manual for login information):

User: **admin**

Password: **password**

The router settings window appears. To proceed, click **Basic Settings** on the left side of the screen, or select **No, I want to configure by myself** and click **Next**.

You will make changes in the following windows:

Window	Entries
Basic Settings	Information specific to your main network (LAN). Use the Network Information Worksheet or consult your network administrator for the correct values.
Ports	Set Default DMZ Server to 172.16.0.11 (this is the Sun computer)
LAN IP Setup	Set IP Address to 172.16.0.1 (this is the router) Leave the default IP Subnet Mask set to 255.255.255.0 . Use router as DHCP server is unchecked .

Basic Settings

Make the following settings in the Basic Settings window: Refer to the *Network Information Worksheet*. Contact your network administrator if in doubt about an entry.

- Does your internet connection require a login? — Select No.
- Account Name (If Required) — Leave blank.
- Domain Name (If Required) — Leave blank.
- Internet IP Address — **Select Use static IP address.**
- IP Address — Enter the IP address that was originally assigned to this **Sun computer** by the network administrator.
- IP Subnet Mask — Normally this is 255.255.255.0 unless the network administrator tells you otherwise.
- Gateway IP Address — If your network has a router whose IP address appears in your `/etc/defaultrouter` file, put its IP address here. Otherwise, put the network server's IP address here.
- Domain Name Server (DNS) Address — Select Use these DNS servers.
- Primary DNS — Enter your network domain name server's IP address.
- Secondary DNS — Normally leave as all zeros unless the network administrator gives you an address for a secondary server.
- Router's MAC address — Select Use Default Address.
- Click **Apply** after all selections are made.

Ports

Make the following settings in the Ports window:

1. Click **Ports** in the lower left side of the screen to open the Ports configuration window.
2. Click **Default DMZ Server** button to turn it on.
3. Enter the IP address **172.16.0.11**
This will be the Sun computer's new IP address.
4. Click **Apply**.

If the form is redisplayed on the screen showing the old numbers before you changed them, the router did not accept your new numbers. If this happens, just go on. The problem should fix itself after the LAN IP Setup step is performed below.

LAN IP Setup

Make the following settings in the LAN IP Setup window:

1. Click **LAN IP Setup** at the lower left side of the screen to open the LAN IP Setup window.
2. Enable UPnP: — Leave button unchecked.
3. LAN TCP/IP Setup: — Enter the IP address **172.16.0.1** (this will be the router's new IP address as seen by the console and the Sun computer.)
4. IP Subnet Mask: — Enter **255.255.255.0**
5. RIP Direction: — Leave set to “Both”.
6. RIP Version: — Leave set to “RIP-2B”.
7. MTU Size: — Leave “Default” button selected.
8. Use Router as DHCP server: — **Leave button unchecked.**
9. Starting IP Address and Ending IP Address — These will automatically update (to 172.16.0.2 and 172.16.0.100 respectively) based on the value entered earlier, after apply is clicked.
10. WINS Server — Leave as 0.0.0.0
11. Click **Apply**.

Finish the Configuration and Confirm Settings

After you apply the changes to the LAN IP Setup, you will lose the connection to the router, because its IP address has changed.

1. Exit from the browser.
2. In a Terminal window, logged in as `root`, enter the command:
3. `# ifconfig [hme0 or eri0] 172.16.0.11/24`
Use `hme0` or `eri0` as you did earlier in this section.
Verify the change:
`# ifconfig -a`
4. In a browser, enter the following URL: `http://172.16.0.1`
5. Log in when prompted (check the manufacturer's manual for login information):
User: `admin`
Password: `password`
6. View the Basic Settings, Ports, and LAN IP Setup windows and verify that the settings are correct.
7. Click Log Out at the bottom of the window to log out of the router.
8. Reset the proxy settings as appropriate and exit the browser.

2.7 Configure the Network

In this section, you will use the `sys-unconfig` command to configure your network. Use the network information you collected in the “[Network Information Worksheet](#)” on [page 10](#). Since most of the information is site specific, consult your network administrator when in doubt.

The `sys-unconfig` command begins by restoring system configuration information back to an as-manufactured state.

As `root`, enter:

```
# sys-unconfig
```

The system will begin rebooting and you will be asked a series of questions, similar to when Solaris is installed. Most of the information must be supplied by the network administrator at your site. The information specific to setting up the router is supplied below, as an example.

<i>Network Information</i>	<i>Enter this:</i>	<i>Comments</i>
IP Address	172.16.0.11	This is the new IP address of the Sun computer now that it is on the router subnet.
Subnet	Yes	The router creates a subnet that you will have to identify.
Default router	Specify one	Beginning to identify new router subnet.
Router IP	172.16.0.1	IP address of router.
Name server	Specify one	If your network uses a name server like NIS, you will have to identify it for the router. Your network administrator should be able to provide this information.

2.8 Configure VnmrJ or VNMR

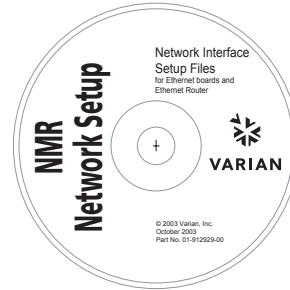
Install the new `findedevice`s, `isetacq`, and `catcheaddr` files from the NMR Network Setup CD.

1. Back up the `findedevice`s, `catcheaddr`, and `isetacq` files:

```
# cd /vnmr/bin
# mv catcheaddr catcheaddr.orig
# mv findedevice findedevice.orig
# mv isetacq isetacq.orig
```

2. Insert the NMR Network Setup CD
3. Copy the new `findedevice`s, `catcheaddr`, and `isetacq` files from the CD:


```
# cp /cdrom/cdrom0/* /vnmr/bin
```
4. Enter `./setacq` to start the communication between the NMR console and the host computer.
Reboot the console when directed by pressing the Reset switch.
and answer `y` to the firewall/router question.



2.9 Test the Connections

Use the `ping` command to check local and Internet connections.

1. Open a UNIX terminal widow.
2. Check the local connections by entering:

```
/usr/sbin/ping inova
```

Check the Internet connections by entering an Internet site, such as Yahoo:

```
/usr/sbin/ping www.yahoo.com
```

You should see the message `inova is alive` for the local connection and `www.yahoo.com is alive` (or whatever site you chose) for the Internet site. If not, repeat the steps in this manual, check that all cables are connected properly, and verify all network information.

2.10 Returning to the Original Network Setup

If for some reason you want to remove the router and return the system to the original network setup, you can use the `sys-unconfig` command and reconfigure the system.

2.11 Resetting the Router

If you have forgotten the router password or if the router settings have been tampered with or changed, it may no longer have its default IP address. Reset the router to default conditions as follows:

1. Press the small blue reset button on the back of the router until the test light blinks. The button is recessed to avoid accidental reset. Use a pen or a paperclip to reach it.
2. Release the button and disconnect the router's power.
3. Reconnect the power.
4. Press and hold the reset button and power on the router.
5. Hold the reset button for 20 seconds after powering on.

After the router is reset, you will have to repeat the procedures in this manual.

Chapter 3. Ethernet Router Installation for *Infinityplus*

Sections in this chapter:

- 3.1 “Requirements,” this page
- 3.2 “Collect Network Information,” page 20
- 3.3 “Disable NIS and Edit the IP Addresses,” page 21
- 3.4 “Connect the Router to the Sun and NMR Console,” page 22
- 3.5 “Configure the Router,” page 22
- 3.6 “Reenable NIS,” page 26
- 3.7 “Modify the Spinsight sys.config File,” page 26
- 3.8 “Test the Connections,” page 27
- 3.9 “Returning to the Original Network Setup,” page 27
- 3.10 “Resetting the Router,” page 27

This chapter describes how to install the NETGEAR ProSafe Firewall/VPN router on a *Infinityplus* system.



All currently released Spinsight software version on CD (through version 4.3.2) assume the existence of a second Ethernet interface board installed in the Sun computer; this is used for communicating with the NMR console. Systems shipped with the router will not have this interface card, which will lead to error messages during the Spinsight installation. Spinsight will still be installed, but installation of the router must be done manually afterwards.

3.1 Requirements

- Comfortable understanding of UNIX, Sun computer hardware, and Ethernet networking.
- Ethernet network and network configuration information.
- Solaris 8 or higher.
- Netscape 4.0 or higher -OR- Internet Explorer 4.0 or higher.
- Root privileges.

3.2 Collect Network Information

Use the following worksheet to collect your network information. You will use this information when setting up the router. The network administrator for your site should be able to provide this, or any additional, network information needed to set up the router.

Network Information Worksheet

<i>Network</i>	<i>Comments</i>	<i>Your Configuration</i>
Host Name	The host name of the Sun computer. DO NOT USE: <code>inova</code> , <code>inovaauto</code> , <code>gemcon</code> , or <code>wormhole</code> . Determine current host name by looking in the file <code>/etc/hosts</code> , or enter: <code>uname -n</code>	
Primary Network Interface	The interface with the main network (WAN, not the NMR console). Typically: <code>le0</code> for 10baseT Ethernet boards; <code>hme0</code> for Ultras or 10/100baseT Ethernet boards, and <code>eri0</code> for Blades.	
IP Address	Current network IP number. Look in the file <code>/etc/hosts</code> , or enter: <code>grep 'uname -n' /etc/hosts</code> (note: use back quotes) The Sun computer will use 192.9.200.1 after it is connected to the router.	
Default Router	Current default router, referred to by the NETGEAR settings window as Gateway IP Address. To find your default router, look in the file <code>/etc/defaultrouter</code> . Enter: <code>#more /etc/defaultrouter</code> The router will be configured to be 192.9.200.11.	
Name Service	Depends on the local network setup. NIS+, NIS, DNS, DCE, or similar.	
Domain Name	Your network domain name; for example: <code>our.domain</code> . To find your domain name, enter <code>domainname</code> .	
Name Server	Your network name server. To find the name server, enter <code>ypwhich</code> or look in the <code>hosts</code> file. Name Server Hostname – for example, <code>ourserver</code> Name Server IP Address – for example, <code>195.5.2.25</code> Subnet Mask – for example: <code>255.255.255.0</code>	
Subnet Mask	The associated subnet mask or netmask number. The NETGEAR settings window refers to this as the IP Subnet Mask. To find your subnet mask number, enter: <code>more /etc/netmasks</code>	
Proxy Server	The name of the proxy server, e.g., <code>proxy.domain.com</code> To find the proxy server, open Netscape and look under Edit->Preferences->Advanced->Proxies	

3.3 Disable NIS and Edit the IP Addresses

If your network uses NIS for the name server, disable NIS and edit the `host` and `defaultrouter` IP addresses as described below.

1. If not already done, power up the Sun computer and log in as `root`.

2. Disable NIS:

```
# cd /var
# mv yp yp.none
```

3. Make a copy of the `hosts` file:

```
# cd /etc
# cp hosts hosts_original
```

4. Edit the `hosts` file:

```
# vi hosts
```

Replace the IP address and name of the computer with:

```
192.9.200.1      sbc_net
```

Add the IP address and name of the console:

```
192.9.200.2      infinity_sbc
```

The `sbc_net` and `infinity_sbc` entries are hard coded in the Spinsight software and are required for the spectrometer to function. The new `hosts` file will look similar to the following, except it might have additional entries for your server and other shared hosts:

```
127.0.0.1      localhost
123.45.67.89   server (local name server example)
192.9.200.1    sbc_net
192.9.200.2    infinity_sbc
```

5. Make a copy of the `defaultrouter` file:

```
# cp defaultrouter defaultrouter_original
```

6. Edit the `defaultrouter` file:

```
# vi defaultrouter
```

Enter `192.9.200.11`

7. Edit the `hostname.hme0` (`hostname.eri0` on the SunBlade) file:

```
# vi hostname.hme0 (or hostname.eri0)
```

Change the host name to `sbc_net`. This is the Sun's hostname on the subnet administered by the router.

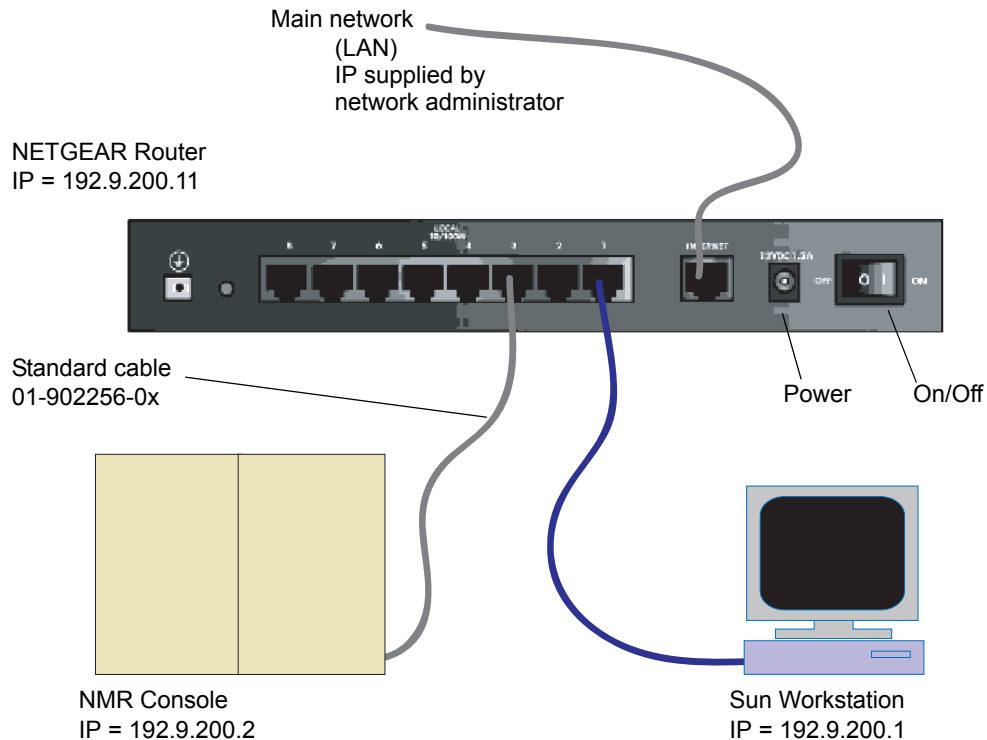
8. Reboot the Sun computer.

```
# reboot
```

The computer will boot up without NIS support. Go to the next section to connect the Ethernet cables.

3.4 Connect the Router to the Sun and NMR Console

Connect the NETGEAR router as follows:



1. Connect the blue Ethernet cable between one of the LOCAL ports (1- 8) and the Sun computer. The blue Ethernet cable is included in the box with the router.
2. Connect the standard Ethernet cable (01-902256-0x) between one of the LOCAL ports (1- 8) on the router and the NMR console:
Connect the AUI-to-10baseT transceiver to the ETHERNET port on the Transition Module (front of console, left cabinet). Then, connect the Ethernet cable to the transceiver.
3. Connect the main network (LAN) to the INTERNET port on the router.
4. Connect the power adaptor to the router and turn on the router.

3.5 Configure the Router

The IP address of the router is set to 192.168.0.1 by default. This address must be changed to work with *Infinityplus* spectrometers, which use the 192.9.200.x range of IP addresses.

1. Enter the following to change the Sun computer IP address so that it can communicate with the router. Enter `hme0` or `eri0` depending on the primary network interface described in the Network Information Worksheet on page 2.
ifconfig [hme0 or eri0] 192.168.0.11/24
Note that `hme0` is the device name of the motherboard Ethernet interface for Ultra computers (except Ultra 1). For a Blade computer, substitute `eri0`. For Ultra 1, SPARC 5 or 10, substitute `le0`.

Verify the change:

```
# ifconfig -a
```

The interface should be set to 192.168.0.11.

2. Start a Web browser, such as Netscape. Make sure the browser is set for a direct connection to the Internet, not through a proxy server. (Select Edit->Preferences menu; Click the '+' for Advanced, and select Proxies. Make sure Direct connection to the Internet is selected.)

If Netscape is not installed, it can be installed from the Solaris 8 or Solaris 9 install CDs, or it can be downloaded from Netscape's web site. Contact Varian service for a copy if you are unable to obtain Netscape by other means.

3. Enter the following URL: **http://192.168.0.1**

4. Log in when prompted (check the manufacturer's manual for login information):

User: **admin**

Password: **password**

The login on the router will time out if too much time passes with no activity from the browser. If this happens, the login screen will appear again. Log in again as shown above, and then proceed.

The setup wizard window appears. To proceed, click **Basic Settings** on the left side of the screen, or select **No, I want to configure by myself** and click **Next**.

Basic Settings window

Ports window

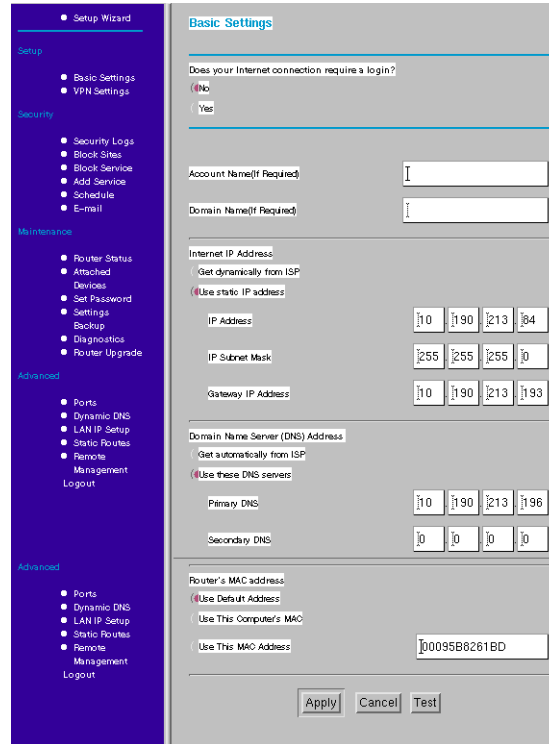
LAN IP Setup window

5. Next, you will make changes in the following windows:
 - Basic Settings
 - Ports
 - LAN IP Setup

Basic Settings

Make the following settings in the Basic Settings window: Refer to the *Network Information Worksheet*.

1. Does your internet connection require a login? — Select No.
2. Account Name (If Required) — Leave blank.
3. Domain Name (If Required) — Leave blank.
4. Internet IP Address — Select Use static IP address
5. IP Address — Enter the IP address that was originally assigned to this Sun computer by the network administrator.
6. IP Subnet Mask — Normally this is 255.255.255.0 unless the network administrator tells you otherwise.
7. Gateway IP Address — If your network has a router whose IP address appears in your `/etc/defaultrouter` file, put its IP address here. Otherwise, put the network server's IP address here.
8. Domain Name Server (DNS) Address — Select Use these DNS servers.
9. Primary DNS — Enter your network domain name server's IP address.
10. Secondary DNS — Normally leave as all zeros unless the network administrator gives you an address for a secondary server.
11. Router's MAC address — Select Use Default Address.
12. Click **Apply** after all selections are made.



Ports

Make the following settings in the Ports window:

1. Click **Ports** in the lower left side of the screen to open the Ports configuration window.
2. Click **Default DMZ Server** button to turn it on.
3. Enter the IP address **192.9.200.1**

This will be the Sun's new IP address.

4. Click **Apply**.

If the form is redisplayed on the screen showing the old numbers before you changed them, the router did not accept your new numbers. If this happens, just go on. The problem should fix itself after the LAN IP Setup step is performed below.

LAN IP Setup

Make the following settings in the LAN IP Setup window:

1. Click **LAN IP Setup** at the lower left side of the screen to open the LAN IP Setup window.
2. Enable UPnP: — Leave button unchecked.
3. LAN TCP/IP Setup: — Enter the IP address **192.9.200.11** (this will be the router's new IP address as seen by the console and the Sun computer.)
4. IP Subnet Mask: — Enter **255.255.255.0**
5. RIP Direction: — Leave set to “Both”.
6. RIP Version: — Leave set to “RIP-2B”.
7. MTU Size: — Leave “Default” button selected.
8. Use Router as DHCP server: — **Leave button unchecked.**
9. Starting IP Address — Enter **192.9.200.1**
10. Ending IP Address — Enter **192.9.200.100**
11. WINS Server — Leave as 0.0.0.0

12. Click **Apply**.

Finish the Configuration and Confirm Settings

After you apply the changes to the LAN IP Setup, you will lose the connection to the router, because its IP address has changed.

1. Exit from the browser.
2. In a Terminal window, logged in as `root`, enter the command:

```
# ifconfig [hme0 or eir0] 192.9.200.1/24
```

Use `hme0` or `eri0` as you did earlier in this section.
Verify the change:

```
# ifconfig -a
```
3. Enter the following URL: **`http://192.9.200.11`**
4. Log in when prompted (check the manufacturer's manual for login information):
User: **`admin`**
Password: **`password`**
5. View the Basic Settings, Ports, and LAN IP Setup windows and verify that the settings are correct.
6. Click Log Out at the bottom of the window to log out of the router.
7. Reset the proxy settings as appropriate and exit the browser.

3.6 Reenable NIS

If you disabled NIS earlier, reenable NIS as described below.

1. Log in as `root`.
2. Reenable NIS:

```
# cd /var  
# mv yp.none yp
```
3. Reboot the Sun computer.

3.7 Modify the Spinsight sys.config File

Edit the `sys.config` file as described below:

1. Edit the following file:

```
/usr/CM/spec/sys.config
```
2. Locate the following text on about line 77:

```
SECOND_ETHERNET    yes
```

change it to:

```
SECOND_ETHERNET    no
```

Spinsight will no longer try to communicate with the console using the second Ethernet board.

3.8 Test the Connections

Use the `ping` command and run Spinsight to check local and Internet connections.

1. Open a UNIX terminal window.
2. Check the Sun computer's alternate name by entering:

```
/usr/sbin/ping sbc_net
```

Check the console connection by entering:

```
/usr/sbin/ping infinity_sbc
```

Check the Internet connection by entering an Internet site, such as Yahoo:

```
/usr/sbin/ping www.yahoo.com
```

You should see the message `sbc_net is alive` and `infinity_sbc is alive` for the local connections and `www.yahoo.com is alive` (or whatever site you chose) for the Internet site. If not, repeat the steps in this manual, check that all cables are connected properly, and verify all network information.

3. Run Spinsight to verify that it loads and runs correctly.

3.9 Returning to the Original Network Setup

If, for any reason, it becomes necessary to return to the router's setup screens, you will not be able to access the setup screens while NIS is enabled.

1. Rename the `/var/yp` directory as described in 3.3 “Disable NIS and Edit the IP Addresses,” page 21, and reboot.
2. You should then be able to use the browser to access the router at address `http://192.9.200.11`.
3. After making changes, re-enable NIS as described in 3.6 “Reenable NIS,” page 26 and reboot.

3.10 Resetting the Router

If you have forgotten the router password or if the router settings have been tampered with or changed, it may no longer have its default IP address. Reset the router to default conditions as follows:

1. Press the small blue reset button on the back of the router until the test light blinks. The button is recessed to avoid accidental reset. Use a pen or a paperclip to reach it.
2. Release the button and disconnect the router's power.
3. Reconnect the power.
4. Press and hold the reset button and power on the router.
5. Hold the reset button for 20 seconds after powering on.

After the router is reset, you will have to repeat the procedures in this manual.

