Symphony-HRF Cordless Gateway

User's Manual

Limited Warranty, Disclaimer, Limitation Of Liability
For a period of one (1) year from the date of purchase by the retail customer, Proxim warrants the Symphony-HRF Cordless Gateway against defects in materials and workmanship. If a product is found defective during the warranty period, Proxim will repair or replace the product with the same or a similar model, which may be a reconditioned unit, without charge for parts or labor. Any replaced or repaired product will have either a ninety (90) day warranty, under the conditions described herein, or the remainder of the initial one (1) year warranty, whichever is longer.

Proxim also warrants the media containing the Symphony software against failure for a period of ninety (90) days.

Proxim will not honor this warranty if there has been any attempt to tamper with or remove the product's external foil label. This warranty does not cover and Proxim will not be liable for any damage or failure caused by misuse, abuse, acts of God, accidents, or other causes beyond Proxim's control, or claim by any entity other than the original purchaser.

Part # 7360.xxxx
Rev. A

In no event shall Proxim, Inc. be responsible or liable for any damages arising:

❑ From the use of the product;

❑ From the loss of use, revenue or profit of the product; or

❑ As a result of any event, circumstance, action, or abuse beyond the control of Proxim, Inc.;

Whether such damages be direct, indirect, consequential, special, or otherwise and whether such damages are incurred by the person to whom this warranty extends or a third party.

Proxim does not warrant that the functions contained in the products will meet your requirements, or that the operation of the Symphony-HRF Cordless Gateway will be uninterrupted or error free.

Warranty Return Policy
If you have a problem with your Symphony product, please call Proxim Technical Support at (408) 731-2780. Proxim Technical Support will assist with resolving any technical difficulties you may have with your Proxim product. If a Proxim technical representative determines that a product is defective and the product is still in warranty, you will be assigned a Return Material Authorization (RMA) number to authorize its return for repair or replacement. Dated proof of purchase may be required. Package the product appropriately for safe shipment, mark the RMA number on the outside of the package, and ship the package at your expense. Proxim recommends that you insure the package during shipment.

For support of software media, please refer to Proxim's Symphony Web site at http://www.proxim.com/symphony/.

Contents

1. Introduction

Thank you for purchasing Proxim's Symphony-HRF Cordless Gateway, a member of the Symphony Cordless Networking Suite. The Symphony-HRF Cordless Gateway interoperates with Symphony Cordless Adapters to deliver reliable, hassle-free networking for your laptops and desktops without the use of wires or cables. With the addition of the Cordless Gateway to a Symphony Cordless Network, you can provide high-speed Internet access to Symphony computers from a cable modem, xDSL modem, or ISDN router, or you can connect Symphony computers to an existing Ethernet Local Area Network (LAN).

The Cordless Gateway, like the other members of the Symphony Cordless Networking Suite, is based on Proxim's award-winning wireless technology used daily by banks, hospitals, and corporations around the world. You can expect this same reliability from the Symphony products in your home or small office.

If you have recently upgraded to a form of high-speed Internet access that no longer requires the use of an analog modem, such as ISDN, xDSL, or service from a local cable company, you may be able to provide this high-speed access to all members of the Symphony Cordless Network simultaneously!

The Symphony-HRF Cordless Gateway also provides a convenient solution for consumers who already have an existing Ethernet LAN in their home or small office but also want the increased flexibility and mobility provided by a cordless system. A cordless computer can share files and printers as if it were another member of the Ethernet backbone. Laptops can become free of wires and cables so you can check E-Mail, surf the Internet, or exchange files from anywhere in your home or backyard! Desktop computers in hard to wire locations can now enjoy connectivity with the rest of the network.

This manual provides all of the information necessary to install and configure not only the Symphony-HRF Cordless Gateway, but also the Symphony Adapters that you will use in conjunction with this device. However, you may want refer to the Symphony Adapters User's Manual for detailed installation and troubleshooting instructions.

Product Family

The Symphony-HRF Cordless Gateway is a member of the Symphony Cordless Suite, a family of products which provide a complete cordless networking solution for the home or small office.

- **The Symphony PC Card** fits into a standard PCMCIA Type II socket in a laptop or notebook computer. As a Plug-and-Play device, Windows 95 or Windows 98 will automatically recognize the card and begin the installation process. When installed, the Symphony PC Card can communicate with other Symphony products to create a cordless network in the home or small office. The PC Card ships with a snap-on antenna which connects directly to the side of the card.

- **The Symphony PNP ISA Card** fits into a standard ISA slot in a desktop computer. The ISA Card is a Plug-and-Play device; therefore, Windows 95 or Windows 98 will automatically recognize the card and begin the installation process. When installed, the Symphony ISA Card can communicate with other Symphony products to create a cordless network in the home or small office. The ISA Card ships with a desktop antenna which connects to the back of the card with a 5-foot antenna cable.

- **The Symphony PCI Card** fits into a standard PCI slot in a desktop computer. The PCI Card is a Plug-and-Play device; therefore, Windows 95 or Windows 98 will automatically recognize the card and begin the installation process. When installed, the Symphony PCI Card can communicate with other Symphony products to create a cordless network in the home or small office. The PCI Card ships with a desktop antenna which connects to the back of the card with a 5-foot antenna cable.

- **The Symphony USB Adapter** connects to a computer's USB (Universal Serial Bus) port. The Symphony USB Adapter is a Plug-and-Play device; therefore, Windows 98 will automatically recognize the adapter and begin the installation process. When installed, the Symphony USB Adapter can communicate with other Symphony products to create a cordless network in the home or small office. The Symphony USB Adapter has a built-in antenna and includes a 6-foot cable to connect the adapter to a computer's USB port.

- **The Symphony Cordless Modem** is a 56 Kbps modem (V.90 and x2-compatible) which plugs into any standard phone jack. The Symphony Cordless Modem provides high speed, analog modem access to any other Symphony-enabled computer in the household, and it frees desktops and laptops so that they no longer need to be located near a telephone jack. The Cordless Modem has a built-in antenna. Note that the Cordless Modem cannot be used in conjunction with the Symphony-HRF Cordless Gateway.

Proxim ships several software tools on the Symphony Installation CD-ROM to make installation and configuration simple and hassle-free.

- **The Symphony Composer Installation Wizard** guides the user through the setup and configuration of a Symphony Cordless Network during the initial installation or following an upgrade from an earlier version of the Symphony software.

- **The Symphony Maestro Configuration Tool** allows the user to configure the settings and monitor the status of the Symphony Cordless Network and Cordless Gateway.

- **The Symphony Network Switcher** provides a fast and convenient way to transport a Symphony-enabled computer between different networks by storing the relevant settings for each network.

In addition, Proxim offers Symphony accessory products, such as additional antenna options for the Symphony PC Card, and spare parts. Refer to Proxim's Symphony Web site, at http://www.proxim.com/symphony/, for information on available accessories.

System Requirements

In order to use a Symphony-HRF Cordless Gateway, you must have the following:

- An external, Ethernet-ready device which provides high-speed Internet access, such as a cable modem, xDSL modem, or ISDN router. When attached to this device, the Cordless Gateway will allow Symphony-enabled computers to share Internet access;

OR

- A 10BaseT Ethernet hub or a computer with an Ethernet card already installed. When attached to one of these devices, the Cordless Gateway will allow Symphony-enabled computers to communicate with devices on a wired Ethernet network or to a single, stand-alone Ethernet-ready computer.

- At least one Symphony Adapter installed in a Windows 95 or Windows 98 computer with a minimum 486/66 MHz processor, a minimum of 16 MB of RAM, and a minimum of 10 MB of hard disk space available.

The Product Package

Each Symphony-HRF Cordless Gateway comes with the following:

- ❑ One (1) Symphony-HRF Cordless Gateway with an integrated antenna.
- ❑ One (1) 7.5 Volt, 1 Amp power adapter.
- ❑ One (1) 10BaseT crossover cable. See Appendix A for important information regarding the Cordless Gateway's cabling requirements.
- ❑ One (1) Symphony-HRF Cordless Gateway Quick Start Guide.
- ❑ One (1) Symphony-HRF Cordless Gateway User's Manual.

2. Cordless Networking With the Cordless Gateway

The Symphony Adapters create a cordless network between each computer in a household using standard networking software included with Windows 95/ 98. This network links the computers together so that they can share files, printers, and other peripheral devices, such as CD-ROM drives, floppy disk drives, or Iomega Zip drives. With the addition of a Symphony-HRF Cordless Gateway to the cordless network, the Symphony Cards can also communicate with a small existing Ethernet network or with an external Ethernet device that provides high-speed Internet access.

The Cordless Gateway provides a cordless solution for a wide variety of small networking environments, including these four supported configurations:

- ❑ Cordless connectivity to an external Ethernet-ready device which provides high-speed Internet access;
- ❑ Cordless connectivity to an existing Ethernet network;
- ❑ Cordless connectivity to an existing Ethernet network that is capable of accessing the Internet at high speeds; and
- ❑ Cordless connectivity to a network server.

Each configuration is described in detail below. Also, see Chapter 7 for more information on how to configure the cordless network in each of these scenarios.

Connectivity to an External Ethernet Device Which Provides High-Speed Internet Access

The Symphony-HRF Cordless Gateway allows the cordless network to communicate with an external Ethernet device to share high-speed Internet access with every Symphony-enabled computer.

The Cordless Gateway acts as a link between a high-speed Internet device and the Symphony-enabled computers, so that each computer (laptops and desktops) on the cordless network has simultaneous Internet access and can share files and printers.

To use the Cordless Gateway in this configuration, you need a high-speed Internet account with an Internet Service Provider (ISP) and one of the following pieces of equipment:

- ❑ An external cable modem;
- ❑ An external xDSL device, such as an ADSL modem;
- ❑ An ISDN router; or
- ❑ Any other external Ethernet device that can provide high-speed Internet access to a network.

Note that these devices must be external, stand-alone units that support 10 Mbps Ethernet and have an RJ-45 10BaseT connector; devices which use a different networking technology, such as ATMF-25, will not communicate with the Cordless Gateway. For a similar reason, most ISDN terminal adapters cannot be used with the Cordless Gateway because they do not communicate over Ethernet and do not have a 10BaseT Ethernet port.

Generally, you will use the 10BaseT crossover cable, included in the product package, to connect the Cordless Gateway to your high-speed device. Devices such as an ISDN router, which often include several hub ports built-in, or a cable modem, which is designed to connect to a single Ethernet card installed in a computer, are wired like a 10BaseT cabling hub. The Cordless Gateway is also wired like a 10BaseT cabling hub, so in order to connect two devices that are both wired like a hub together, you must use a 10BaseT crossover cable. If your high-speed device is wired like a standard Ethernet card, then you need to use a standard 10BaseT cable to connect the Cordless Gateway and this device. See Appendix A for more information on the Cordless Gateway's cabling requirements.

In this configuration, the Cordless Gateway performs a function known as "Network Address Translation" or "NAT." The ISP assigns a single IP Address for the Cordless Gateway, and NAT allows up to ten (10) Symphony-enabled computers to access the Internet at the same time using this single address assignment. The Cordless Gateway acts as an intermediary and sends data between the Internet and the computers on the Symphony Cordless Network.

By default, the Cordless Gateway is configured to accept a dynamic IP Address from a DHCP (Dynamic Host Configuration Protocol) server. If your ISP does not use DHCP, then you will need to configure the Cordless Gateway with a static IP Address assigned to you by the ISP. See Chapter 7 for more information on how to configure the Cordless Gateway's TCP/IP parameters.

Connectivity to an Ethernet Network

If you have a small network already in your home or office, you can connect the Symphony-HRF Cordless Gateway directly to an Ethernet cabling hub in order to provide connectivity between computers on the cordless network and nodes on the wired Ethernet.

The Cordless Gateway transparently links the two networks so that to each node there appears to be only one network. This function is known as "Transparent Bridging."

Simply connect the Cordless Gateway to the 10BaseT cabling hub using the 10BaseT crossover cable included in the product package. In order to connect two devices that are both wired like a hub together, you must use a 10BaseT crossover cable. See Appendix A for more information on the Cordless Gateway's cabling requirements.

In this configuration, each computer, whether wired or cordless, will have the ability to share files and printers with the all other members of the cordless and wired networks.

For example, if you have an existing wired Ethernet, you may add a Cordless Gateway to give network connectivity to a laptop with a Symphony PC Card installed.

By default, the Cordless Gateway performs both Network Address Translation (NAT) and Transparent Bridging. Depending on the configuration of your network, you may want to disable the NAT function. See Chapter 7 for information on how to configure the Cordless Gateway and for more information on File and Printer Sharing.

Note:

The Cordless Gateway is designed to provide connectivity to small Ethernet networks. It cannot support more than eight (8) devices on its Ethernet port. Do NOT connect the Cordless Gateway to a cabling hub that has more than eight (8) Ethernet devices attached.

Connectivity to an Ethernet Network Which Has High-Speed Internet Access

As discussed above, an Cordless Gateway can link a Symphony Cordless Network to a wired Ethernet network. In addition, if you have an existing device on the wired network which provides high-speed Internet access to each of the Ethernet workstations, then the Symphony-enabled computers will also be able to share this Internet connection. Examples of high-speed devices include a cable modem, an ADSL modem, or an ISDN router.

The presence of the Cordless Gateway allows the two networks to be linked together sharing this Internet access as well as files and printers.

Note:

The Cordless Gateway is designed to provide connectivity to small Ethernet networks. It cannot support more than eight (8) devices on its Ethernet port. Do NOT connect the Cordless Gateway to a cabling hub that has more than eight (8) Ethernet devices attached.

Simply connect the Cordless Gateway to the 10BaseT cabling hub using the 10BaseT crossover cable included in the product package. In order to connect two devices both wired like a hub together, you must use a 10BaseT crossover cable. See Appendix A for more information on the Cordless Gateway's cabling requirements.

In this configuration, the Cordless Gateway may perform Network Address Translation (NAT), Transparent Bridging, or both. By default, the Cordless Gateway will perform both tasks, but depending on your network configuration, you may wish to change this setting within the Symphony Maestro Configuration Tool. For example, if you already have an Internet-sharing software package, such as a proxy server program, installed on the network, you may configure the Cordless Gateway to perform Transparent Bridging only and then configure the Symphony-enabled computers with TCP/IP

settings that match the TCP/IP settings of the workstations on the existing wired network.

Refer to Chapter 7 to learn how to configure the Cordless Gateway and for a discussion of suggested TCP/IP configurations for the network.

Connectivity to a Network Server

You may also connect the Cordless Gateway to an existing Ethernet network that contains a network server, such as a Windows NT server, to allow Symphony-enabled computers to act as network clients.

Simply connect the Cordless Gateway to the 10BaseT cabling hub using the 10BaseT crossover cable included in the product package. In order to connect two devices that are both wired like a hub together, you must use a 10BaseT crossover cable. See Appendix A for more information on the Cordless Gateway's cabling requirements.

In this configuration, Symphony-enabled computers should have the same client/server and file sharing capabilities as any existing wired clients on the network. The Cordless Gateway performs Transparent Bridging to link the two networks so that to each node there appears to be only one local area network (LAN). By default, the Cordless Gateway performs both Network Address Translation (NAT) and Transparent Bridging. Depending on the configuration of your network, you may want to disable the NAT function. See Chapter 7 for information on how to configure the Cordless Gateway.

Note:

The Cordless Gateway is designed to provide connectivity to small Ethernet networks. It cannot support more than eight (8) devices on its Ethernet port. Do NOT connect the Cordless Gateway to a cabling hub that has more than eight (8) Ethernet devices attached.

In addition, if you do not have an existing network and desire only to connect cordless clients to one stand-alone server, you can also attach the Cordless Gateway directly to the server. Simply connect the Cordless Gateway to an Ethernet card installed in the server using a standard 10BaseT cable. You will have the same functionality between the server and cordless clients as described above.

3. Installing the Symphony Hardware

This chapter describes the step-by-step procedure for the physical installation of the Symphony-HRF Cordless Gateway and the Symphony Adapters.

Symphony-HRF Cordless Gateway

The Symphony-HRF Cordless Gateway is a stand-alone device which requires no software installation. Also, the Cordless Gateway includes an integrated antenna so there is no separate antenna installation required. Follow these steps to install the Cordless Gateway:

1. Place the Cordless Gateway in close proximity to the Ethernet-ready device to which you intend to attach the unit. If you intend to use the 10BaseT crossover cable included in the product package, the distance between the Cordless Gateway and the 10BaseT port of the Ethernet-ready device must not be greater than the length of this cable. If you intend to use your own 10BaseT cable, the cable must not exceed 100 meters.

In general, you should try to place the Cordless Gateway on top of a desk or bookcase so that it is as far from the ground as possible, keeping clear of metal obstructions. You should also try to centrally locate the device so that it will provide coverage to all of the computers on the cordless network, but keep in mind that it must also be close enough to the wall so that you can easily connect its power adapter to the wall outlet.

2. Attach one end of the power adapter to the back of the Cordless Gateway and the other end to the wall outlet. The Status LED, located on the top of the Cordless Gateway, should glow yellow and then green to indicate that the unit is operational.

Note:

Use the Symphony-HRF Cordless Gateway only with the power adapter supplied by Proxim in the product package. Using another power supply may damage the Symphony-HRF Cordless Gateway.

3. Attach one end of the 10BaseT crossover cable, provided in the product package, to the Cordless Gateway and attach the other end to the 10BaseT

port of an Ethernet-ready device. Make sure that the Ethernet-ready device is powered on before proceeding.

Once the cable is attached to both devices, the Cordless Gateway's green Link LED should illuminate. This LED lights up when an Ethernet link is detected and, on occasion, will blink off momentarily to reflect Ethernet activity. However, if the Link LED does not light up and remain on (only blinking off momentarily) when the cable is attached, then the 10BaseT crossover cable is not the correct cable for this connection. In this case, you need to obtain a standard 10BaseT cable in order to connect the Cordless Gateway to the Ethernet-ready device. Do not proceed to Step #5 until the Cordless Gateway's Link LED lights up and remains on (only occasionally blinking off to reflect Ethernet activity).

In general, you will use the 10BaseT crossover cable, provided in the product package, to connect the Cordless Gateway to a high-speed Internet device, such as a cable modem, xDSL modem, or ISDN router, or to a free port on an Ethernet hub. However, use a standard 10BaseT cable to connect the Cordless Gateway to a single, stand-alone computer that has an Ethernet card installed or to a standard Ethernet router; do NOT use the cable shipped with the product. See Appendix A for more information about the Cordless Gateway's cabling requirements.

5. Proceed with the installation or software update of the other Symphony products in your home or small office using the Symphony Installation CD supplied with the Symphony Adapters. Refer to Chapters 3, 4, and 5 within this manual for instructions on how to install a Symphony Adapter in a Windows 95/98 computer. Refer to Appendix C for instructions on how to install a Symphony Adapter in a Windows NT computer. **The Symphony-HRF Cordless Gateway must remain powered on during the installation of the other Symphony products.**

Note:

If the Cordless Gateway is not powered on when installing or updating the other Symphony components on the cordless network, you will have difficulty configuring these other Symphony products.

LED Indicators

The Symphony-HRF Cordless Gateway has five functional LEDs: three on the top of the unit and two on the back panel. The LEDs on the top panel perform the following functions:

- The Status LED, which is located on the right side when the unit is orientated so that you can read the Symphony logo, changes colors from yellow (initializing) to green (operational). If the LED turns red, try recycling power to the Cordless Gateway. If the LED remains red, contact Symphony Technical Support for assistance.

- The Cordless Network Activity LED, in the center, blinks yellow when the Cordless Gateway receives data from the cordless network.

- The Ethernet LED, on the left side, blinks green when the Ethernet Bridge receives data over the 10BaseT Ethernet connection.

The LEDs on the back panel perform the following functions:

- The green "Link" LED, located to the right of the 10BaseT connector, illuminates when a physical connection exists between the Cordless Gateway and an attached Ethernet-ready device. However, this LED reflects Ethernet activity as well as link integrity. Therefore, when a proper 10BaseT cable is attached and there is Ethernet activity, the LED will blink off momentarily; when a damaged or improper 10BaseT cable is attached and the unit attempts to send data through its Ethernet port, the LED will blink on momentarily.

- The green "Master" LED, located to the left of the DC power jack, illuminates when the Cordless Gateway is operational

Symphony Adapters

Symphony PNP ISA Card

The Symphony PNP ISA Card fits into a 16-bit ISA-bus slot in your computer. The ISA slot is typically a black plastic casing surrounding two rows of gold connectors on the computer's motherboard. If you cannot identify an ISA slot, refer to your PC's manual for assistance. Follow these steps to install the ISA Card and the antenna:

1. Turn off your computer and unplug its power cord from the wall outlet for safety purposes.

2. Remove the computer cover.

3. Locate an unused ISA slot and refer to your PC's manual for instructions on how to remove the plate that covers the slot, if one exists.

4. Align the Symphony ISA Card over the empty slot. Firmly insert the card into the slot.

5. Secure the card's metal bracket to the computer following the directions provided in your PC's manual.

6. Replace the computer cover and plug the computer's power cord back into the wall.

7. Locate the antenna connector on the Symphony ISA Card.

8. Snap on the end of the antenna cable to the connector. Place the antenna on top of your desk, computer, or monitor.

9. Turn on the computer and refer to the software installation procedure described in Chapter 4.

Symphony PCI Card

The Symphony PCI Card fits into a PCI-bus slot in your computer. The PCI slot is typically a beige or off-white plastic casing surrounding two rows of gold connectors on the computer's motherboard. If you cannot identify a PCI slot, refer to your PC's manual for assistance. Follow these steps to install the PCI Card and the antenna:

1. Turn off your computer and unplug its power cord from the wall outlet for safety purposes.

2. Remove the computer cover.

3. Locate an unused PCI slot and refer to your PC's manual for instructions on how to remove the plate that covers the slot, if one exists.

4. Align the Symphony PCI Card over the empty slot. Firmly insert the card into the slot.

5. Secure the card's metal bracket to the computer following the directions provided in your PC's manual.

6. Replace the computer cover and plug the computer's power cord back into the wall.

7. Locate the antenna connector on the Symphony PCI Card.

8. Snap on the end of the antenna cable to the connector. Place the antenna on top of your desk, computer, or monitor.

9. Turn on the computer and refer to the software installation procedure described in Chapter 4.

Symphony PC Card

The Symphony PC Card fits into a standard Type II PCMCIA slot in your computer. Follow these steps to install the PC Card and the antenna.

1. Locate the antenna connector on the end of the PC Card.

2. Attach the snap-on antenna to the PC Card's antenna connector.

3. Shut down your laptop or notebook computer.

4. Insert the PC Card into the laptop or notebook computer.

5. Turn on the laptop or notebook computer and refer to the software installation procedure described in Chapter 4.

Note:

Do not remove the Symphony PC Card from the PCMCIA slot while the computer is operational without first stopping the card. Go to the PC Card (PCMCIA) icon in the Control Panel and highlight the Symphony PC Card entry. Click <Stop> and remove the card when prompted.

Symphony USB Adapter

The Symphony USB Adapter is very easy to install. The USB Adapter has a built-in antenna so the antenna does not require installation. Also, the USB port powers the adapter so the USB Adapter does not require a power cable. Follow these steps to install the USB Adapter.

1. Place the USB Adapter on top of your desk, computer, or monitor.

2. Connect the USB Adapter's cable to a free USB port on the computer.

3. Turn on the computer and refer to the software installation procedure described in Chapter 4.

4. Installing the Symphony Software

The Symphony-HRF Cordless Gateway requires no software installation. However, you must load Symphony software on each computer in which you installed a Symphony Adapter.

The software installation for a Symphony Adapter occurs in two phases. The first phase, described in this chapter, is the successful initialization of a Symphony Adapter in a desktop or laptop computer. The second phase, described in Chapter 5, configures a computer to communicate with the rest of the cordless network using the Symphony Composer Installation Wizard to guide you through the process.

The following procedure provides an overview of how to install a Symphony Adapter in a Windows 95/98 computer. For detailed instructions and troubleshooting suggestions, refer to Chapter 4 of the Symphony Adapters User's Manual. Once the software has been successfully installed, refer back to Chapter 5 of this manual for configuration instructions.

If you have an existing Symphony Cordless Network and now want to upgrade the network to include a Symphony-HRF Cordless Gateway, refer to Chapter 9 for instructions. For information on how to upgrade a Cordless Gateway's firmware or the Symphony software for Cordless Gateway clients, refer to Chapter 10.

If you are planning to install Symphony software on a computer equipped with a Proxim RangeLAN2 Card that already has the RangeLAN2 driver loaded, proceed to Appendix B for specific installation instructions.

Finally, before beginning the installation of a Symphony Adapter, confirm that you have a Windows CD or diskettes available (either Windows 95 or Windows 98, depending on the computer's operating system). You will be prompted to insert a Windows CD during the installation.

If you do not have a Windows CD or diskettes, it is possible that you already have the Windows 95 or Windows 98 installation files on your hard disk. These Windows installation files are known as Windows Cabinet files or CAB files. The Windows Cabinet files are commonly located in C:\WINDOWS\OPTIONS\CABS.

Warning!

You must have either the Windows CD, diskettes, or Cabinet files to complete the installation of the Symphony Card. Do NOT proceed with the installation until you have confirmed that you have one of these Windows 95 or Windows 98 installation media available.

Follow these steps to install Symphony software on a computer running Windows 95 or Windows 98.

1. Install the Symphony Adapter hardware as described in Chapter 3.

2. Turn on the computer. Windows 95/98 will automatically detect the new device. Windows will recognize the Symphony PC Card as a "PROXIM-LAN PC CARD," the Symphony PCI Card as a "PCI Network Controller," the Symphony PNP ISA Card as a "Symphony Cordless PnP ISA Card," and the Symphony USB Adapter as a "Symphony USB Adapter."

3. Choose <Cancel> to close the Windows 95/98 installation wizard.

4. When the Windows (95 or 98) desktop appears, insert the Symphony Installation CD, shipped with the Symphony Adapter, into the computer's CD-ROM drive.

5. The Symphony Installation program will be launched automatically and display the following dialog box:

However, if this screen does not appear, then go to the My Computer icon on the Windows desktop and double-click the drive letter that corresponds to the CD-ROM drive (typically, this is drive D) to browse the Symphony Installation CD. Double-click the icon labeled “SETUP.EXE” to manually launch the Setup program.

6. Click <Install Now> to continue with the standard installation. By default, the Symphony installation files are copied to a directory named C:\PROGRAM FILES\SYMPHONY. If you want the Symphony files to be installed in a different directory, click the <Customize> option and then choose the <Change Folder> option to select a new destination folder. Click <Next> to continue.

7. Regardless of whether you chose the <Install Now> option or the <Customize> option, you will now be prompted to choose the adapter type that matches your Symphony Adapter.

Place a check mark next to the entry for the Symphony PC Card, the Symphony PNP ISA Card, the Symphony PCI Card, or the Symphony USB Adapter (depending on the type of card being installed) and click <Install Now>. If you are using a product not on the list, place a check mark next to the entry labeled “Others ...” to view additional options.

8. Please be patient while the installation program copies the necessary Symphony installation files from the Symphony CD.

9. Insert your Windows 95 or Windows 98 CD if prompted. If you do not have a Windows CD, but you have Windows diskettes or the computer has the Windows Cabinet files, direct Windows to look for the Windows files in the Cabinet directory, which is typically located in C:\WINDOWS\OPTIONS\CABS\.

Note:

If the installation wizard cannot locate a particular file, do NOT skip the file. Instead, try to locate the file on the Windows CD, within the Windows CAB directory, or within the C:\Windows\ and C:\Windows\System directories. In order for the Symphony Adapter to install correctly, the installation wizard must find and copy all of the files that it is looking for.

10. The computer will copy all of the Windows files required to complete the installation of the Symphony Adapter. If the computer prompts you that a file you are copying is older than the one currently on the system, keep the existing file by clicking the <Yes> button.

11. The Symphony Installation program will report when the installation has been successfully completed. Restart the computer when prompted.

12. Windows will make some final adjustments to the system. Leave the Windows CD in the CD-ROM drive: Windows may need to copy additional files from the CD. Restart the computer a second time if prompted.

13. After the computer restarts, you may be prompted to enter either a Windows password or a network password before proceeding. If you have an existing User name and Password, type in the Password and click <Enter>, or simply click <Enter> if your Password is blank. This step will enable the computer's network functionality. Do NOT choose the <Cancel> option.

Also, write down your User name and Password for future use; you will need to enter this information each time you logon to the cordless network.

Note:

You must enter a User name and Password to logon to the network. If you choose <Cancel>, you will be unable to access network resources.

14. The Symphony Composer Installation Wizard will now initialize and display the Welcome message. Proceed to Chapter 5 for information on how to use the Symphony Composer Installation Wizard.

If the Symphony Composer Welcome message does not appear, or if you are prompted that the Symphony Adapter is not working properly, refer to the troubleshooting procedure in Chapter 4 of the Symphony Adapters User's Manual that ships with each Symphony Adapter. Once the adapter has been successfully installed, refer back to Chapter 5 of this manual for configuration instructions.

Hint:

If you have problems installing a Symphony Adapter, refer to Chapter 4 of the Symphony Adapters User's Manual for detailed installation and troubleshooting instructions.

5. Symphony Composer Installation Wizard

The installation of a cordless network occurs in two phases. The first phase, described in Chapter 4, is the successful initialization of a Symphony Adapter in a desktop or laptop computer. The second phase configures a computer to communicate with the other devices on the cordless network. The Symphony Composer Installation Wizard guides you through the second phase of the installation process.

Once a Symphony Adapter has been successfully initialized, the Symphony Composer will be launched automatically and display the Welcome screen, shown below.

The Symphony Composer provides a friendly user interface to make configuration fast and easy. Each configuration option is explained in detail as you navigate through the Composer's installation screens. Be sure to read all of the on-screen instructions carefully before making a selection and proceeding to the next screen. At any time, you may choose the <Back> button to return to an earlier screen and change a previous selection.

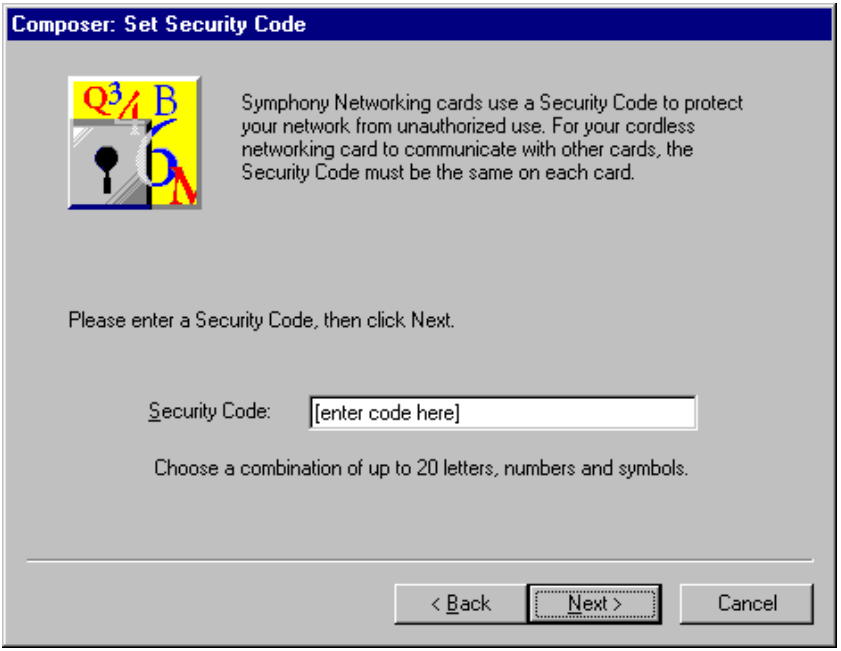
Note:

Confirm that the Cordless Gateway is powered on before proceeding with the configuration of the Symphony-enabled computers.

Click <Next> to begin configuring the Symphony network.

Step 1: Select a Security Code

The Symphony Composer will prompt you to choose a Security Code for the cordless network, as shown below.

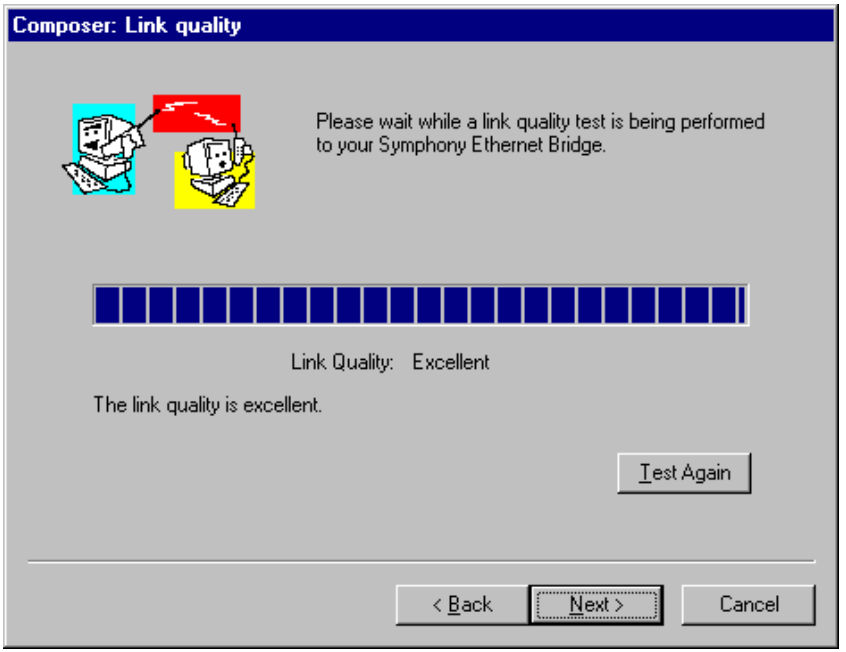


A Security Code is a string of up to 20 alphanumeric characters stored on all communicating Symphony devices. This string must match on all Symphony products to achieve communication. You must use the same Security Code on each Symphony device, and the Security Code is case sensitive.

When configuring the first Symphony-enabled computer on a network, enter a Security Code that will be easy for you to remember and click <Next>. The Symphony-HRF Cordless Gateway will adopt this Security Code. Remember to use the same Security Code when configuring the other Symphony-enabled computers on the network.

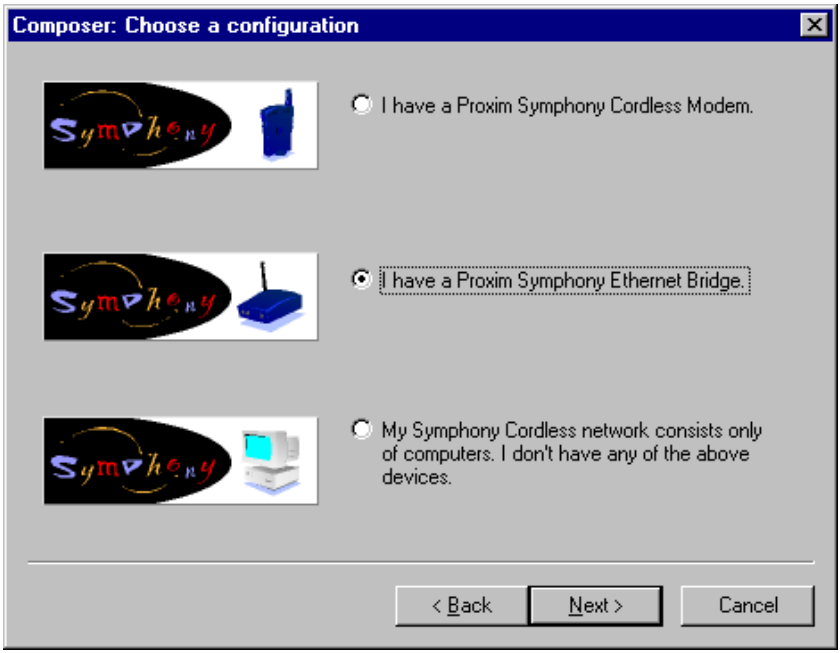
Step 2: Establish Communication With the Cordless Gateway

After you have configured the Security Code, the Composer will attempt to automatically detect the Symphony-HRF Cordless Gateway and test the wireless link, as shown below:



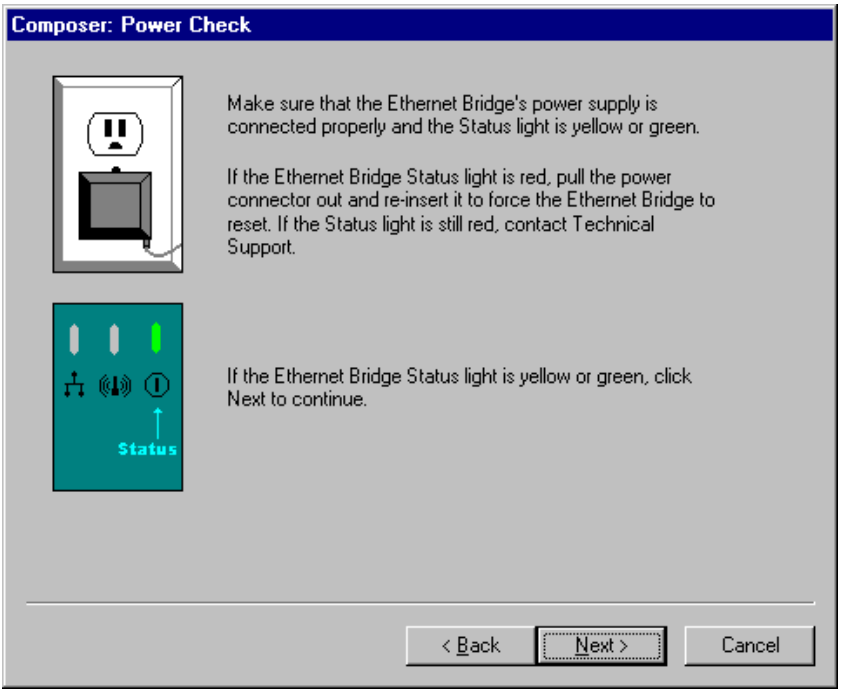
Click <Next> to continue and proceed to Step 3.

If the Composer cannot communicate with the Cordless Gateway, it will prompt you to manually select a network configuration, as shown below.



If this screen appears, then the Cordless Gateway is not powered on, the Security Code you entered does not match the Cordless Gateway's Security Code, or the computer is out of range of the Cordless Gateway. If you have previously configured other Symphony-enabled computers on the network, confirm that you are using the correct Security Code. Also, try to bring the computer and the Cordless Gateway closer together before proceeding.

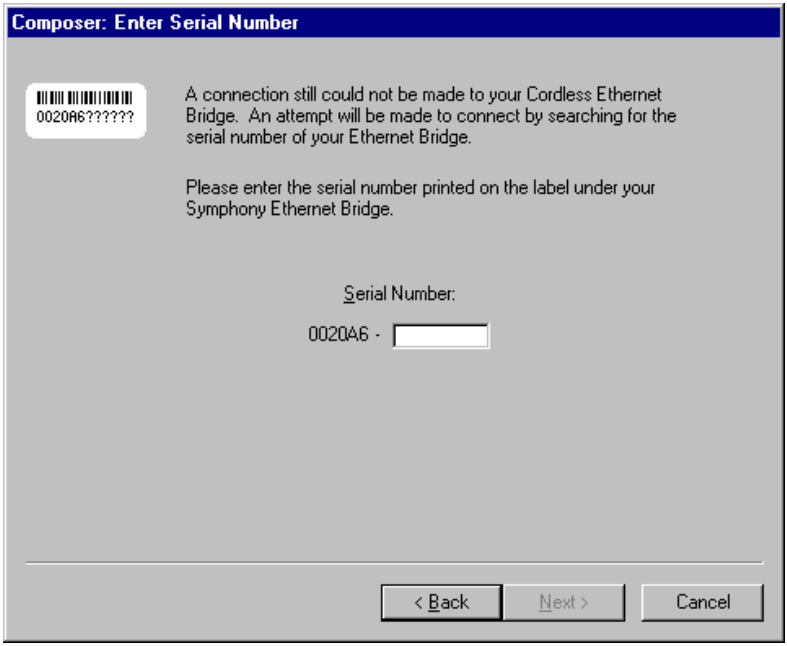
Select the option labeled "I have a Proxim Symphony-HRF Cordless Gateway" and click <Next>. You will be prompted to confirm that the Cordless Gateway is powered on and operational, as shown below.



Confirm that the Cordless Gateway is powered on and operational and click <Next> to continue.

If the Composer cannot locate the device, you will be prompted to reenter the Security Code. If this is not the first Symphony-enabled computer you are configuring, confirm that the Security Code is correct and click <Next> to continue.

If the Composer still cannot locate the Cordless Gateway, it will prompt you to enter the last six (6) digits of the device's serial number, as shown below.



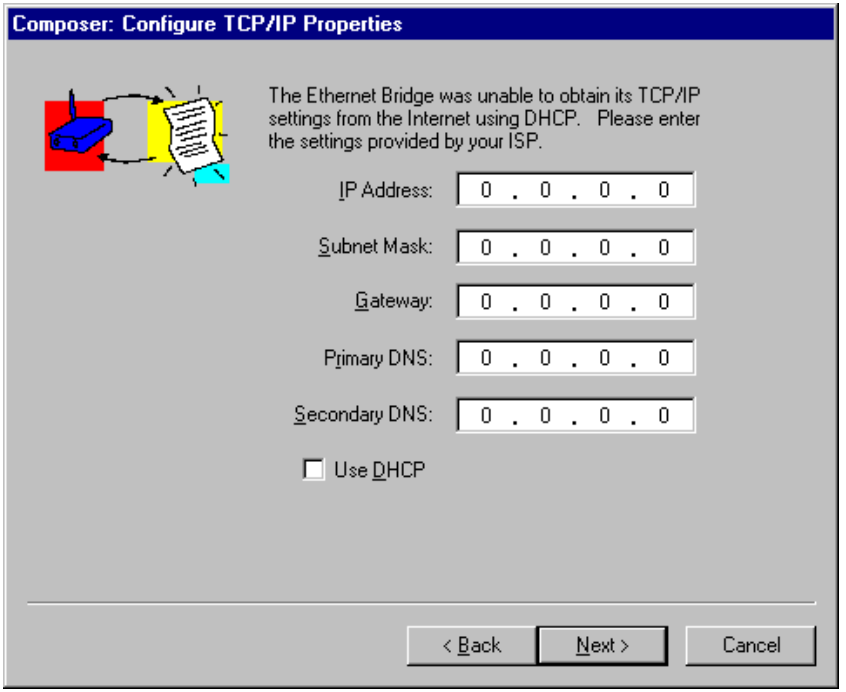
The serial number is located on the underside of the Symphony-HRF Cordless Gateway. Enter the last six digits of the serial number and click <Next>. The Symphony Composer should now be able to communicate with the Cordless Gateway and should perform a link test. Click <Next> to continue.

However, if problems persist, try moving the Cordless Gateway and the computer closer together; the computer may be out of range of the Cordless Gateway. Also, you may want to contact Symphony Technical Support for assistance and additional suggestions.

Step 3: Configure TCP/IP Information

When configuring the first Symphony-enabled computer on a network, the Cordless Gateway will request IP Addressing information from your ISP's DHCP (Dynamic Host Configuration Protocol) server.

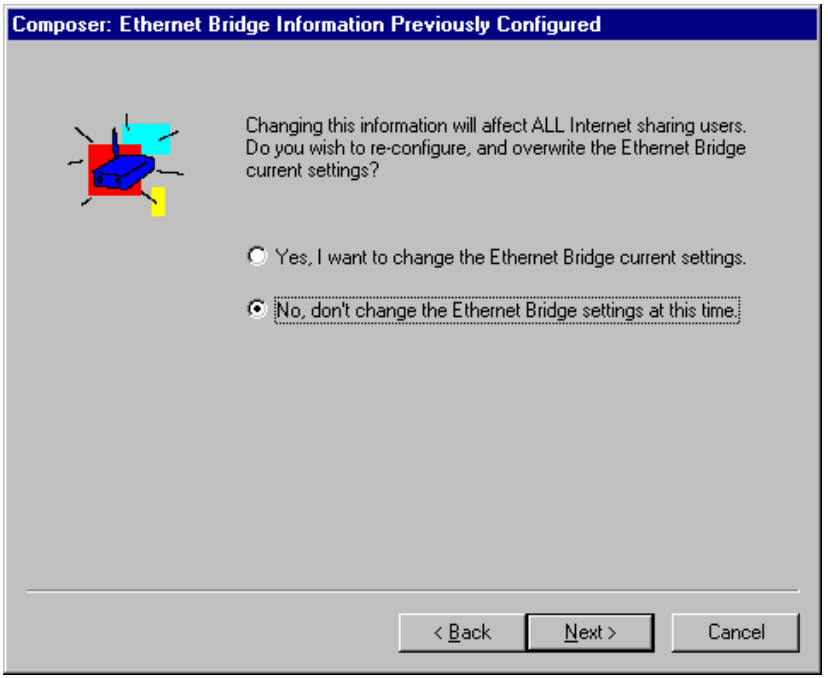
If the Cordless Gateway cannot receive an IP Address from the ISP's DHCP Server, the Composer will prompt you to enter the static TCP/IP information assigned to you by the ISP (Internet Service Provider), as shown below.



If you believe that your ISP uses DHCP to assign dynamic IP Addressing information, place a check mark next to the box labeled "Use DHCP" and click <Next> to continue. Otherwise, enter the TCP/IP parameters assigned to you by the ISP into the fields provided. This includes IP Address, Subnet Mask, Gateway address, and primary and secondary DNS addresses, if applicable. If you do not have this TCP/IP information, contact your ISP for assistance.

If you plan to use the Cordless Gateway in Transparent Bridging mode only to communicate with a wired Ethernet network, leave these fields blank and click <Next> to continue. Refer to Chapter 7 for more information on these parameters.

If you have previously configured the Cordless Gateway's TCP/IP information, the Composer will give you the option to change the existing settings, as shown below.



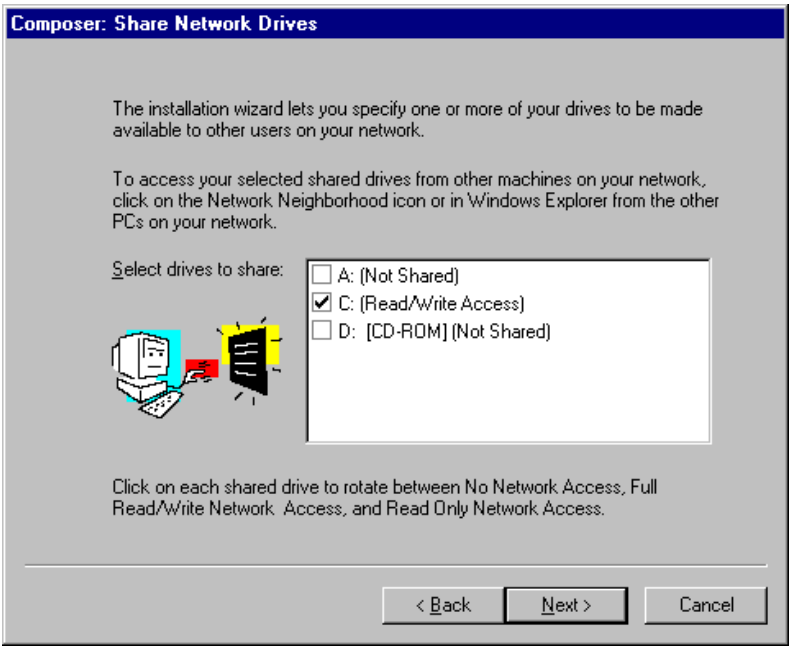
If you do not wish to change any TCP/IP information at this time, select the "No, don't change the Cordless Gateway settings at this time" option and click <Next>.

Step 4: Assign a Computer Name

In a peer-to-peer network, each computer is assigned a name so that it can be easily identified by the other devices on the network. The Symphony Composer Installation Wizard will determine if your computer has already been assigned a name. If a name is not found, the Symphony Composer will prompt you to give the computer a name. The computer name may be up to 15 alphanumeric characters long.

Step 5: Select Drives and Printers to Share

The Symphony Composer will generate a list of the computer's hard drives, CD-ROM drives, floppy drives, and printers that may be shared with other computers on the cordless network. Simply check the box to the left of each resource entry to allow other computers to access that particular resource over the network, as shown in the example below.

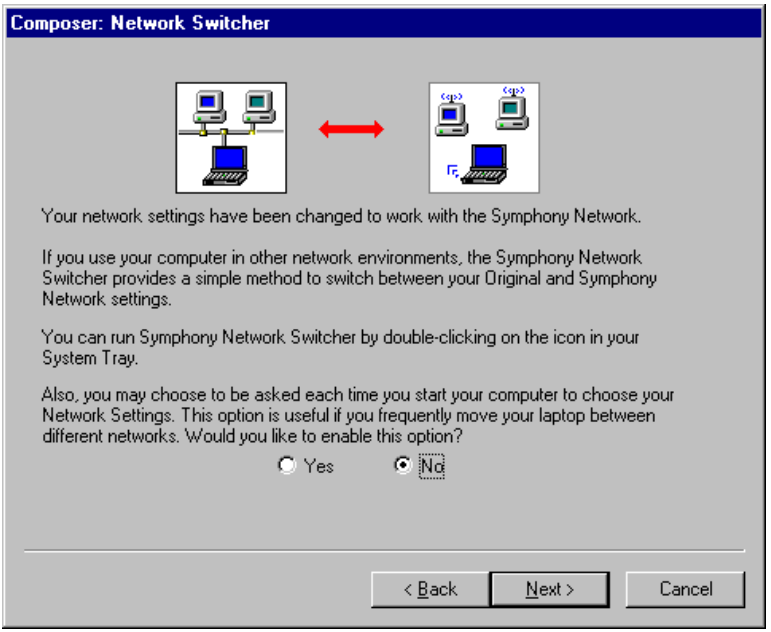


Note that if you click the box to the left of a resource multiple times you can toggle between several access levels that may be granted to remote users. The options are Read/Write access, Read Only access, or no access. If you configure a drive with Read/Write or Read Only access, Proxim recommends that you establish a password to prohibit unauthorized access. Depending on the type of Internet connection you have, others may be able to see your computers in their Network Neighborhood and have unauthorized access to your drives.

You may change the access type and establish passwords using the Symphony Maestro Configuration Tool. See the File Sharing discussion in Chapter 7 for details.

Step 6: Configure Switcher Prompt at Boot-up

The Symphony Network Switcher program includes an optional DOS prompt that will appear each time the computer boots up; this is a convenient method to switch between network profiles for users who frequently transport a laptop between networks. Depending on the configuration of the computer, the Symphony Composer Installation Wizard may prompt you to decide whether or not want this prompt to appear each time the computer boots up, as shown below.



If you decide later that you want to enable or disable the Switcher DOS prompt, you can reconfigure this feature within the Network Switcher configuration screen. See Chapter 8 for more information on the Network Switcher.

When you have completed the configuration of the Symphony settings described above, restart the computer if prompted.

Step 7: Register Symphony Products

Following the successful completion of the Symphony Composer Installation Wizard, you will be given an opportunity to register your Symphony product on-line, as shown below.

Click <Yes, Register Now> to be taken to the Symphony Registration Web site. If you choose not to register at this time, you can click the <Remind Me Later> button to be prompted each time you turn on or restart the computer. If you do not want to be prompted to register again, click <No, Thank You>.

Alternatively, you may register at any time by right-clicking the Symphony icon, located in the Windows System Tray. Choose “About” from the drop-down list and then click <Register>.

Hint:

The Composer may be relaunched at any time from the Symphony group under the Programs section of the Start Menu to reconfigure the cordless network. See Chapter 9 for more information on how to reconfigure a cordless network.

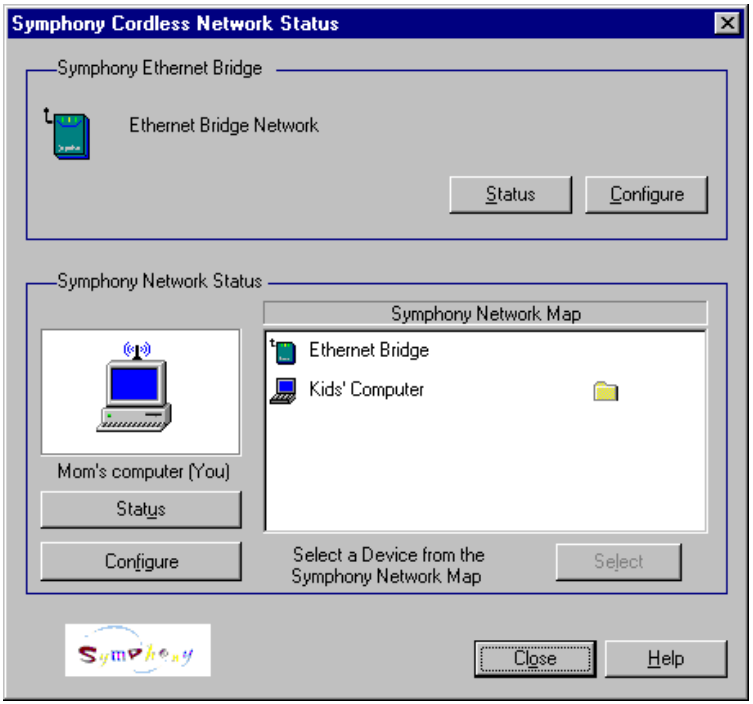
6. Symphony Maestro Configuration Tool

The Symphony Maestro Configuration Tool lets you make changes to the cordless network and monitor its current status.

After the Composer completes the installation of the cordless network, the Maestro Configuration Tool will display a Symphony icon in the Windows System Tray, as shown below:

Double-click the Symphony icon to launch the Maestro tool. Alternatively, right-click the Symphony icon and choose "Status," as shown below.

Either method will launch the Maestro Configuration Tool, shown below.



The Maestro tool has two functions: it monitors the current state of both the cordless network and the Cordless Gateway, and it allows the user to reconfigure the cordless network and Cordless Gateway parameters.

Below is a brief overview of the key features incorporated into the Maestro Configuration Tool when using the Symphony-HRF Cordless Gateway. Refer to the Online Help documentation for additional details on how to use each of these features and for information on additional features not discussed below.

Maestro Features for the Cordless Gateway

The Symphony Maestro allows you to configure and monitor the following Cordless Gateway functions:

Monitor the State of the Cordless Gateway

On the main page of the Maestro Configuration Tool, under the "Symphony-HRF Cordless Gateway" heading, there is a picture of the Cordless Gateway which will change color to reflect different states of connectivity. When the Cordless Gateway icon is turquoise, the Symphony-enabled computer is successfully communicating with the Cordless Gateway. When the Cordless Gateway icon is red, the computer cannot communicate with the Cordless Gateway, typically because the Cordless Gateway is not operational, the computer is out of range, or the Security Codes do not match.

Note that the Symphony icon in the Windows System Tray will also change color to reflect different states of radio connectivity.

Configure the Cordless Gateway to allow Internet Sharing

The Cordless Gateway can perform both Transparent Bridging and Network Address Translation (NAT). By default, the Cordless Gateway performs both these functions and will accept an IP Address from a DHCP server.

You may change these values by clicking the <Configure> button under the Symphony-HRF Cordless Gateway heading. From this screen, you may configure the Cordless Gateway with static TCP/IP settings assigned by your ISP and configure the device to perform NAT, Transparent Bridging, or both.

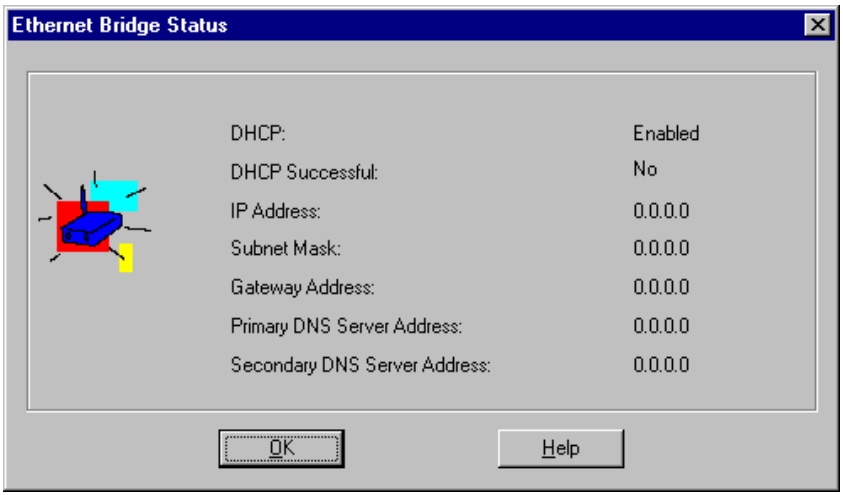
In addition, you may configure the TCP/IP Addressing scheme that the Cordless Gateway uses to communicate with Symphony-enabled computers when operating in NAT mode. See Chapter 7 for detailed information on these parameters.

Upgrade the Symphony-HRF Cordless Gateway

If a new firmware file becomes available for the Symphony-HRF Cordless Gateway, you may upgrade the unit to this new version using the Maestro Configuration Tool. Click the <Configure> button under the "Symphony-HRF Cordless Gateway" heading and click the <Upgrade> tab to display the Upgrade screen. This screen displays the current version of the Cordless Gateway's firmware and allows you to upgrade the firmware version on the Symphony-HRF Cordless Gateway either from a file on a diskette or from the Symphony Web site. Refer to Chapter 10 for detailed upgrade instructions.

Monitor the Cordless Gateway's Status

A user may monitor the status of the Cordless Gateway's TCP/IP settings from the ISP by clicking the <Status> button under the Symphony-HRF Cordless Gateway heading. Among other things, the Cordless Gateway Status screen reports whether or not the Cordless Gateway successfully received an IP Address from a DHCP server, as shown below.



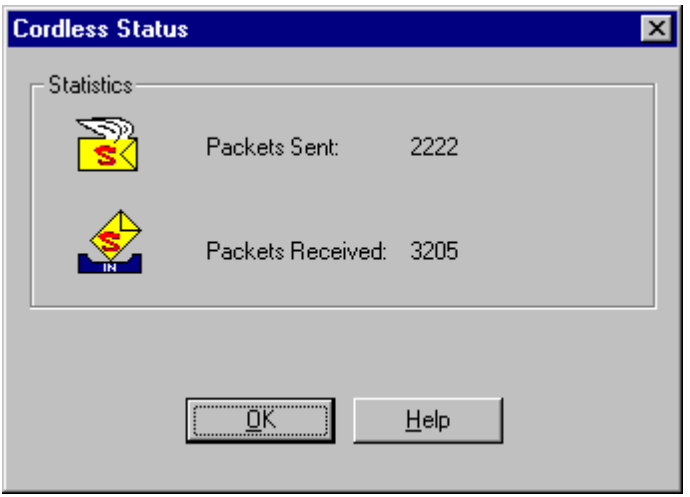
Refer to Chapter 7 for more information on these parameters.

Maestro Networking Features

The Symphony Maestro Configuration Tool allows you to configure and monitor the following network functions:

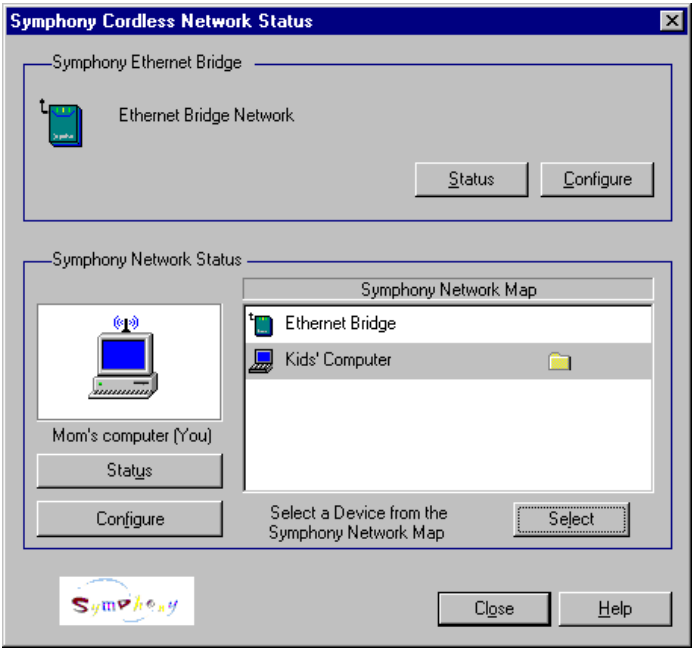
Obtain Network Status Information

The Symphony Maestro Configuration Tool reports the number of packets sent and received by the Symphony Adapter while communicating with the cordless network. Click the <Status> button under the Symphony Network Status heading to view the Cordless Status screen shown below.

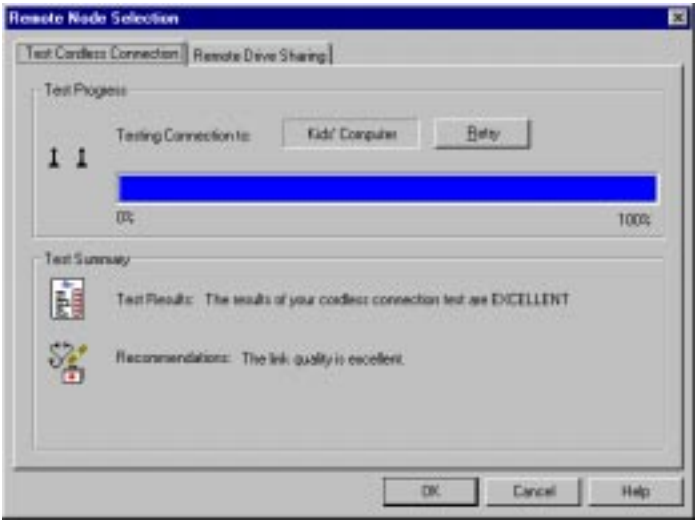


Test Cordless Connection

The Symphony Maestro reports the identities of the other members of the cordless network in the Symphony Network Map. You may test the strength of the cordless connection between your computer and any other member of the cordless network. Simply highlight one of the other computers in the Symphony Network Map, as shown below.



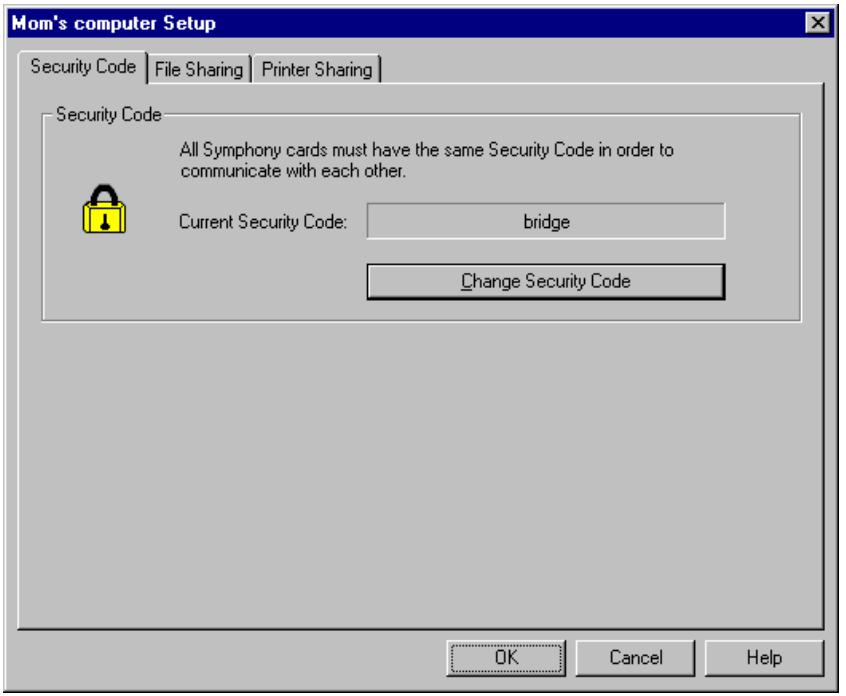
Click <Select> to perform the link test, as shown below.



Maestro will rate the connection strength as “Excellent,” “Good”,” or “Poor,” depending on the results of the test. Double-clicking one of the entries will also open the “Test Cordless Connection” window.

Configure Network Parameters

From within the Maestro Configuration Tool, you may change the Security Code and which drives, directories, and printers are available for sharing by clicking the <Configure> button under the Symphony Network Status heading. This will display the computer’s Setup screen, as shown below.



Click the appropriate tab to change which drives, directories, and printers are available for sharing. Note that the Maestro Configuration Tool allows you to designate specific directories to share. Therefore, rather than sharing an entire drive, you can customize the amount and location of information that is available to other users on the network. Refer to the section entitled “File Sharing” in Chapter 7 for additional details.

Remote Drive Sharing

The Symphony Maestro allows you to attach a remote shared drive or directory to a drive letter on the local computer. Highlight one of the other Symphony computers in the Symphony Network Map and click <Select> or simply double-click one of the entries. Then, click the "Remote Drive Sharing" tab to utilize this feature. Refer to the section entitled "Remote Drive Sharing" in Chapter 7 for additional information about this feature.

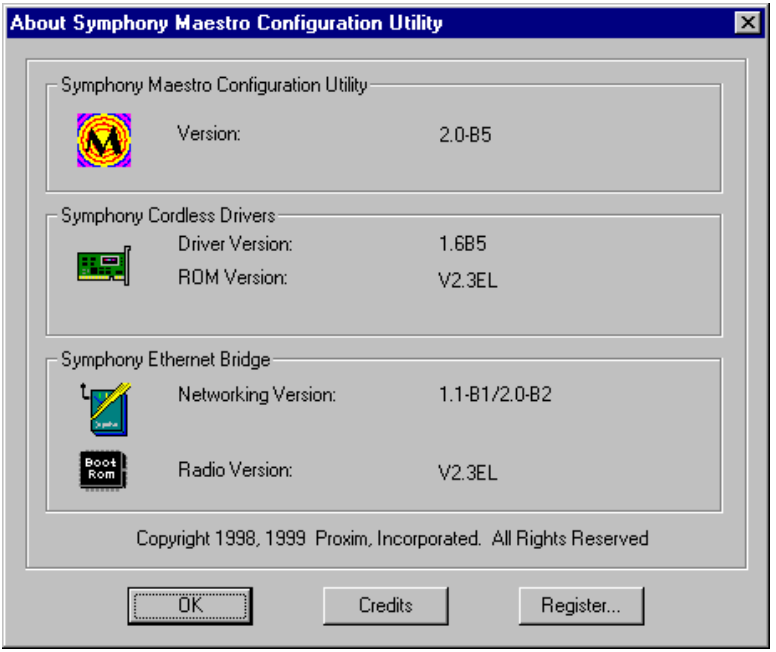
Maestro Administrative Features

The Symphony Maestro Configuration Tool also includes the following administrative features:

Determine Software Version in Use

To view information about the Symphony software versions currently in use, right-click the Symphony icon in the Windows System Tray and choose About, as shown below.

This will display the "About Symphony Maestro Configuration Utility" screen, as shown below.



Register Products on Proxim's Web Site

At any time you may register your Symphony products on-line at Proxim's web site. If you did not register your Symphony products following the completion of the Symphony Composer Installation Wizard, simply click the <Register> button in the "About Symphony Maestro Configuration Utility" screen, shown above, to be taken to the Symphony Registration Web site.

7. Configuring a Cordless Gateway Network

This chapter describes how to configure the Cordless Gateway to allow Symphony-enabled computers to share a high-speed Internet connection and/or communicate with devices on a wired Ethernet network. In addition, this chapter includes instructions for how to share files between computers using the Maestro Configuration Tool and how to print to a network printer.

Cordless Gateway Configuration

From within the Symphony Maestro Configuration Tool, a user may configure the TCP/IP parameters and operating mode of the Cordless Gateway. These options are described in detail below. In addition, refer to the section entitled, "Configuration Examples," to help you determine what configuration changes, if any, are required for your network devices.

Configuring the Topology Parameter

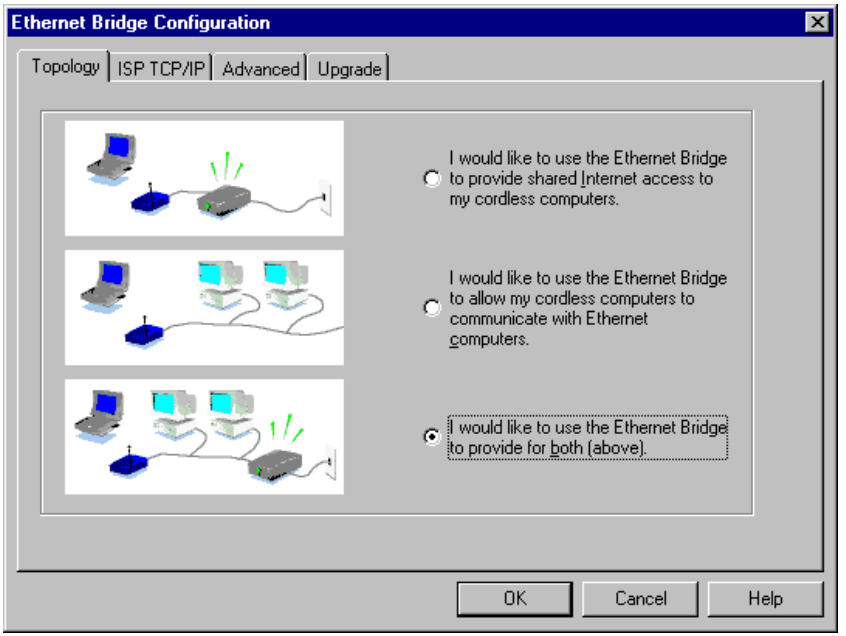
The Cordless Gateway performs two important networking functions: Network Address Translation (NAT) and Transparent Bridging. NAT allows the Cordless Gateway to share a high-speed Internet connection with its cordless clients using a single IP Address assigned by the ISP.

Transparent Bridging allows Symphony-enabled cordless computers to communicate with wired Ethernet computers as if all devices, wired and cordless, were attached to the same physical network. In reality, the Symphony Cordless Network and the wired Ethernet network use two different methods to communicate: one sends messages over a cable and the other sends messages over radio waves. However, when the Cordless Gateway is connected to both networks and is operating in Transparent Bridging mode, all devices, wired and cordless, appear to be on the same Local Area Network (LAN). This allows devices to share network resources, such as files or printers, with one another. The Cordless Gateway acts as the intermediary between the two networks.

When performing NAT, the Cordless Gateway also acts as an intermediary between networks, but the two networks will not appear to be on the same LAN. Therefore, a computer on one network will not have direct access to the shared files or printer of a computer on the second network. When performing NAT, a Cordless Gateway uses two IP Addresses: one address assigned by the ISP to communicate with the Internet and one to communicate with the Symphony-enabled client computers. For information on the IP

Address that the Cordless Gateway uses to communicate with the Internet or an Ethernet network, see the section entitled “Configuring the ISP TCP/IP Settings.” For information on the IP Address that the Cordless Gateway uses to communicate with Symphony clients, see the section entitled “Configuring the Internal TCP/IP Settings.”

The Cordless Gateway may be configured for two modes of operation: NAT and Transparent Bridging. In addition, by default, the Cordless Gateway is configured to perform both tasks simultaneously. This default setting should work for many network configurations, but it may be changed within the Symphony Maestro Configuration Tool. Click the <Configure> button under the Symphony-HRF Cordless Gateway heading and choose the Topology tab to change the device’s operating mode.



In the screen shot above, the first option refers to NAT mode only, the second option refers to Transparent Bridging mode only, and the third option, which is the default setting, corresponds to using both modes simultaneously.

Most networks will use option 3, the default setting, that allows the Cordless Gateway to perform both NAT and Transparent Bridging. However, if your network requires that the Cordless Gateway not perform NAT, you will want to reconfigure the Cordless Gateway to use option 2.

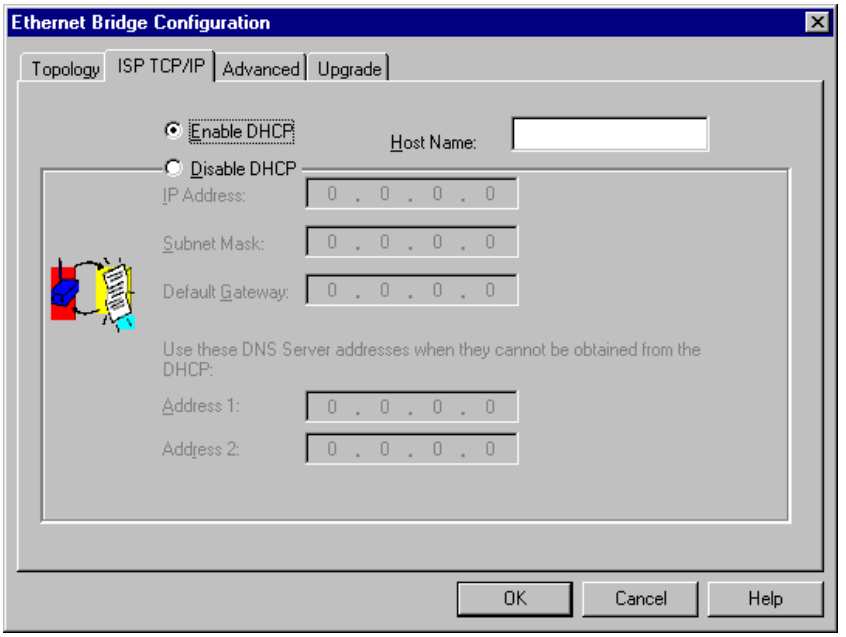
Refer to the section entitled "Configuration Examples" for assistance in determining what configuration changes, if any, are required for your network devices.

Configuring the ISP TCP/IP Settings

The Symphony-HRF Cordless Gateway performs a function known as Network Address Translation (or NAT) in order to allow multiple Symphony-enabled computers simultaneous access to the same high-speed Internet connection. This function requires that the Cordless Gateway be assigned an IP Address obtained from your ISP.

The Cordless Gateway is configured to accept a dynamic IP Address assignment from a DHCP (Dynamic Host Configuration Protocol) server by default. If your ISP uses DHCP to assign dynamic IP information and you do not have an existing wired Ethernet network in your home, then you do not need to change the configuration of the Cordless Gateway. However, if your ISP has assigned you a fixed or static IP Address, then you will need to configure the Cordless Gateway to use this TCP/IP information.

To configure the Cordless Gateway's ISP TCP/IP settings, open the Symphony Maestro Configuration Tool on one of the Symphony-enabled computers acting as a Cordless Gateway client. Select the "ISP TCP/IP" tab within the Cordless Gateway Configuration screen, as shown below. Note that this information is not applicable when the Cordless Gateway is operating in Transparent Bridging mode.



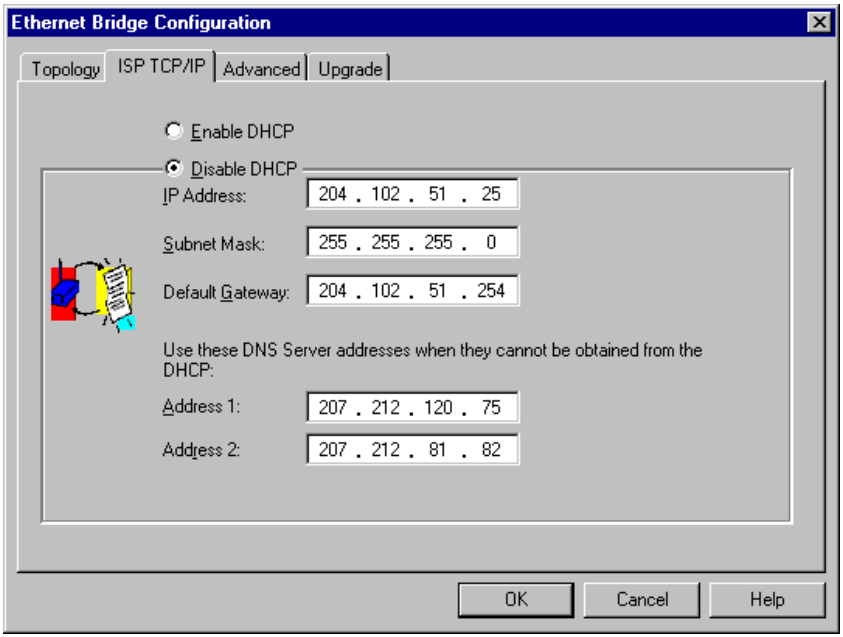
As described above, the Cordless Gateway is configured to use DHCP by default. In addition, some ISPs assign Computer or Host Names to validate your identity before assigning a dynamic IP Address. If your ISP has assigned you a Computer or Host Name, enter this name in the "Host Name" field.

Note:

If your ISP uses a Host Name for authentication purposes, the Cordless Gateway will receive an IP Address from the ISP's DHCP server only after you configure the Host Name parameter.

If your ISP has assigned you a static IP Address and DNS (Domain Name Service) server addresses, click the "Disable DHCP" option and enter the TCP/IP information obtained from your ISP in the appropriate fields.

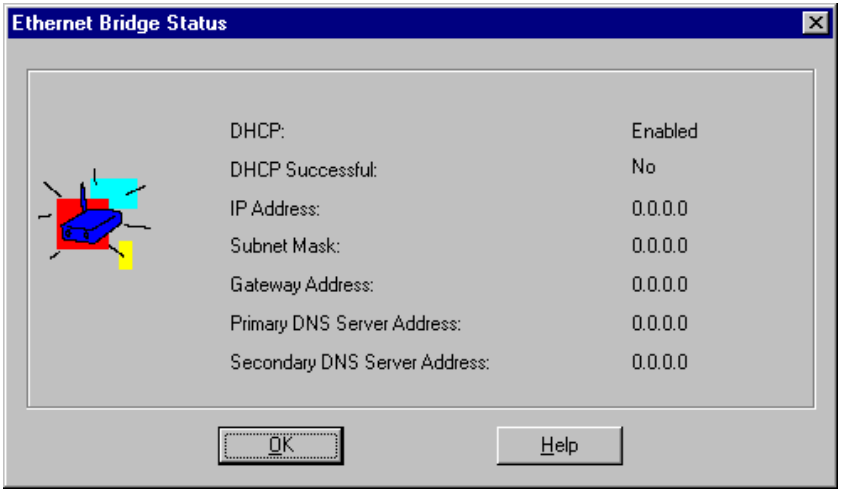
In the example below, the Cordless Gateway has been assigned an IP Address of 204.102.51.25 with a Subnet Mask of 255.255.255.0. The default gateway is 204.102.51.254, and two DNS server addresses have been specified: 207.212.120.75 and 207.212.81.82.



Click <OK> to save these changes. The Cordless Gateway will be rebooted in order for these configuration changes to take effect.

If you do not know if your ISP uses a DHCP server to assign addresses, open the Maestro Configuration Tool once the Symphony software has been successfully installed on a Cordless Gateway client. Click the <Status> button under the Symphony-HRF Cordless Gateway heading to view the Cordless Gateway Status screen.

If the Cordless Gateway was assigned an IP Address by a DHCP server on your network or by a server on the ISP's network, then this address will appear in the Cordless Gateway Status screen. If the Cordless Gateway was not assigned an IP Address by a DHCP server, it will report that DHCP was unsuccessful, as shown below.



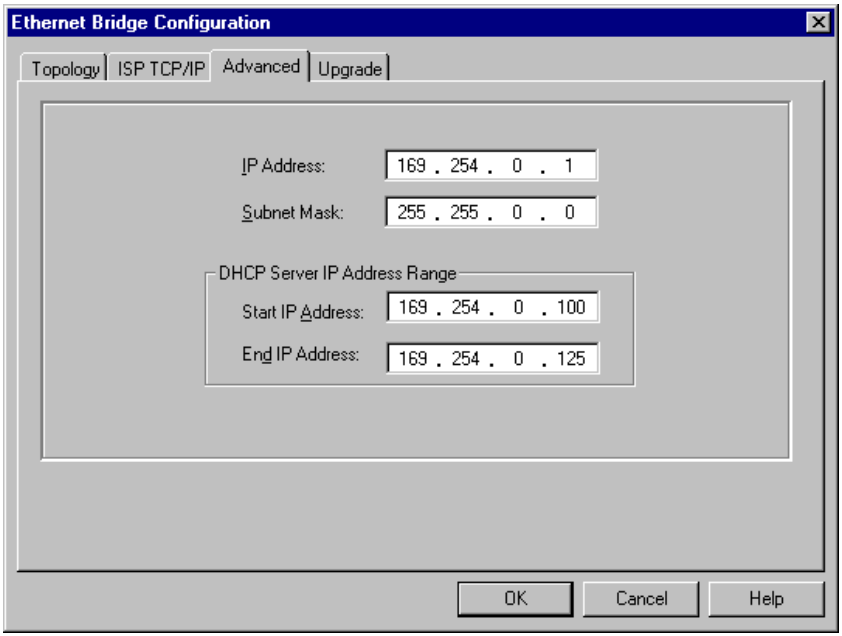
Note:

The Cordless Gateway must be connected to the wired network or to a device that provides high-speed Internet access (e.g., a cable modem) during its boot-up cycle in order to obtain an IP Address from a DHCP server. If you believe that the Cordless Gateway should have received an IP Address from a DHCP server but did not, try recycling power to the unit.

Configuring the Internal TCP/IP Settings

When configured to operate in NAT mode, the Cordless Gateway acts as a DHCP server for Symphony-enabled computers on the network. By default, a Cordless Gateway client is configured to accept a dynamic IP Address from a DHCP server during the Symphony software installation. In addition, the Cordless Gateway is assigned an IP Address that it uses to communicate with the nodes on the cordless network.

By default, the Cordless Gateway is assigned an IP Address of 169.254.0.1 and a Subnet Mask of 255.255.0.0. In addition, the Cordless Gateway can assign Symphony-enabled computers IP Addresses within the range 169.254.0.100 to 169.254.0.125, as shown below.



If this IP Addressing scheme is the same as what is used by your ISP, then you may change the IP Address of the Cordless Gateway and the range of addresses it may assign from within the "Advanced" tab of the Cordless Gateway Configuration screen. Note that the Cordless Gateway will not act as a DHCP server when configured to operate in Transparent Bridging mode only.

Note:

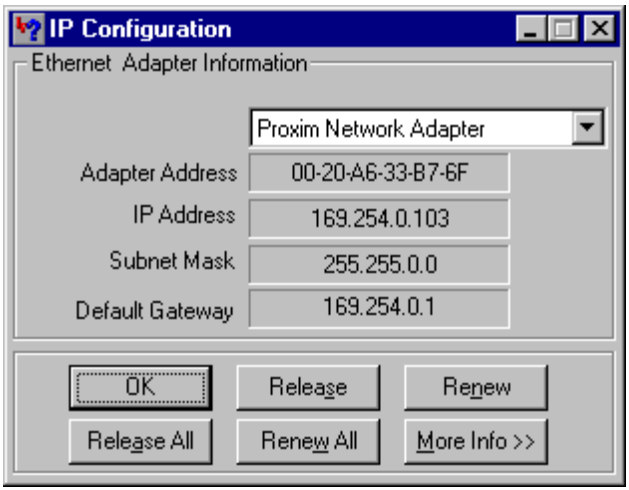
Proxim recommends that only advanced users who are familiar with the TCP/IP protocol change the Cordless Gateway's Internal TCP/IP Settings.

Cordless Gateway Client Configuration

By default, the installation of a Symphony Adapter will add several networking components to a computer's Network Configuration, including Client for Microsoft Networks, the TCP/IP protocol, and File and Printer Sharing for Microsoft Networks, if not already present. The installation procedure will

also assign the computer the workgroup designation of “WORKGROUP.” If the computer already has an existing workgroup name, this name will be overwritten and saved in the Original Network Profile.

During installation, each Symphony Card is configured to accept an IP Address assignment from the Cordless Gateway, which acts as a DHCP server. For more information about this, refer to the section entitled “Configuring the Internal TCP/IP Settings.” To find out what address has been assigned, select the “Run” option under the Start Menu and type “WINIPCFG” in the field labeled “Open.” This will launch the Windows IP Configuration tool. In the example below, the Symphony Adapter has been assigned an IP Address of 169.254.0.103 with a Subnet Mask of 255.255.0.0. All Symphony Cards will be automatically assigned a Subnet Mask of 255.255.0.0.



In addition, each Symphony Card is assigned a default Gateway of 169.254.0.1 and a DNS Server address of 169.254.0.1. 169.254.0.1 is the Cordless Gateway’s default IP Address that it uses to communicate with Symphony clients when performing NAT. These settings allow the computers on the Symphony Cordless Network to simultaneously access the Internet via a Cordless Gateway configured to perform NAT.

For most networks, you should not need to change the TCP/IP parameters for the Symphony Adapters. However, some network configurations, discussed below, require that you change both the IP Addresses of the Symphony Adapters and the operating mode of the Cordless Gateway.

Configuration Examples

The following examples provide configuration information for a number of different network architectures supported by the Symphony-HRF Cordless Gateway. Refer to the heading below that corresponds to the type of network you have installed for configuration instructions.

A Cordless Gateway Connected Directly to a Device That Provides High-Speed Internet Access

If you have a device which provides high-speed Internet access, such as an ISDN router, external cable modem, or external xDSL modem, connected directly to a Symphony-HRF Cordless Gateway, then the network should consist of a number of computers each with a Symphony Adapter installed and a Cordless Gateway connected to the high-speed Internet device.

In this configuration, the following changes are required:

Changes to Cordless Gateway's Topology Parameter. No change is required to this parameter. However, changing the Cordless Gateway mode so that it performs NAT only (instead of both NAT and Transparent Bridging) will not adversely affect network operation.

Changes to Cordless Gateway's TCP/IP Parameters. If your ISP uses DHCP to assign IP Addresses, then no changes to the configuration are necessary. However, if your ISP has assigned you static TCP/IP information (IP Address, Subnet Mask, default Gateway, and DNS Server addresses), then you need to configure the Cordless Gateway's ISP TCP/IP parameters as described in the "Configuring the ISP TCP/IP Settings" section earlier in this chapter.

Changes to Cordless Gateway Clients. No change is required for computers that have a Symphony Adapter installed.

A Cordless Gateway Connected to a Wired Network That Does Not Have Shared Internet Access

If the Cordless Gateway connects to a hub on an existing wired network which does not have shared Internet access, then the network should consist of a number of computers each with a Symphony Adapter installed and a Cordless Gateway connected to either a hub with no more than 8 Ethernet devices attached or to a single stand-alone Ethernet-ready computer.

In this configuration, the following changes are required:

Changes to Cordless Gateway's Topology Parameter. Configure the Cordless Gateway so that it performs Transparent Bridging only.

Changes to Cordless Gateway's TCP/IP Parameters. There are no changes required for these parameters.

Changes to Cordless Gateway Clients. In order for Ethernet-ready computers and Symphony-enabled computers to communicate as part of the same LAN, you must configure all devices (Ethernet and Symphony) to use the same IP network. Since the Cordless Gateway does not act as a DHCP server when in Transparent Bridging mode, you must reconfigure the Symphony-enabled computers with static IP Addresses that match the settings of the Ethernet computers (the TCP/IP settings are located within the Control Panel's Network icon on each computer). Alternatively, if you have a DHCP server already on your network, then no additional configuration is necessary as Symphony-enabled computers should receive an address assignment from the network's DHCP server. Note that once you reconfigure the Cordless Gateway to use Transparent Bridging mode only, you may need to release the Symphony clients' existing IP Addresses using the Windows IP Configuration tool or by restarting the Symphony clients in order for the computers to receive a new IP Address assignment.

Keep in mind that the Symphony Adapter acts like a standard Ethernet card once installed. The Symphony Adapter can use any existing IP Address scheme already in use by Ethernet devices and can also be configured to use any additional networking protocols, such as NetBEUI or IPX/SPX, already installed on the network.

A Cordless Gateway Connected to a Wired Network That Has Shared Internet Access

If the Cordless Gateway connects to a hub on an existing wired network which has shared Internet access, then the network should consist of a number of computers each with a Symphony Adapter installed and a Cordless Gateway connected to a hub with no more than 8 Ethernet devices attached. A device that provides high speed Internet access, such as an ISDN router, cable modem, or xDSL modem, is also connected to the hub or is acting as the hub.

In this scenario, the configuration of the Symphony products is highly dependent upon the specific design of your network. For example, if the high-speed device on the network is a DHCP server or if your ISP uses DHCP, you will want to configure the Cordless Gateway to operate only in Transparent Bridging mode. This will allow all computers (Ethernet and Symphony) to be on the same LAN and share files and printers while having simultaneous access to the Internet.

Alternatively, if you need the Cordless Gateway to perform NAT due to a limited number of IP Addresses assigned by the ISP, then the Cordless Gateway needs to perform both Transparent Bridging and NAT, and the Symphony Adapters need to retain the dynamic IP Address assignments that they receive from the Cordless Gateway. In this case, the computers on the Symphony Cordless Network will have a different IP Address scheme (using addresses in the 169.254.0.0 network) than the computers on the Ethernet (using IP Addresses assigned to you by the ISP). Therefore, you need to install another networking protocol, such as NetBEUI, in order for the Ethernet and Symphony computers to appear on the same Local Area Network (LAN) and to share files and printers.

Given the above, Proxim presents the following guidelines for using the Symphony products in this network configuration:

Changes to Cordless Gateway's Topology Parameter. If you have a DHCP server on the network and you want the Symphony-enabled computers to receive a dynamic IP Address assignment from the network, then configure the Cordless Gateway to operate in Transparent Bridging mode only. If you do not have a DHCP server on the network but have available static IP Addresses that you can assign to the Symphony-enabled computers, then configure the Cordless Gateway to operate in Transparent Bridging mode only. If you do not have a DHCP server on the network and do not have

enough unique IP Addresses for all of the Symphony-enabled computers, leave the Cordless Gateway at the default setting to allow both NAT and Transparent Bridging. When configured to the default topology setting, the Cordless Gateway will also act as a DHCP server for the Symphony clients.

Changes to Cordless Gateway's TCP/IP Parameters. If you configured the Cordless Gateway to operate in Transparent Bridging mode or your network has DHCP (from the ISP, a network server, or the high-speed Internet device), then you do not need to change these parameters. However, if the ISP has assigned you a limited number of static IP Addresses, then configure the Cordless Gateway to use one of these addresses and enter the additional TCP/IP information (Subnet Mask, default gateway, and DNS server addresses) in the appropriate fields in the ISP TCP/IP tab.

Changes to Cordless Gateway Clients. If you have a DHCP server on the network and have configured the Cordless Gateway to operate in Transparent Bridging mode only, then there is no need to reconfigure the Cordless Gateway clients since they will automatically receive an address assignment from the network's DHCP server. Note that once you change the Cordless Gateway to use Transparent Bridging mode only, you may need to release the Symphony clients' existing IP Addresses using the Windows IP Configuration tool or restart the Symphony clients in order for the computers to receive a new IP Address assignment.

If you do not have a DHCP server on the network but have configured the Cordless Gateway to operate in Transparent Bridging mode only, then you need to manually assign each Symphony-enabled computer an IP Address, a Subnet Mask, a default Gateway, and DNS Server information that is valid on your network.

If you do not have a DHCP server and have configured the Cordless Gateway with an IP Address obtained from the ISP, each Symphony Adapter should retain the dynamic IP Address assignments that they receive from the Cordless Gateway and you should configure all of your computers (both Ethernet and Symphony) to use a second networking protocol, such as NetBEUI or IPX/SPX, to allow them to share files and printers and appear to be a part of the same LAN.

A Cordless Gateway Connected to a Network With a Server

If the Cordless Gateway connects either to an existing network containing a network server or directly to a server, refer to the section entitled "A Cordless Gateway Connected to a Wired Network That Does Not Have Shared Internet Access" for configuration information.

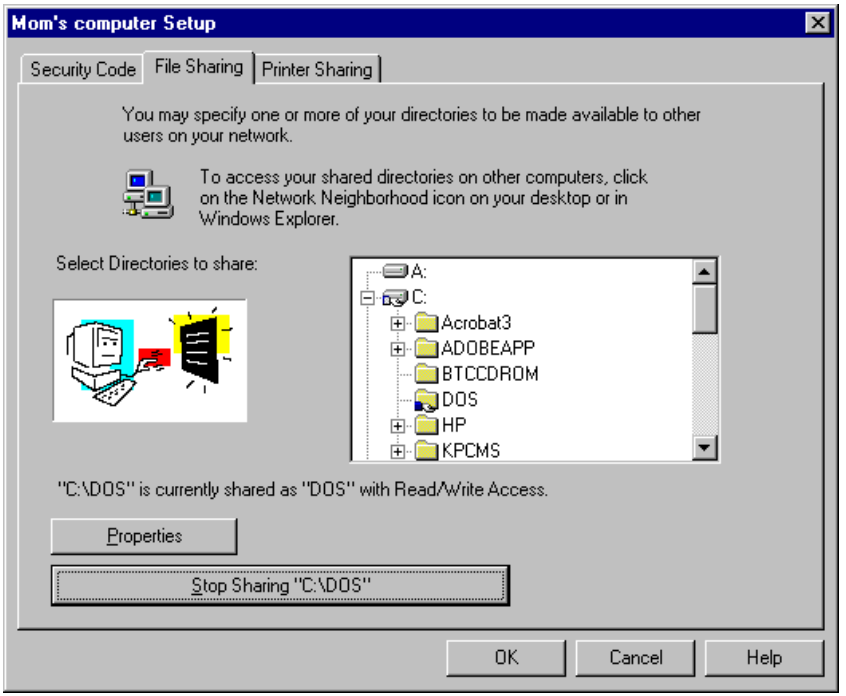
In addition, if the server has access to the Internet, it may be possible to install a third-party proxy software program so that it can allow the other computers on the network to share this Internet connection. Contact your local computer retailer to find out what software packages are available that perform this proxy function.

File Sharing

During installation, the Symphony Composer Installation Wizard generates a list of available drives which the computer may share with the network. The list of drives includes not only hard drives, but also any floppy disk drives, CD-ROM drives, and Iomega Zip drives that the Composer finds on the computer. The Symphony Composer Installation Wizard then prompts you to place a check mark next to each drive you want to share with the network and select an access level (Read/Write or Read Only).

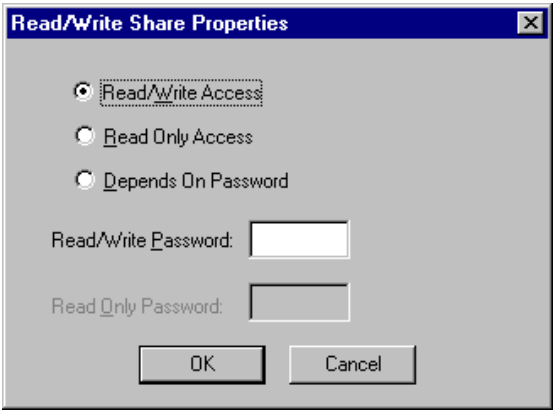
After the Symphony Composer Installation Wizard completes the configuration of the Symphony software, the drives you specified will be available to other users on the network. At any time, you may change which drives are shared from within the Symphony Maestro Configuration Tool by clicking the <Configure> button below the "Symphony Network Status" heading and choosing the "File Sharing" tab.

The Symphony Maestro Configuration Tool also allows you to select specific directories for sharing so that you do not have to give access to an entire drive. Therefore, you can limit the amount of information that is available over the network. If you only want to provide access to a specific set of files contained in the same directory, then you can choose to share only that directory. In the example below, only the folder labeled "DOS" on the C: drive is shared with the rest of the network.



In addition, you may also change the access level (Read/Write or Read Only) provided to remote users. Read/Write access allows a remote user to view, copy, create, and delete files on the shared drive. Read Only access allows a remote use to view and copy files on the shared drive. This feature allows you to determine what information is made generally available to the rest of the network and what information should reside only on the local computer.

After you select a folder or drive to share, the Maestro tool will prompt you to choose the type of access remote users will have to the shared resource, as shown below.



By default, Maestro will grant remote users Read/Write access to the shared resource. If you want to allow this type of access to remote users but prohibit unauthorized access, enter a password in the field labeled “Read/Write Password” and click <OK>. If you want to grant Read Only access to remote users, select the “Read Only Access” entry. You may also set a Read Only Password to prevent unauthorized access. Finally, if you select “Depends on Password,” you may set two different passwords, one for Read/Write access and the other for Read Only access, to allow full access to some users and partial access to others.

At any time, you can reset the access options for a particular drive or folder by highlighting its entry in the “Select Directories to share” list and clicking the <Properties> button.

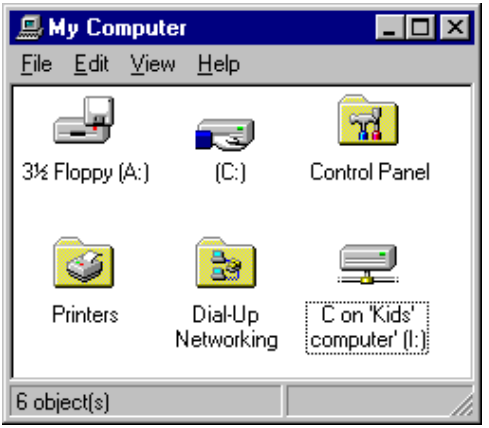
Warning!

Proxim recommends that you establish passwords for each drive that you share on the local area network. Depending on the type of Internet connection you have, others may be able to see your computers in their Network Neighborhood and have unauthorized access to your drives.

Once you have determined which drives or directories to share with other users, you now need a method to access these shared files from remote computers. The Symphony Maestro Configuration Tool includes a feature called Remote Drive Sharing that provides a computer with access to shared files over the network. This feature is described below.

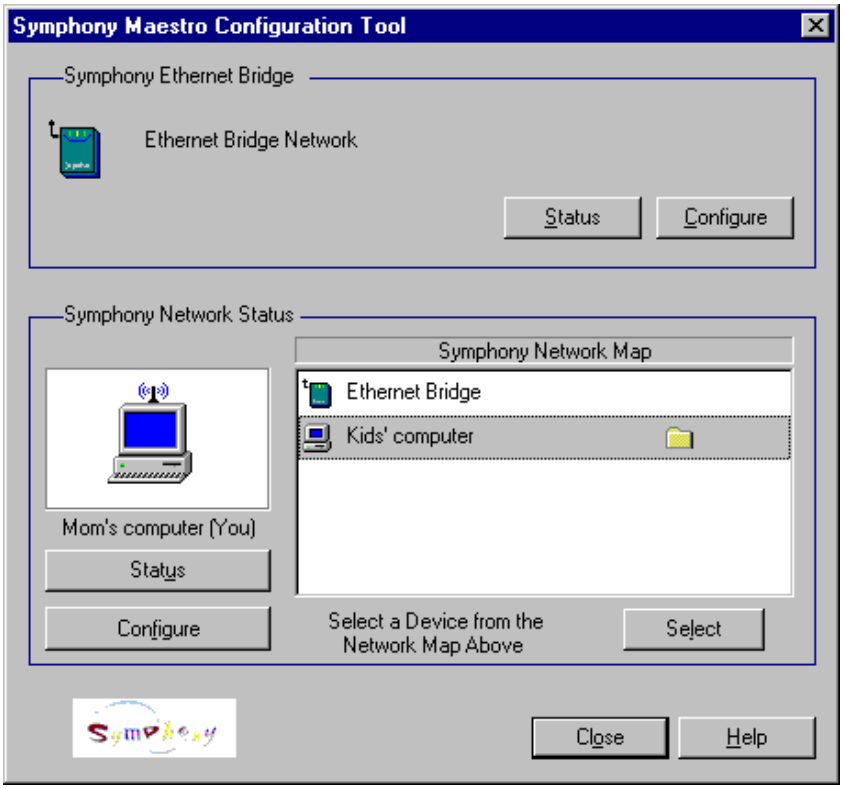
Remote Drive Sharing

From within the Symphony Maestro Configuration Tool, you can assign a remote drive a drive letter on the local computer. For example, the C: drive of a remote computer may be assigned to the I: drive of the local computer. Once this remote drive share has been established, the remote drive will appear to be another drive in the local computer's My Computer icon, as shown in the following screen shot:



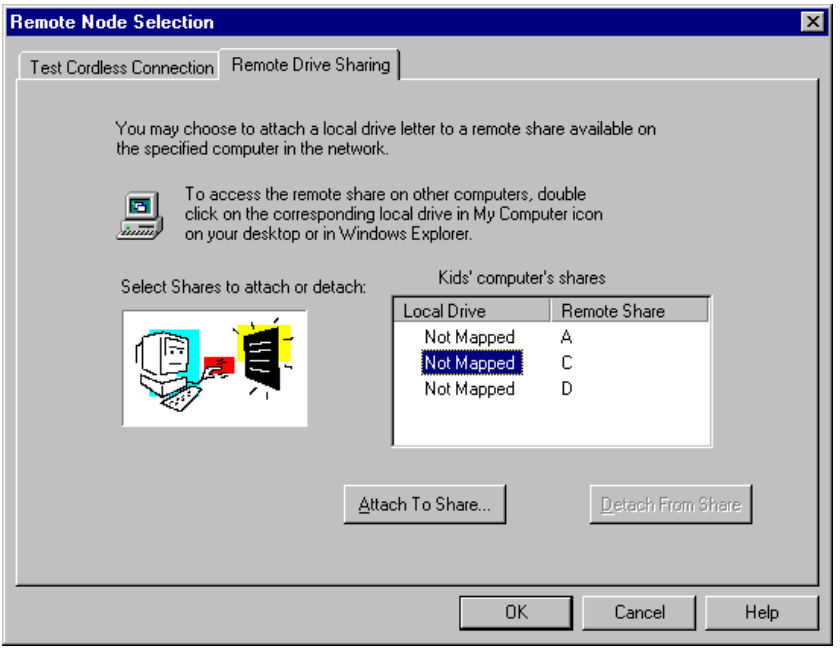
This process is also called "mapping" a network drive. A mapped network drive automatically reestablishes the connection each time the computer is restarted. You can establish drive letters for not only remote shared drives, but also for remote shared directories.

To create a remote drive share, open the Symphony Maestro Configuration Tool and refer to the Symphony Network Map, as shown below.

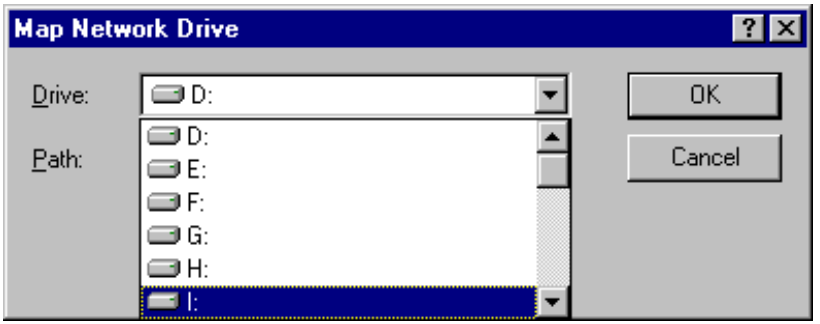


Highlight the name of the remote computer to which you want to attach and click the <Select> button (alternatively, you may simply double-click the name of the remote computer). In the example above, the local computer is called “Mom’s computer” and the remote computer is called “Kids’ computer.”

Next, click the “Remote Drive Sharing” tab at the top of the screen to view a list of shared drives or directories on the remote computer, as shown below.

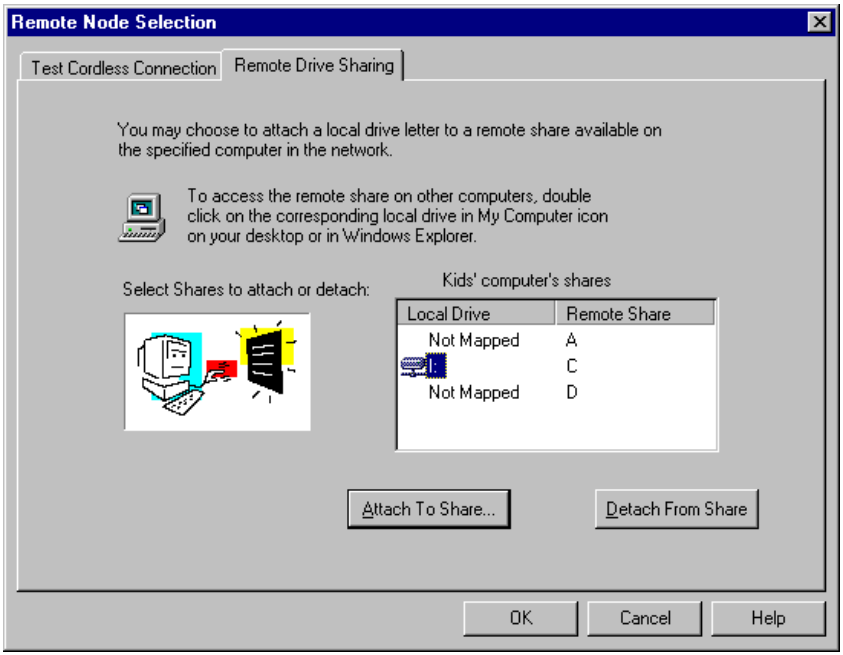


Highlight the name of a remote shared resource and click the <Attach to Share> button. The following dialog box will appear:



From within this screen, you may choose the drive letter on the local computer to assign to the shared resource using the drop-down menu. In the example above, the C: drive on the computer named “Kid’s computer” is mapped to the local computer’s I: drive. Click <OK> once you have selected the desired drive letter.

The mapped drive letter should now appear to the left of the remote drive in the list of shared resources, as shown below.



Once the remote drive is established, you may view the contents of the shared drive or directory by double-clicking the appropriate drive letter in the My Computer icon, located on the Windows desktop; the remote share will appear to be another drive on the computer.

In the future, if you want to disconnect a shared drive mapping, highlight the name of the remote shared resource in the “Remote Drive Sharing” screen and click the <Detach From Share> button.

Printer Sharing

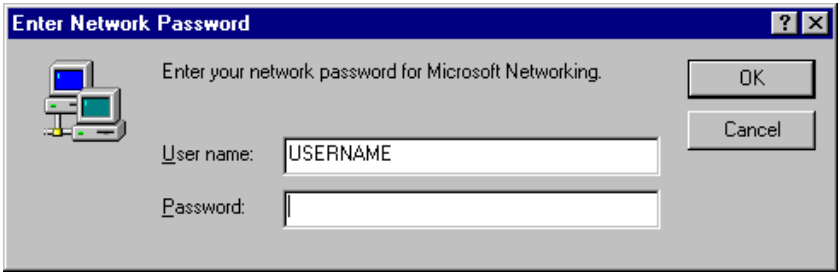
The Symphony Cordless Network utilizes the built-in printer sharing capabilities of Windows 95 and 98. Figure 7, below, shows a Symphony Cordless Network consisting of a laptop and a desktop computer that has a printer attached. The laptop can print documents to the desktop's printer over the Symphony Cordless Network.

Figure 7
Symphony Cordless Network Sharing a Printer

During installation, the Symphony Composer Installation Wizard generates a list of available printers which the computer may share with the network. Place a check mark next to each printer that you want to share. You may also change your shared printers selection at any time from within the Symphony Maestro Configuration Tool.

Once the Symphony installation is complete, the network computers will be ready to share printers. Follow these instructions to install a remote printer:

1. Logon to the Network. Each time you restart a network computer, you will be prompted to provide a Microsoft Networking User name and Password to logon to the network, as shown below.

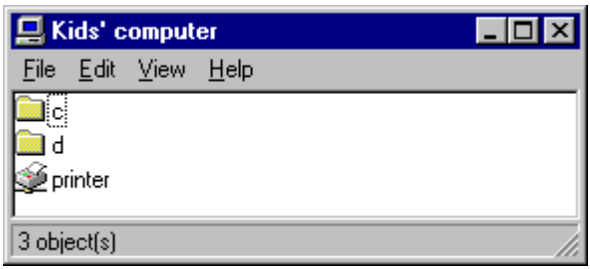


Enter your Password and click <OK> to enable the computer's network functions. Do NOT click the <Cancel> button.

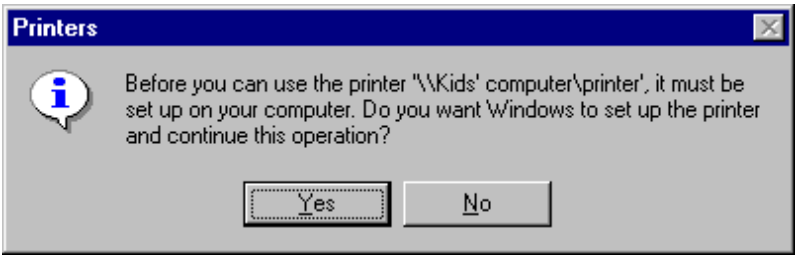
Note:

You must enter a User name and Password to log onto the network. If you choose <Cancel>, you will be unable to access network resources.

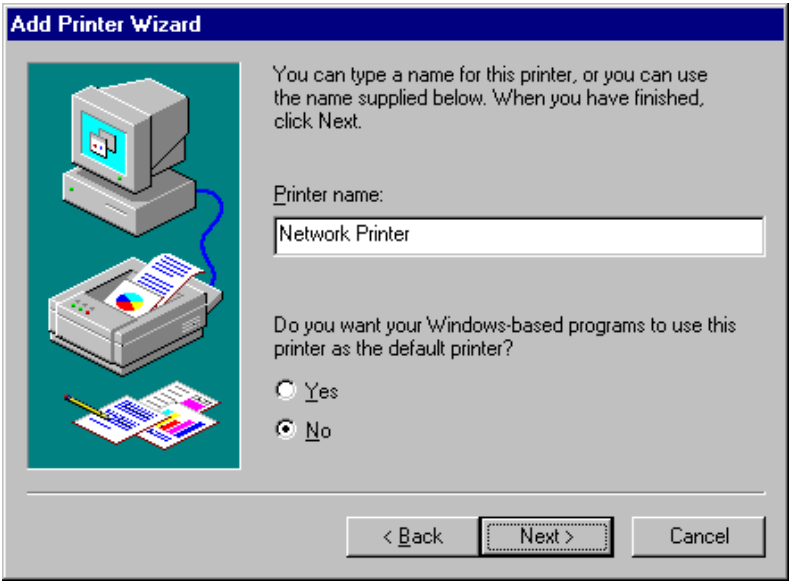
2. Go to the Network Neighborhood icon. After two or more computers have logged onto the network, double-click the Network Neighborhood icon on the Windows desktop to see what shared printers are available. In the example below, the remote computer, named "Kids' computer," is sharing a printer called "printer."



3. Double-click to Begin the Installation. Double-click the shared printer's Network Neighborhood entry to begin the installation of the remote printer. If this printer has not been installed previously, the following dialog box will appear:



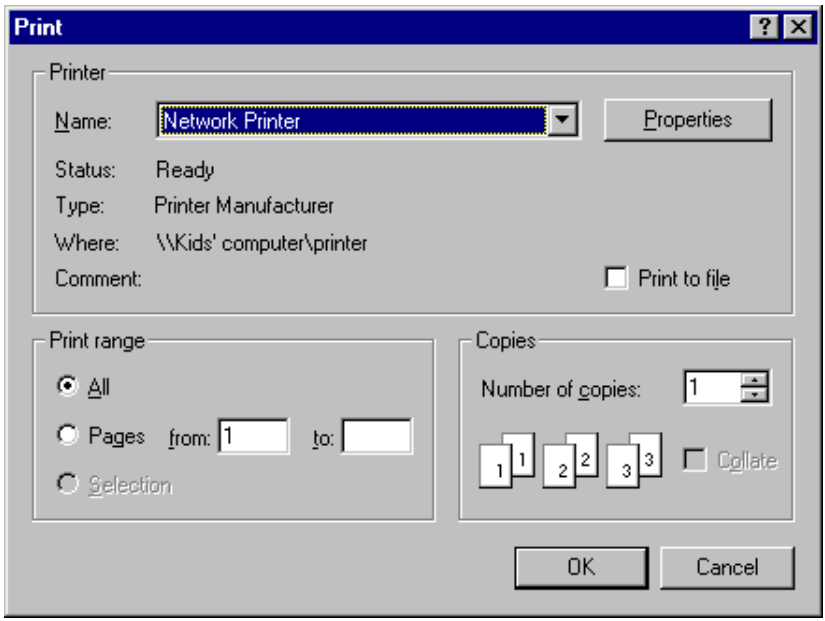
4. Run the Add Printer Wizard. Click the <Yes> button to proceed with the installation. This will launch the Add Printer Wizard, shown below.



Follow the on-screen instructions to complete the installation of the printer. Also, you should have the printer's installation CD or diskette(s) available during the installation. You may be prompted to insert the CD or diskette(s) if Windows cannot find the appropriate driver files.

5. Confirm that the Printer Has Been Successfully Installed. After the printer has been successfully installed, go to the Control Panel and click the Printers icon to confirm that the printer has been added to the list of available printers, as shown in the example below.

Once you have confirmed that the printer is installed, it is ready for use. Simply select the network printer from the drop-down list within each application's Print screen, as shown below.



If you are having difficulty printing to a network printer, refer to Chapter 12 and the Symphony Web site for troubleshooting suggestions. Also, refer to the printer's documentation to determine if any additional steps are required by the manufacturer in order to share this printer on a network.

8. Symphony Network Switcher

The installation procedure will automatically configure a Symphony Adapter with all of the parameters required to establish network communication. However, under some circumstances, you may want to move a computer from the cordless network to another network. For example, you may want to connect the computer to your office LAN (Local Area Network) that is in a different location and uses a non-Symphony network card, such as a wired Ethernet card or a Proxim RangeLAN2 Card, to achieve network access. Alternatively, you may want to dial into the office LAN from home. In either case, the Symphony Network settings may conflict with the settings of this other network.

Normally, in order to transport a computer from one network to another, you must manually change several network settings each time the computer is relocated. This process can be tedious and error prone. However, the Symphony software eliminates this concern by creating two Network Profiles that contain the settings for each network.

During installation, the Symphony Composer Installation Wizard saves your computer's existing network configuration into a Network Profile called "Original." The Symphony Composer then reconfigures the network settings so that the computer will communicate with the cordless network. These new network settings are saved in a Network Profile called "Symphony." Once the installation is complete, the computer will use the Symphony Network Profile until you switch back to the Original Network Profile using the Symphony Network Switcher.

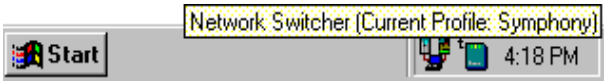
Note:

Among the network information saved within a Network Profile is a computer's Internet Proxy Settings. If you have configured Netscape Navigator with Proxy information, these settings are not saved within a Network Profile. Netscape Navigator uses its own Internet Proxy information that the Symphony Composer Installation Wizard cannot access. If you have configured Netscape Navigator with Internet Proxy Settings, you must change this information manually from within Netscape Navigator each time the computer is relocated.

After the Symphony Composer Installation Wizard has completed the configuration of a Symphony Adapter, the computer may automatically launch the Network Switcher program (depending on the computer's configuration), and the Network Switcher icon may appear in the Windows

System Tray, as shown below. If the icon does not appear, the Network Switcher program and icon can be launched from the Symphony section of the Start Menu's Programs group.

If you move the Windows cursor over the Switcher icon, a dialog box will appear that reports the current profile in use, as shown below.



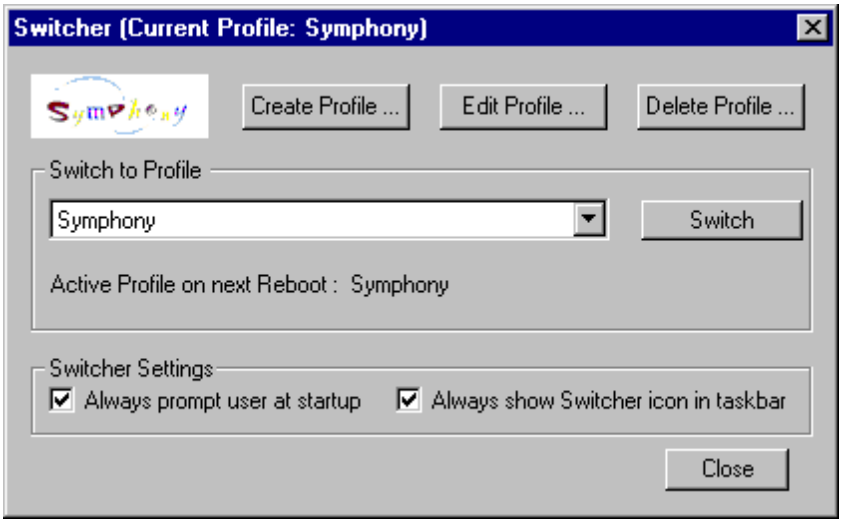
Depending on your computer's configuration, this icon may appear in the Windows System Tray each time you restart the computer. You can preventing this icon from appearing in the System Tray by unchecking the box labeled "Always show Switcher icon in taskbar" within the Network Switcher configuration screen. If this icon does not appear automatically, you can enable this feature by checking the box labeled "Always show Switcher icon in taskbar" within the Network Switcher configuration screen.

In addition to the Switcher icon, the Network Switcher program may also create a DOS prompt at boot-up that allows you to select which network profile you want to use, as shown below.

This prompt will appear before Windows loads each time you restart the computer if you chose to enable this option when prompted by the Composer wizard during installation. Windows will not load until you select a network profile and press <Enter>. You can disable this feature by unchecking the

box labeled “Always prompt user at startup” within the Switcher configuration screen. If this prompt does not appear automatically and you want to utilize this feature, please a check mark next to the box labeled “Always prompt user at startup” within the Switcher configuration screen.

At any time, you may edit an existing Network Profile or create a new one using the Network Switcher configuration screen. Simply double-click the Switcher icon to display the Network Switcher configuration screen, shown below. Alternatively, you can right-click the Switcher icon and choose “Edit” or select the “Symphony Network Switcher” entry found in the Symphony section of the Start Menu’s Programs group to display this screen.

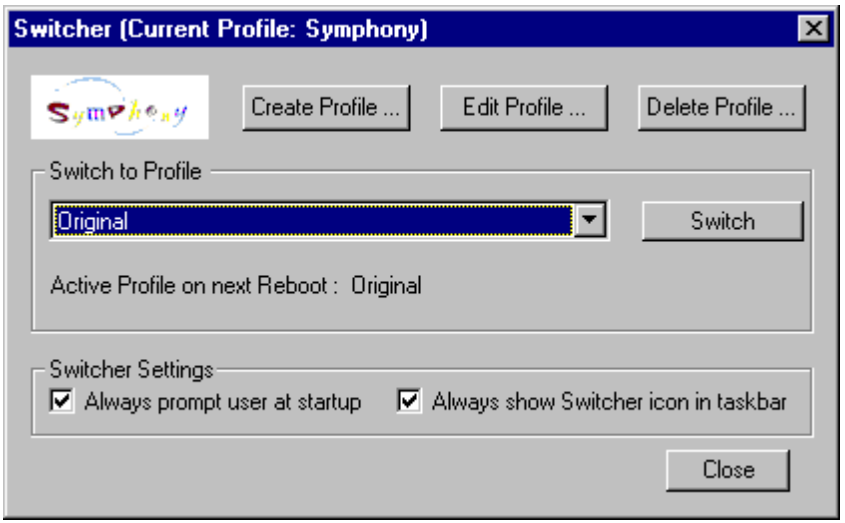


Switching Between Network Profiles

The Network Switcher offers three ways to toggle between Network Profiles. The first method is to right-click the Switcher icon in the Windows System Tray and select the “Switch” option from the pop-up menu to choose between Network Profiles, as shown below.

The second method is to select a network profile when prompted during boot-up, as shown above.

The third method is to launch the Switcher configuration screen and select a profile from the “Switch to Profile” dialog box, as shown below.

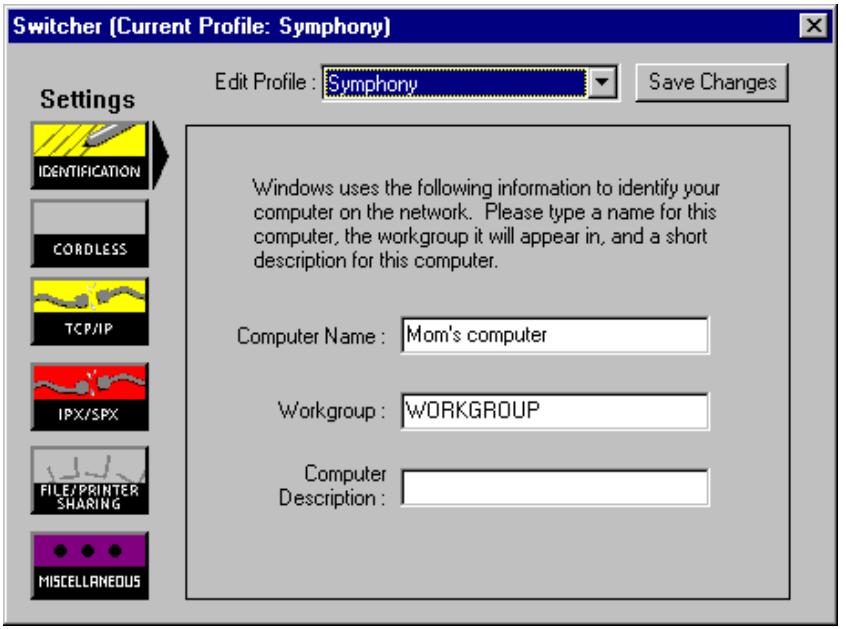


Click <Switch> to change the network profile. Restart the computer when prompted. If you choose not to restart the computer when prompted, the profile listed in the “Active Profile on next Reboot” field will change to indicate that the new profile will be used following the next restart.

Note that the computer will need to be restarted each time you change the Network Profile. This step is necessary in order to initialize the computer’s network functionality with the new settings.

Editing a Network Profile

The configuration screen displays information about the current profile and the switcher settings. To edit the network settings associated with a particular Network Profile, select the profile from the “Switch to Profile” drop-down menu and click <Edit Profile ...>. This displays the Switcher’s Edit Profile screen, as shown below.

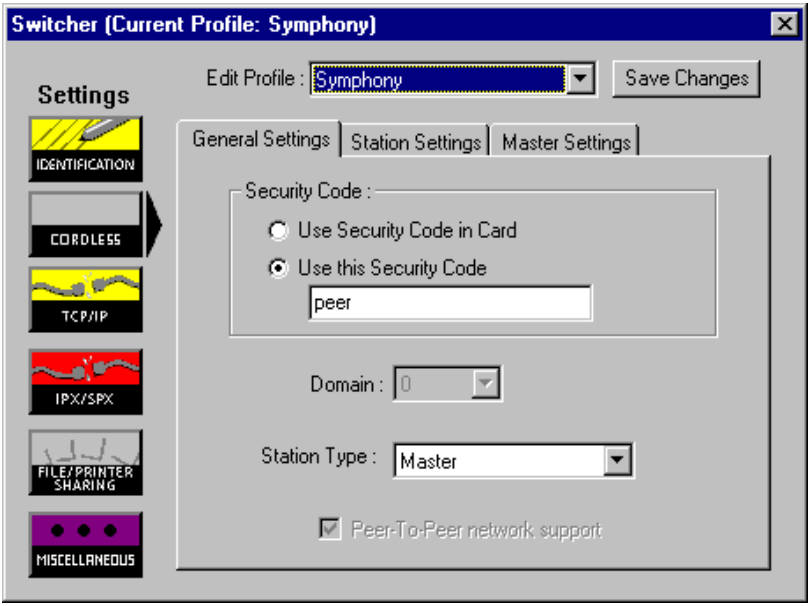


Select one of the headings on the left-hand side to view and edit a profile's parameters. The Identification settings option, shown above, configures the name, workgroup designation, and description that the computer will use when operating in the selected profile.

The Cordless settings option, shown below, configures a Profile's Symphony Cordless Network parameters. Select either the "Station Settings" or "Master Settings" tab to view additional advanced settings. For more information on these advanced cordless parameters, refer to Appendix D. Note that the Domain and Roaming parameters are grayed out in the Symphony Profile. Symphony products do not support these RangeLAN2 parameters.

In the example below, a Symphony Conductor computer is using the word "peer" as the Security Code and it is configured as a Master device. The user configured this Security Code using the Composer Installation Wizard. Proxim's RangeLAN2 Cards use a parameter called "Security ID," which is similar to a Symphony Card's Security Code, except the Security ID is stored on the RangeLAN2 Card itself and cannot be read or retrieved, only overwritten. RangeLAN2 users who transport a laptop between a RangeLAN2

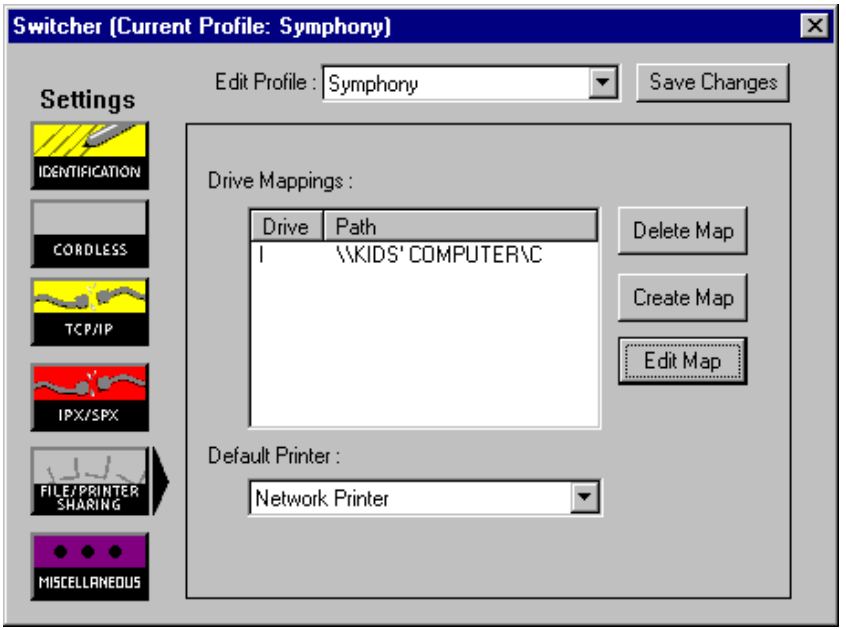
network and a Symphony network should configure the Original Profile to use the Security Code (or Security ID) that resides within the card rather than a configured Security Code to communicate with a RangeLAN2 network.



The TCP/IP settings option configures the TCP/IP parameters that the computer will use when operating in the selected profile. The TCP/IP parameters include IP Address, Subnet Mask, DNS configuration, Gateways configuration, Proxy Server settings, and WINS configuration. If you are unfamiliar with these settings, Proxim recommends that you leave these parameters at their default value.

The IPX/SPX settings option configures the values that a computer with the IPX/SPX protocol installed will use when operating in the selected profile. If you are unfamiliar with these settings, Proxim recommends that you leave these parameters at their default value.

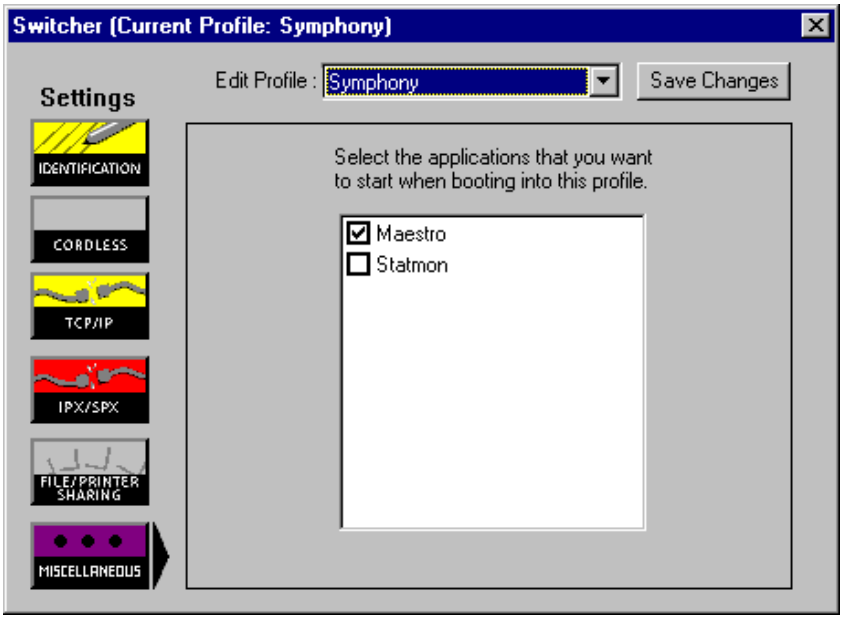
The File/Printer Sharing settings option configures the drive mappings and default printer that the computer will use when operating in the selected profile, as shown below.



The File/Printer Sharing settings screen allows you to create, delete, or edit drive mappings (also known as remote drive shares) used by the computer when configured to operate in the selected profile. To make a new drive share, click <Create Map> and assign a drive letter and network path. To delete or edit an existing drive mapping, highlight one of the entries in the Drive Mapping table and click the appropriate button.

To change a profile's default printer, select another installed printer from the Default Printer drop-down menu.

The Miscellaneous settings option determines which Proxim programs are automatically launched when a computer is restarted using the selected profile. Maestro.exe corresponds to the Symphony Maestro Configuration Tool. Statmon.exe corresponds to the RangeLAN2 Status Monitor. For the Symphony Profile, you want the Symphony Maestro Configuration Tool to be launched automatically but not the RangeLAN2 Status Monitor, so the Maestro.exe entry should have a check mark and the Statmon.exe entry should not, as shown below.



For a profile that communicates with a RangeLAN2 network, you want the RangeLAN2 Status Monitor to be launched automatically but not the Maestro Configuration Tool, so the Statmon.exe entry should have a check mark and the Maestro.exe entry should not.

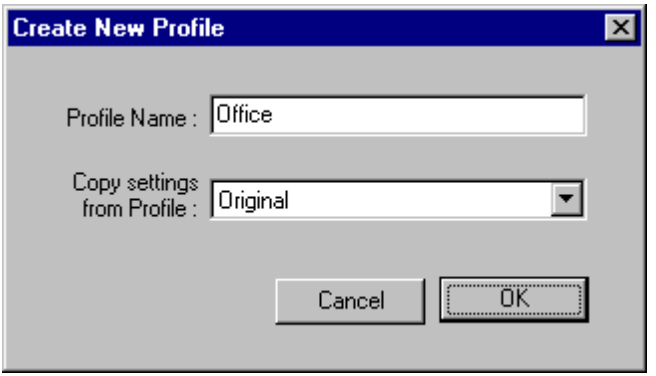
For a profile that does not communicate with either a RangeLAN2 or Symphony network (such as a profile that uses a wired Ethernet card), then neither the Maestro.exe entry nor the Statmon.exe entry should have a check mark so that these programs will not be launched automatically.

After you have made changes to a profile's network settings, click the <Save Changes> button. You will be prompted to restart the computer in order for the change to take effect. To exit the Edit Profile screen without making any changes, click the "X" box in the upper right hand corner of the screen.

Creating and Deleting Network Profiles

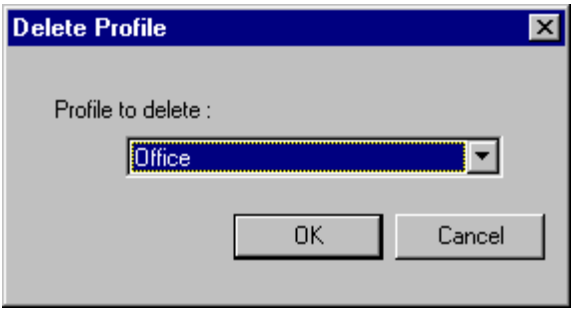
Within the Network Switcher configuration screen, you may create a new Network Profile or delete an existing one.

To create a new profile, click <Create Profile>. This will make a copy of an existing profile and prompt you to assign the duplicate profile a new name, as shown below.



Once you have created a new profile, you may change its settings using the Edit Profile options discussed earlier this chapter. There is no limit to the number of Network Profiles that you can create.

To delete a profile, click <Delete Profile> and select a profile from the drop-down menu, as shown below. Click <OK> to delete the profile.



Examples of When to Use Network Profiles

Here are a few examples of when it may be necessary to switch between Network Profiles:

❑ **Transporting a Laptop Computer From the Home to the Office.** Shut down the computer and eject the Symphony PC Card from the PCMCIA slot and take the computer to the office. Insert your office network card or place the computer in its docking station, if it has one. Turn on the computer and select the Original Profile (or another Profile you have created specifically for the office) at the Switcher DOS prompt. The Network Switcher will restore all of your office LAN's settings during boot-up and the laptop will be ready to communicate with the office LAN without further configuration. Alternatively, you can change the Network Profile setting by right-clicking the Network Switcher icon or by clicking the <Switch> button in the Switcher configuration screen and restarting the computer when prompted.

❑ **Transporting a Laptop Computer From the Office to the Home.** At the end of the day, shut down the computer and remove the office network card from the PCMCIA slot. Take the laptop home and insert the Symphony PC Card into the PCMCIA socket. Turn on the computer and select the Symphony Profile at the Switcher DOS prompt. The Network Switcher will restore all of the Symphony settings during boot-up and the laptop will be ready to communicate with the cordless network without further configuration. Alternatively, you can change the Network Profile setting by right-clicking the Switcher icon or by clicking the <Switch> button in the Switcher configuration screen and restarting the computer when prompted.

❑ **Transporting a Laptop Computer Between a RangeLAN2 Network and a Symphony Network.** Follow the instructions in Appendix B to install the Symphony software on a laptop that already has a RangeLAN2 Card installed and configured. After the Symphony software has been installed, the laptop will be set to the Symphony Network Profile and will communicate with the Symphony Cordless Network. To revert back to the RangeLAN2 settings, simply change the Network Profile from "Symphony" to "Original" using one of the three switching techniques. The Network Switcher will restore all of the RangeLAN2 settings, and the computer will be ready to communicate with the RangeLAN2 network without any additional configuration. To reestablish communication with the Symphony Cordless Network, simply change the Network Profile back to "Symphony" using one of the three switching techniques and restart if prompted. After the laptop restarts or completes it boot-up process, it will communicate with the Symphony Cordless Network.

Note:

If you intend to install Symphony software on a computer that already has a RangeLAN2 Card installed, refer to Appendix B for specific installation instructions.

9. Adding a New Product to a Symphony Cordless Network

In the future, if you decide to increase the number of computers on the cordless network or decide to add a Symphony Cordless Gateway to an existing network, you may need to reconfigure the computers on the cordless network. Below are some guidelines for reconfiguring the Symphony Cordless Network.

Note:
There can be only one shared device (modem, Ethernet card, or Cordless Gateway) in a Symphony Cordless Network.

Adding a New Computer to a Cordless Network

If you are adding a new computer to an existing cordless network with a Symphony-HRF Cordless Gateway, then simply follow the installation instructions in Chapters 3, 4, and 5 to configure this new addition to the cordless network.

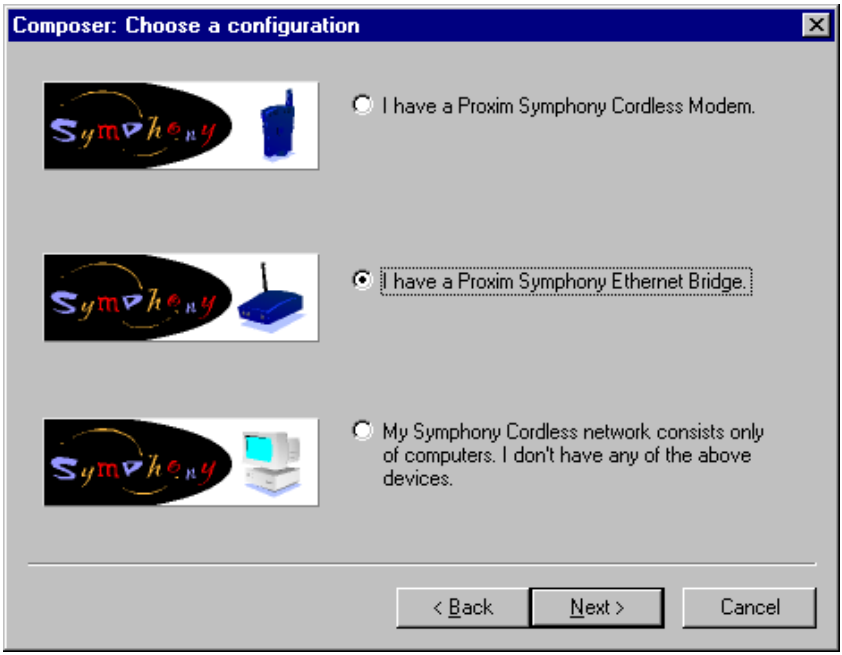
Adding a Symphony-HRF Cordless Gateway to a Cordless Network

If you have an existing cordless network to which you want to add the Symphony-HRF Cordless Gateway, follow these steps:

1. **Shut down all computers on the cordless network.**

2. Install the Symphony-HRF Cordless Gateway. The installation procedure for the Cordless Gateway is described in Chapter 3 of this manual.

3. Turn on one of the computers on the cordless network. Rerun the Symphony Composer Installation Wizard from the Symphony folder of the Start Menu's Programs group. Configure a Security Code for the cordless network and if prompted, select the "I have a Proxim Symphony-HRF Cordless Gateway" option within the Composer's "Choose a configuration" screen, as shown below.



Click <Next> and follow the on-screen instructions to configure the Symphony Adapter to communicate with the Cordless Gateway. Refer to Chapter 5 for additional information on the Composer Installation Wizard. Complete the configuration of the Symphony Adapter and proceed to Step #4.

4. Follow Step #3, above, for each computer on the cordless network.

10. Upgrading Symphony Software

This chapter describes how to upgrade the Symphony software used by the Cordless Gateway and its client adapters if a new version becomes available.

Upgrading the Symphony-HRF Cordless Gateway's Firmware

There are two methods to upgrade the Symphony-HRF Cordless Gateway's firmware: "Upgrade from Symphony Web Site" and "Upgrade from Disk."

Select one of these methods and follow the directions below:

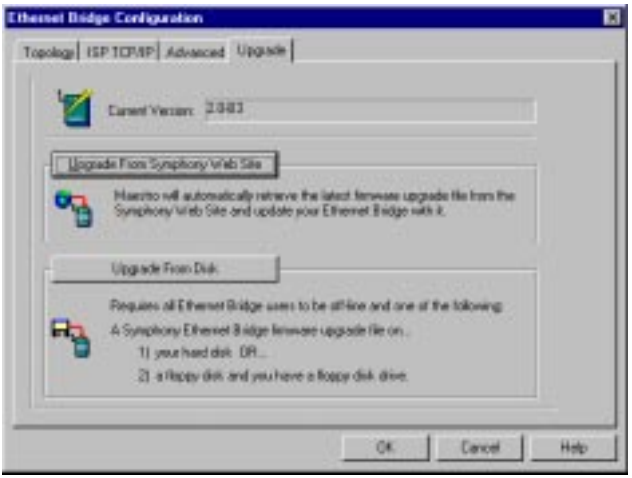
Method 1: Upgrade from the Symphony Web Site

1. Make sure that no Symphony-enabled client is using the Symphony-HRF Cordless Gateway while attempting an upgrade.

2. Make sure that the Cordless Gateway has a connection to the Internet (in other words, the Cordless Gateway must be attached to a hub or to a device that provides Internet connectivity for Ethernet nodes).

3. Open the Maestro Configuration Tool on one of the Cordless Gateway client computers and click the <Configure> button under the "Symphony-HRF Cordless Gateway" heading.

4. Click the "Upgrade" tab, as shown below.



Check the current version of the firmware. If the Symphony-HRF Cordless Gateway already has the latest version installed, there is no need to continue with this upgrade process.

5. Click the button labeled “Upgrade from Symphony Web Site.”

6. Follow the on-screen instructions to complete the upgrade process. The Cordless Gateway will be automatically rebooted after it has completed the download of the new firmware.

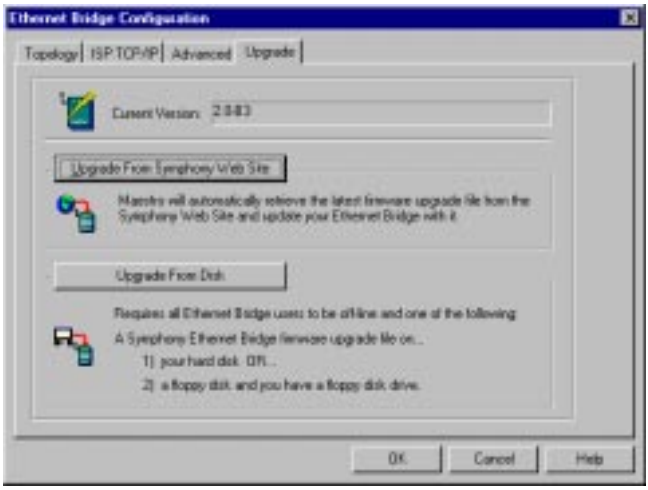
7. To confirm that the update was successful, click <OK> to close the Cordless Gateway Network Configuration screen. Then, click <Configure> and click the “Upgrade” tab again to view the current firmware version in use. If an update occurred, the version number should have increased from what was reported in Step #4.

Method 2: Upgrade from Disk

1. Make sure that no Symphony-enabled client is using the Symphony-HRF Cordless Gateway while attempting an upgrade.

2. Open the Symphony Maestro Configuration Tool on one of the Cordless Gateway client computers and click the <Configure> button under the “Symphony-HRF Cordless Gateway” heading.

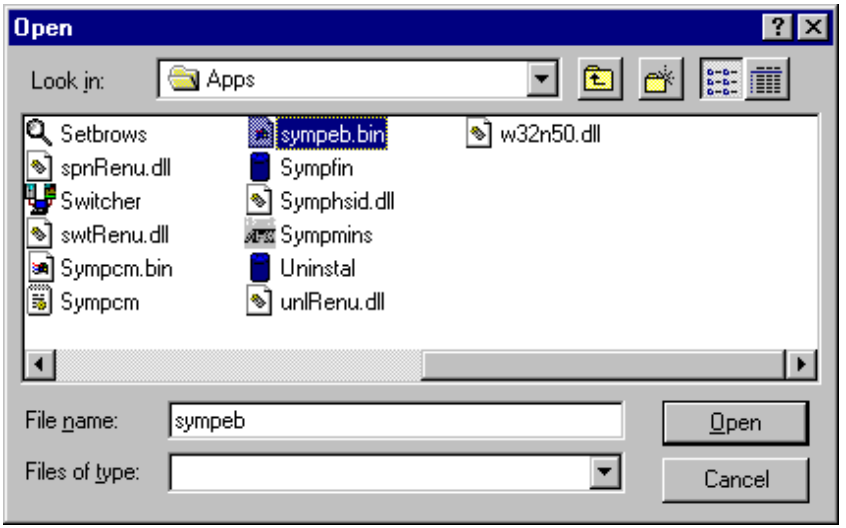
3. In the Cordless Gateway Network Configuration screen, click the “Upgrade” tab, as shown below.



Check the current version of the firmware. If the Symphony-HRF Cordless Gateway already has the latest version installed, there is no need to continue with this upgrade process.

4. Click the button labeled “Upgrade from Disk.”

5. When prompted, browse the location of the file named SYMPEB.BIN, as shown below.



This file is included on the Symphony Installation CD and on the Symphony executable available for download from the Symphony Support web site. Typically, the SYMPEB.BIN file can be found in the CD’s or executable’s SYMPHONY\APPS\ directory.

6. Follow the on-screen instructions to complete the upgrade process. The Symphony-HRF Cordless Gateway will be automatically rebooted after it has completed the download of the new firmware.

7. To confirm that the update was successful, click <OK> to close the Cordless Gateway Network Configuration screen. Then, click <Configure> and click the “Upgrade” tab again to view the current firmware version in use. If an update occurred, the version number should have increased from what was reported in Step #3.

Upgrading a Symphony Adapter's Software

The Symphony Installation program automatically detects if an earlier version of the Symphony software is installed on the computer. Follow the steps below to upgrade the Symphony software without having to uninstall the previous version first.

1. Determine the version of Symphony software currently installed on a computer by right-clicking the Symphony icon, located in the Windows (98 and 95) System Tray, and selecting the "About" option from the drop-down menu.

2. Open the contents of the Symphony CD and double-click SETUP.EXE. The following screen will appear:

3. Click <Upgrade> to begin the upgrade process. Follow the on-screen instructions and restart the computer when prompted.

4. After the computer has restarted, proceed with the Symphony Composer Installation Wizard as described in Chapter 5.

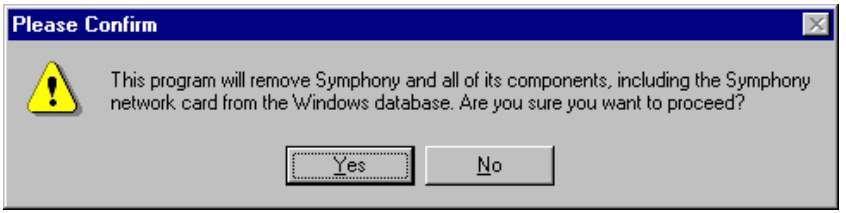
5. Right-click the Symphony icon in the System Tray and choose "About" to confirm that the software revision number has changed.

11. Uninstalling Symphony Software

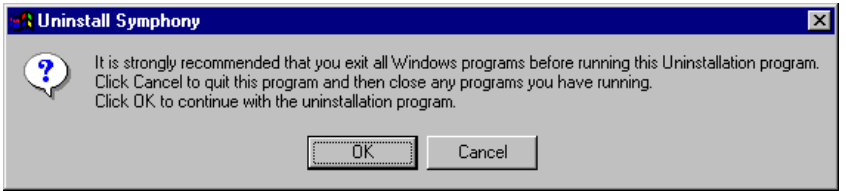
Proxim provides an uninstall tool to facilitate the removal of the Symphony Adapter from a desktop or notebook computer. The Symphony installation procedure copies the file "UNINSTAL.EXE" to the computer's hard drive and places a Windows shortcut in the Symphony folder within the Programs section of the Start Menu.

To begin the uninstall procedure, go to the Start Menu and choose "Uninstall" from the Programs group's Symphony folder, or go to the Add/ Remove Programs icon in the Control Panel and remove the "Symphony Cordless Network" entry.

When prompted, click <OK> to confirm that you want to uninstall the Symphony software, as shown below.

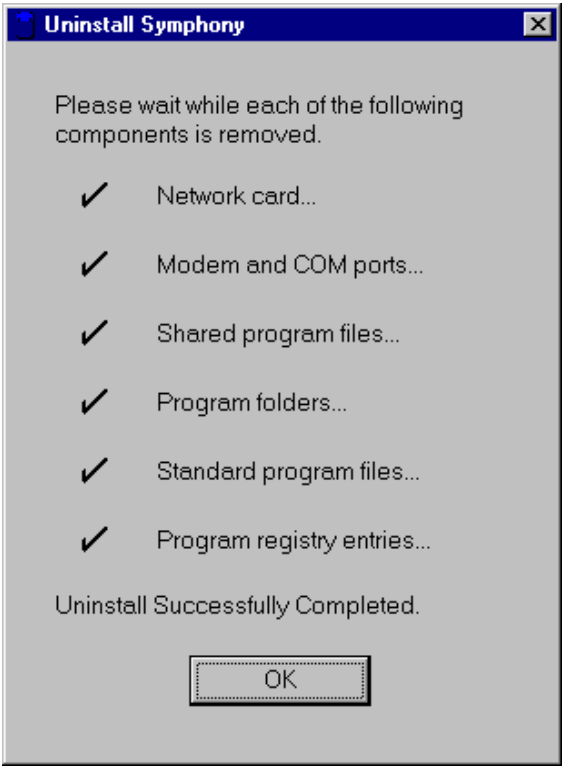


Next, you will be prompted to exit from all Windows programs before proceeding, as shown below.



Close all Windows programs and then click <OK> to continue.

Please wait while the Uninstall program removes the Symphony components from your computer. Click <OK> when the process is complete, as shown below. When prompted, shut down the computer and remove the Symphony Adapter.



Also, note that the Uninstall program will reconfigure the computer with the pre-Symphony network settings stored in the Original Profile, if any exist. For more information on Network Profiles, refer to Chapter 8.

If you decide to reinstall the Symphony Adapter at a later date, first turn off the computer and insert the card into the appropriate PCMCIA, ISA, or PCI slot or USB port, as described in Chapter 3. Then, turn on the computer. Windows 98 or Windows 95 will automatically detect the card as a new device and run either the Add New Hardware Wizard or the Update Device Driver Wizard, depending on which version of Windows is installed. Follow the installation steps described in Chapters 4 and 5 to install of the Symphony Adapter.

To uninstall the Symphony-HRF Cordless Gateway, unplug it from the wall and disconnect the Ethernet cable.

12. Troubleshooting

The Symphony Cordless Networking Suite of products is designed to be very easy to operate. If you do experience difficulties, however, use the information in this chapter and on Proxim's Symphony Web site to help diagnose and solve your problems. Refer to Chapters 4 and 12 of the Symphony Adapters User's Manual for assistance with problems that arise during the installation of a Symphony Adapter. If you cannot resolve a problem, contact Symphony Technical Support, as described in Appendix E, "How to Reach Technical Support."

Frequently Asked Technical Support Questions

Operational Issues

Problem/Symptom Question	Possible Solution/Answer	Chapter in User's Manual
I can share files and printers between the computers on the Symphony Cordless Network, but I can't access the Internet through my high-speed Internet connection.	Confirm that you have configured the Ethernet Bridge with an IP address assigned to you by the ISP. If your ISP uses DHCP to assign addresses, click the <Status> button under the Symphony Ethernet Bridge heading in the Maestro Configuration Tool to confirm that the Ethernet Bridge has successfully received an address assignment.	7
All of the computers on the Symphony Cordless Network and the computers on the Ethernet network have access to the Internet. However, I cannot share resources between Symphony and Ethernet computers.	If the Ethernet Bridge is configured to perform NAT so that the Internet connection can be shared with the Symphony Cordless Network, then the Symphony Cards have an IP address in the 169.254.0.0 network. In order to have access to the Internet, the Ethernet cards probably use a different IP addressing scheme. Try installing another networking protocol, like NetBEUI, to allow the Symphony and Ethernet computers to share resources.	7

Problem/Symptom Question	Possible Solution/Answer	Chapter in User's Manual
I can't print to the network printer.	1. Confirm that you have successfully installed the network printer on the computer from which you want to print. 2. Confirm that the printer and the computer it is attached to are powered on. 3. Confirm that the computer with the printer and the computer from which you want to print are both successfully logged into the network. 4. Test the strength of the link between the two computers from within the Maestro tool. The computers may be out of range of one another.	7
I get an error message while trying to copy driver files during the installation of my printer.	Certain printer manufacturers require that network computers run a proprietary software program to use the printer over the network. Consult your printer documentation for more information on how to share the printer on the network.	7
The Ethernet Bridge Networking icon in the Windows System Tray is red. Why?	The Ethernet Bridge icon will turn red when the computer cannot communicate with the Ethernet Bridge. Try these steps: 1. Confirm that the Ethernet Bridge is powered on. 2. You may be out of range of the Ethernet Bridge. Try moving the computer closer to it. 3. Confirm that the Security Code has not been changed for the Symphony Card from within the Maestro Configuration Tool.	6
The Status LED on the top of the Ethernet Bridge has turned red.	Unplug the Ethernet Bridge's power adapter from the wall outlet. Wait 10 seconds and plug it back into the wall. If the LED remains red, contact Technical Support.	3

Problem/Symptom Question	Possible Solution/Answer	Chapter in User's Manual
What type of 10BaseT cable should I use to connect the Ethernet Bridge to a cable modem?	In general, a 10BaseT port on an ISDN router, a cable modem, or xDSL modem will have a pinout similar to a cabling hub. In this case, use the crossover cable provided in the product package to connect the Ethernet Bridge to one of these devices. However, if the 10BaseT Link LED does not illuminate on both ends, check the documentation for your cable modem to confirm its pinout. If this information is unavailable, try using a standard 10BaseT cable.	2, Appendix A
The Link LED on the back of the Ethernet Bridge is not illuminated.	Confirm that the appropriate 10BaseT cable is properly connected to both the Ethernet Bridge and the attached device. For example, if you are connecting to a hub, use the cross-over cable shipped with the unit. If you are connecting to a stand-alone computer, use a standard 10BaseT cable.	3, Appendix A
I can't find another computer on the cordless network.	1. Confirm that the other computer is listed in the Symphony Network Map in the Maestro tool. 2. Test the strength of the link between the two computers from within the Maestro tool. The computers may be too far apart. 3. Confirm that you successfully logged onto the network. If you are unsure, go to Shut Down in the Start Menu and choose "Close all programs and log on as a different user" to bring up the Network Logon prompt. 4. Use Microsoft's Find Computer utility to locate the computer on the network.	6, 7

General Questions

Problem/Symptom Question	Possible Solution/Answer	Chapter in User's Manual
Can I run an application from a remote computer over the cordless network?	This will depend on whether or not the application is designed to be used over a network. Consult the application's user guide to determine if it supports operation over a network.	
Can I play computer games with other members of the cordless network?	Yes, as long as the game supports multiple players over a LAN (local area network). Refer to the game's user guide for more information.	
Can I share my scanner on the Symphony Cordless Network?	Yes, if your scanner supports operation over a network. Contact the scanner's manufacturer for details.	
Can I use two Ethernet Bridges on the same Symphony Cordless Network?	No. You can only use one Ethernet Bridge on any cordless network.	
Will the Symphony products interfere with my microwave oven or cordless phone that operates at 2.4 GHz?	The Symphony Cordless Networking Suite uses frequency hopping spread spectrum technology in the 2.4GHz band to communicate. This is the same frequency band used by microwave ovens and 2.4GHz phones. Frequency hopping technology is designed to minimize interference so while you may notice a reduction in performance, your devices will not cease to function. Proxim recommends against installing the base station of the 2.4 GHz phone in between two Sympony devices.	
How can I use a laptop computer on both my office network and home network?	Switch between Network Profiles using the Symphony Network Switcher. See Chapter 8 for details.	8

Problem/Symptom Question	Possible Solution/Answer	Chapter in User's Manual
What is the maximum range I can expect to achieve using the Symphony products?	Proxim has specified that the range between two Symphony devices is up to 150 feet. Range is highly dependent upon the particular environment in which the product are used. Obstacles, such as walls and ceilings, weaken the radio signals. Metal objects, such as screen doors, windows screens, and filing cabinets, also have an adverse effect on range.	
Can I have multiple E-Mail accounts from the same ISP so that multiple members of the household can access their own E-Mail simultaneously?	Many ISPs offer multiple E-Mail accounts. Contact your ISP for more information.	
Can I connect the Symphony Ethernet Bridge to my office network so that my laptop can access the network?	The Symphony Ethernet Bridge can only be connected to small hubs with no more than 8 devices attached. If your office has more than 8 Ethernet devices networked together, then you cannot use the Ethernet Bridge to provide network connectivity to a cordless laptop.	2
Can I use an Ethernet Bridge and a Symphony Cordless Modem on the same cordless network?	No. Each cordless network can support either one Ethernet Bridge, one Cordless Modem, or one computer acting as a Symphony Conductor. These three devices cannot coexist on a Symphony network.	
I have reviewed all of the troubleshooting suggestions but I still can not solve my problem.	Review the support documentation available on the Symphony Web site at http://www.proxim.com/symphony/. If you are still unable to solve the problem, call Symphony Technical Support at 800-411-8106 for technical assistance with the Symphony product line.	

A. 10BaseT Connector Specification

The 10BaseT connector located on the back panel of the Cordless Gateway is wired like a cabling hub. Standard 10BaseT specifications apply to the 10BaseT interface of the Symphony-HRF Cordless Gateway. No segment may exceed 100 meters.

Use a standard 10BaseT cable to connect the Cordless Gateway directly to an Ethernet Card, to a network router, or to the chaining port of an Ethernet hub (also called the uplink port). Use a 10BaseT crossover cable to connect the Cordless Gateway directly to a port on an Ethernet hub or to a device wired like a hub, such as an ISDN router or cable modem. A 10BaseT crossover cable is included in the product package; a standard 10BaseT cable is not included. Also, you can monitor the Link LED to determine whether or not you are using the appropriate cable. Refer to Chapter 3 for details.

A crossover cable differs from a standard 10BaseT cable in that pins 1 and 3 and pins 2 and 6 are crossed. These pins control the transmission and receipt of data. Figure 7 below illustrates the pinout for a 10BaseT crossover cable.

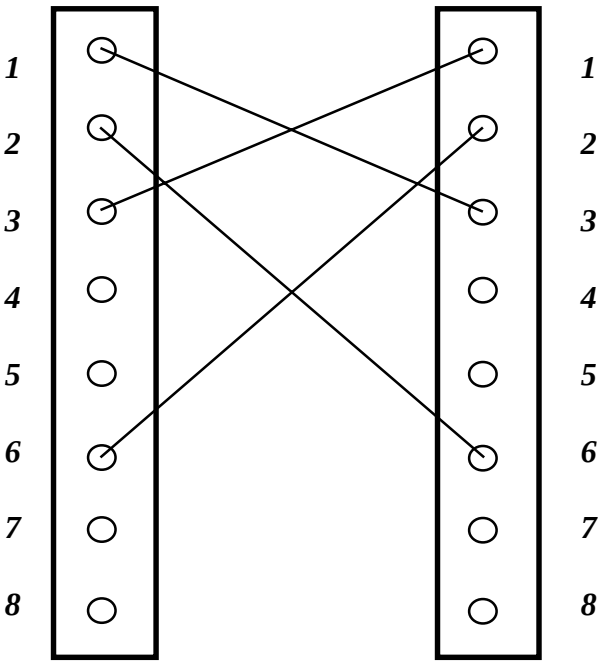


Figure 7
10BaseT Crossover Cable Pinout

B. Using Symphony With RangeLAN2 Cards

The Symphony product line uses a radio frequency technology similar to that used by Proxim's corporate product line, RangeLAN2. Therefore, there is a degree of compatibility between RangeLAN2 Cards and Symphony products. RangeLAN2 Cards can load Symphony drivers and use Symphony software to communicate over a Symphony Cordless Network. However, Symphony Cards cannot use RangeLAN2 drivers or software.

This compatibility allows customers who have a RangeLAN2 network in their office to also use RangeLAN2 Cards at home on a Symphony network. Using the Network Switcher, discussed in Chapter 8, a laptop installed with a RangeLAN2 PC Card may alternate between a RangeLAN2 network and a Symphony Cordless Network.

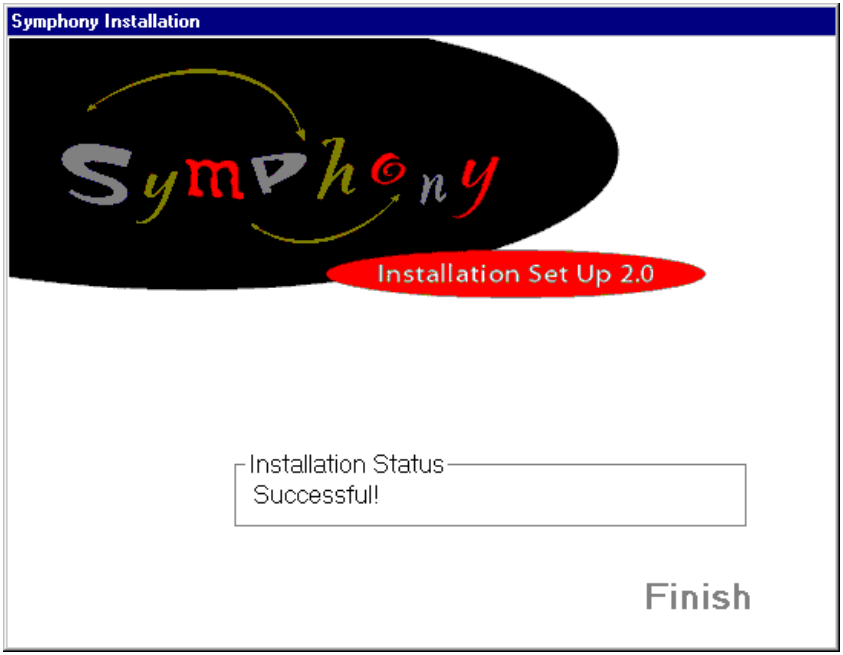
There are a few special considerations associated with alternating between two networks using the same RangeLAN2 Card. The Network Switcher accounts for the majority of these concerns, but requires a specific installation procedure in order to configure all of the network parameters properly.

Follow these steps to install the Symphony software on a computer that already communicates with a RangeLAN2 network:

1. Run SETUP.EXE from the Symphony Installation CD on a computer that already has the RangeLAN2 driver installed. The following dialog box should appear:

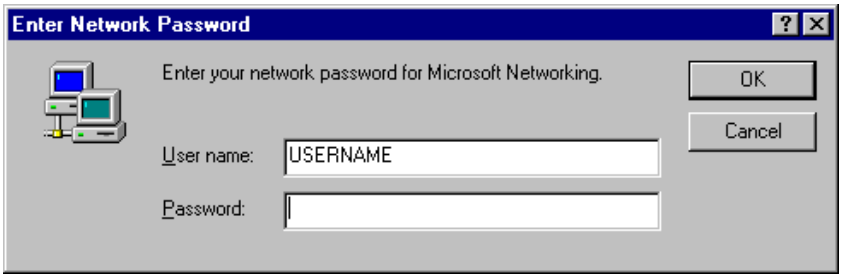
Click <Install> to continue.

2. Be patient while the Symphony Installation program installs all of the necessary operating files. The Symphony Installation screen will report when the installation has been successfully completed, as shown below. Restart the computer when prompted.



3. Windows (95 or 98) will make the final adjustments to its system to allow the Symphony Card to operate properly. Restart the computer a second time if prompted.

4. After the computer is restarted, you may be prompted to enter a network password before proceeding, as shown below. This will enable the computer's network functionality. Do NOT choose the <Cancel> option.



Enter a network User name and Password and click the <OK> button to log onto the network. The Password may be left blank. You will be prompted to confirm your Password before continuing.

5. The Symphony Composer Installation Wizard's Welcome screen will now appear. See Chapter 5 for additional information about this wizard. Among other things, it will prompt you to enter the Security Code used by the cordless network. Restart the computer if prompted.

The computer should now have access to the Symphony Cordless Network and will act like any other Symphony-enabled computer on the network. To revert to the RangeLAN2 configuration, simply change the Network Profile from "Symphony" to "Original" from within the Symphony Switcher configuration screen, by right-clicking the Switcher icon in the System Tray, or by selecting the "Original" profile at the Switcher DOS prompt during boot-up.

When you are ready to return to the Symphony Profile, simply use one of the three methods above to switch the current profile. Refer to Chapter 8 for more information on the Network Switcher and learn how to create and edit Network Profiles.

C. Using the Symphony Driver for Windows NT

The Symphony Installation CD contains a sub-folder labeled "WINNT." This folder contains the Symphony driver for Windows NT 4.0.

This driver provides full networking functionality for a Windows NT computer, just like any standard Ethernet card but without the wires. Windows NT computers with a Symphony Card installed can share files and printers with other network computers and participate in multi-user games over the network. A Windows NT computer can also access the Internet or communicate with a wired Ethernet network through a Symphony-HRF Cordless Gateway. There are many advanced networking features available with the Windows NT operating system; refer to the Windows NT documentation for additional information on these topics.

Users who have installed a Symphony Card in a Windows 95/98 computer will notice a few differences when using a card under Windows NT. First, the Symphony driver for Windows NT does not include any of the Symphony software tools that are installed with the Windows 95/98 driver, such as the Maestro Configuration Tool or Composer Installation Wizard. Also, a Windows NT computer with a Symphony Card installed will not show up in the Symphony Network Map of the network computers running Windows 95/98 even though the card may be operational.

Note:

Symphony-HRF Cordless Gateway users need at least one other computer running Windows 95 or Windows 98 on the network in order to configure and monitor the status of the Cordless Gateway since the Windows NT driver does not include the Symphony Composer and Symphony Maestro software tools.

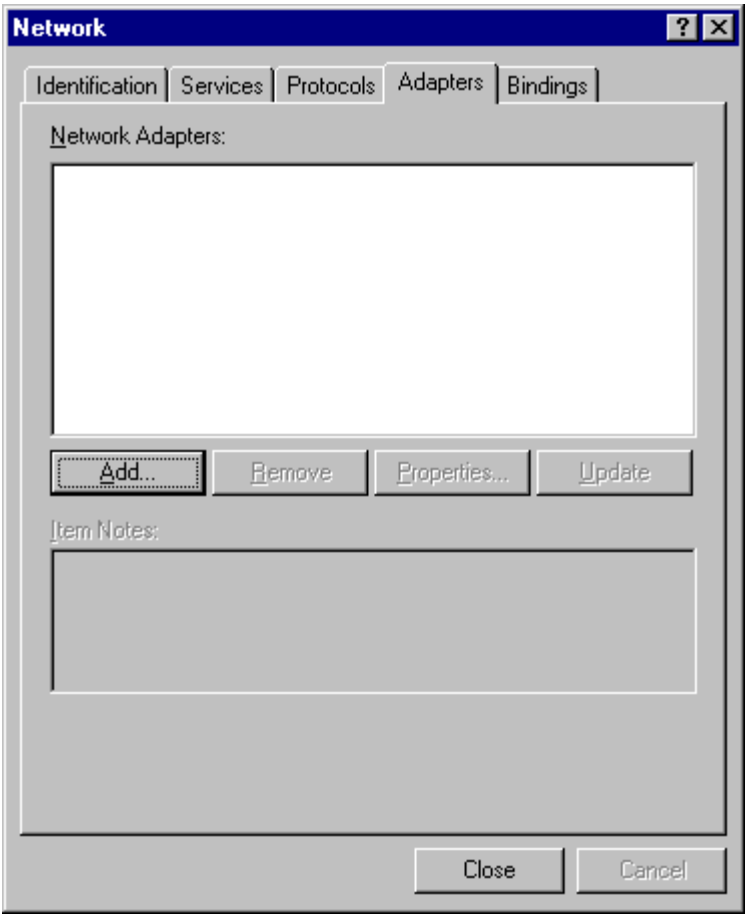
Installing the Symphony Driver for Windows NT

Since Windows NT 4.0 is not a plug and play operating system, a Symphony Card will not be auto-detected when first inserted into a PCMCIA, ISA, or PCI slot. Windows NT does not provide support for USB so a Symphony USB Adapter cannot be used with this operating system. Also, since Windows NT configures devices during boot-up, it is important to have the Symphony PC Card inserted in the PCMCIA slot before the computer is turned on.

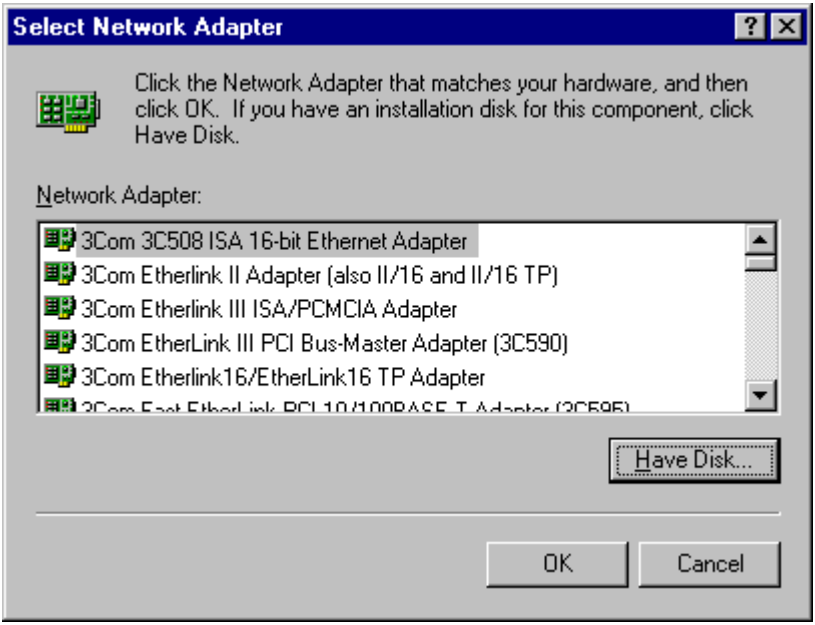
Follow these steps to install the driver:

1. Install the Symphony PC, ISA, or PCI Card following the hardware installation instructions contained in Chapter 3.

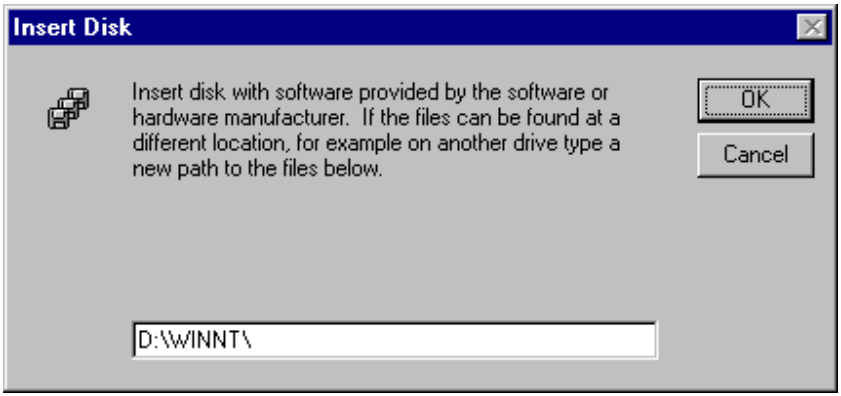
2. Turn on the computer and logon to the operating system. When the Windows NT desktop appears, open the Network icon in the Control Panel and choose the Adapters tab, as shown below.



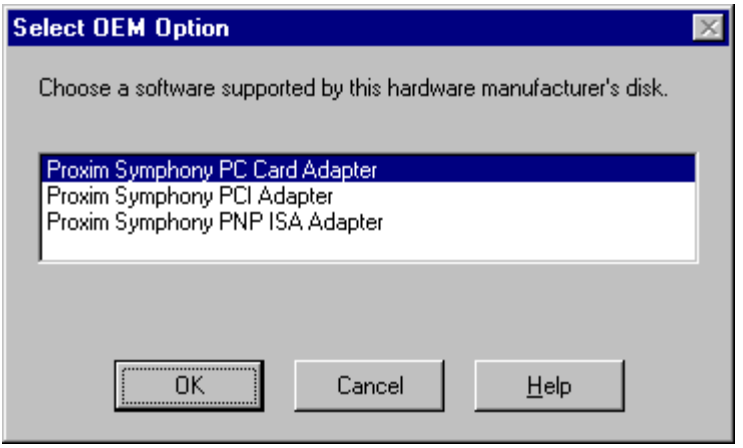
3. Click the <Add> button and choose the <Have Disk> option from the "Select Network Adapter" dialog box, as shown below.



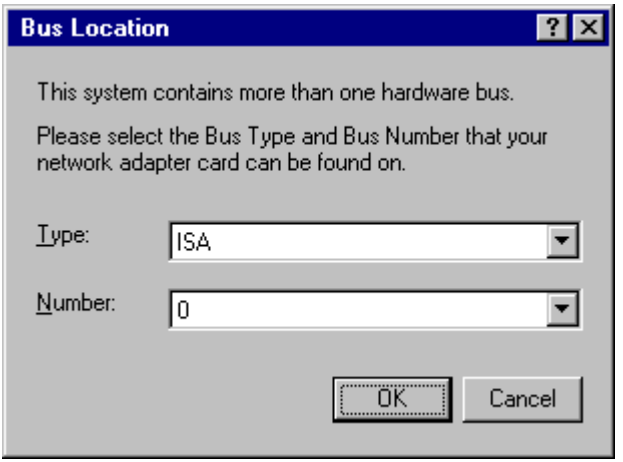
4. When prompted to insert a driver disk, insert the Symphony Installation CD into the CD-ROM drive and type the path for the Windows NT driver. In the example below, the CD-ROM drive is installed as drive letter D.



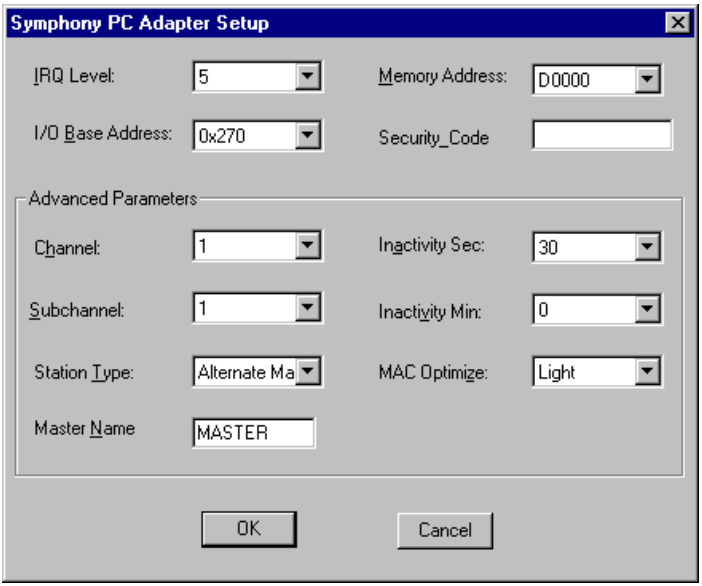
5. The OEM Option list will appear, as shown below. Highlight the entry in the OEM Option list that corresponds to the type of Symphony Card you are installing and click <OK>.



6. If you are installing a Symphony ISA or PC Card, you will be prompted to select a Bus Type and Number. For the Symphony ISA Card, choose ISA for the Bus Type and 0 for the Number; for the Symphony PC Card, choose PCMCIA for the Bus Type and 0 for the Number. Click <OK> to continue.



7. When the installation is complete, the Card Setup screen will appear. All of the Symphony parameters may be configured from within this screen, which offers different configuration options for each Symphony Card. The Card Setup screen for the Symphony PC Card is shown below.



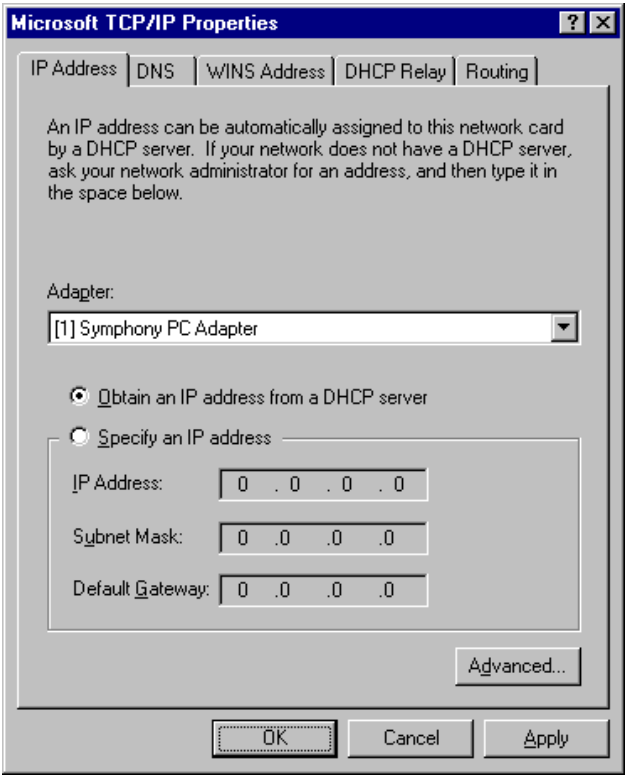
The installation of the Symphony PC Card requires that the user configure the card's IRQ Level, I/O Base Address, and Memory Address. The installation of the ISA Card requires that the user configure the IRQ Level and I/O Base Address. The Symphony PCI Card is automatically assigned an IRQ Level and I/O Base Address by the computer's BIOS, therefore these parameters are not visible within the PCI Card's Card Setup screen.

Configure the card resources (if applicable) and Security Code before proceeding. For the Symphony ISA and PC Card, the IRQ Level, I/O Base Address, and Memory Address (if applicable) must each be configured to a value which is not already in use or reserved by another device in the computer. In addition, the Security Code must be configured so that it matches the Security Code on all of the Symphony products on the network in order to establish communication. Proxim recommends that you leave the Advanced Parameters at the default values. For more information on the Advanced Parameters, see Appendix D.

At any time, you may return to the Card Setup screen to reconfigure the Symphony parameters by highlighting the Symphony Adapter entry in the Network's Adapter tab and clicking the <Properties> button.

8. Click <OK> to return to the Network Adapters screen. Install or configure any other required Network parameters, including Services or Protocols. Also, confirm that the TCP/IP protocol is installed under the Protocols tab if you want the computer to have Internet access. In addition, you can change the Computer Name and Domain for the computer under the Identification tab. You may want to change the computer's Domain so that it matches the Workgroup designation of the Windows 95/98 computers on the network. Choose <Close> when finished.

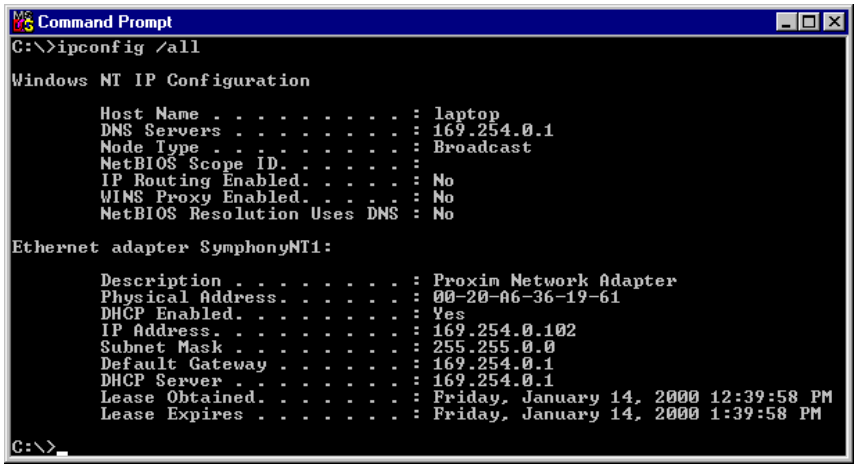
9. If you installed TCP/IP, you will be prompted to configure the TCP/IP parameters for the Symphony Card. If you are using the Symphony-HRF Cordless Gateway in NAT mode, select the "Obtain an IP address from a DHCP server" option and click <OK>, as shown below.



If you are using the Cordless Gateway in Transparent Bridging mode only and have a DHCP server on the Ethernet network, then select the “Obtain an IP address from a DHCP server” option and click <OK>. If you are using the Cordless Gateway in Transparent Bridging mode and do not have a DHCP server on the Ethernet network, you will need to specify an IP Address and Subnet Mask for the Symphony Card that are valid on the Ethernet network.

10. Click <OK> when you have finished configuring the TCP/IP parameters. You may be prompted that one of your adapter cards has an empty primary WINS address. If you do not have a WINS server on the network, click <Yes> to continue. Restart the computer when prompted.

11. After the computer restarts, the Windows NT driver should be loaded. If you configured the Symphony Card to obtain an IP Address from a DHCP server, a simple test to confirm that the card is working properly is to open an MS-DOS window and type “IPCONFIG /ALL” at a DOS prompt. This utility will report the IP Address of the Symphony Card and allow you to determine if the Symphony Card successfully received an IP Address from a DHCP server, as shown below.



If you manually assigned the Symphony Card an IP Address, a simple test to confirm that the card is working properly is to open an MS-DOS window and attempt to ping another Symphony device.

However, if the driver did not load properly, the Windows NT Event Viewer will report that an error has occurred.

If the Symphony PCI Card did not install properly, confirm that the computer's BIOS is configured to assign resources to the card.

If the Symphony ISA or PC Card did not install properly, the card most likely has a resource conflict and is trying to use an IRQ, I/O Base Address, or Memory Range (if applicable) which is either already in use or not available for use by the card. To resolve the conflict, open the Windows NT Diagnostics utility in the Administrative Tools section of the Start Menu and click the Resources tab to view the resources currently in use by the computer. After you have confirmed what resources are available, click the Adapters tab of the Control Panel's Network icon and view the properties for the Symphony ISA or PC Card Adapter to return to the Card Setup screen. Change the IRQ, I/O Base Address, or Memory Address (if applicable) to match the resources available for use by the Symphony Card.

Hint:

Generally, the IRQ will be the cause of the resource conflict. You may find that your computer has no free IRQ available for use. In this case, try setting the IRQ to a value of 3 or 4, which typically correspond to COM2 and COM1, respectively. If there is no free IRQ available and you are actively using both COM1 and COM2 or other devices are using these resources, then you will need to remove and uninstall one of the other devices from the computer before the Symphony Card may be used.

Uninstalling the Windows NT Driver

If at any time you need to uninstall the Symphony driver for Windows NT, follow these steps:

1. Remove the device from the Adapters list in the Network icon.

2. Remove the driver file, SYMPHONY.SYS, from the WINNT\SYSTEM32\DRIVERS directory.

3. Shut down the computer and remove the Symphony Card from the PCMCIA, ISA, or PCI slot.

D. Advanced Symphony Parameters

Several advanced Symphony parameters are visible within the Advanced tab of the Symphony Card's Properties screen in the Windows 95/98's Network icon and within the Windows NT Card Setup screen.

Proxim recommends that you do not alter these advanced parameters from their default values unless told to do so by a Symphony Technical Support representative.

Station Type

The Symphony Cordless Networking Suite uses a radio technology known as frequency hopping spread spectrum. This means that the frequency at which the devices communicate changes several times a second within a specific radio band.

In order for all devices to hop to the appropriate frequency at the same time, one radio must coordinate these movements. This device is known as the Master. A device which follow a Master's pattern is known as a Station. Two Masters cannot communicate with each other. Two Stations can communicate with each other if they have the same Master.

At any point in time, each Symphony device is either a Master or a Station. In addition, there is a third Station Type option, Alternate Master, which allows a device to become a Master if one is not present and otherwise it acts as a Station. Multiple Alternate Masters will decide among themselves which device will act as the Master.

A Symphony Cordless Modem, a computer running the Symphony Conductor Sharing Software, and a Symphony-HRF Cordless Gateway are always configured as Masters. Other Symphony devices act as Alternate Masters by default, but this may be changed using the Station Type parameter to be a Master, a Station, or an Alternate Master. Do not change this parameter unless directed to do so by Technical Support.

Master Name

The Master Name is a string of characters which identifies a Master device. This parameter is only valid for an active Master. Do not change this parameter unless directed to do so by Technical Support.

Channel and Subchannel

The Channel represents the frequency hopping pattern used by the Master device. The Subchannel provides a logical subdivision between Channels. These parameters are only valid for an active Master device. Do not change these parameters unless directed to do so by Technical Support.

MAC Optimize

This parameter accounts for the number of radios that are communicating on the Symphony network. By default, this parameter is set to Light in order to maximize throughput and reduce overhead. However, if you have 9 to 10 Symphony devices on the same Symphony network, you may see improved communication by changing this parameter to Normal. However, Proxim does not recommend that you change this parameter unless you are directed to do so by Technical Support.

Inactivity Timeout

This parameter is only visible for the Symphony PC Card. It controls when a Symphony PC Card will enter a low-power doze mode in order to conserve battery life. The Inactivity Minutes and Inactivity Seconds parameters are added together to arrive at the Inactivity Timeout period. After the specified period of inactivity has elapsed, the Symphony PC Card will enter the doze mode and draw a minimal amount of power from the computer. The card will awaken from doze mode to receive a message directed to it or to send a message to another Symphony device.

Setting both Inactivity Seconds and Inactivity Minutes to 0 will prohibit the Symphony PC Card from entering the doze mode. Note that disabling the doze mode will decrease the computer's battery life. If you intend to disable the doze mode, you may want to use the computer with AC power.

Note:

The Symphony PC Card will not emerge from doze mode in response to a broadcast packet. In general, this is not a problem because communication will typically be initiated from the mobile computer. However, if you need the device to respond to broadcast packets all of the time, you may disable the Inactivity Timeout parameter, as described above. Alternatively, advanced users may configure a static entry for the Symphony PC Card in other computers' ARP table.

E. How to Reach Technical Support

If you are having a problem using any of the Symphony Cordless Networking products and cannot resolve it with the information in Chapter 12 or with information from the Symphony Web site, gather the following information and contact Symphony Technical Support:

- ❑ What are the configuration settings?
- ❑ What were you doing when the error occurred?
- ❑ What error message did you see?
- ❑ Can you reproduce the problem?
- ❑ What version of the software are you using with each of your Symphony products?

You can reach Symphony Technical Support by voice, fax, E-Mail, or mail:

Tel: 408-731-2780
Fax: 408-731-3676
Web: http://www.proxim.com/symphony
E-Mail: symphony_support@proxim.com

Proxim, Inc.
Attn: Symphony Technical Support
510 DeGuigne Drive
Sunnyvale, CA 94086

F. U.S. Specifications

The following technical specification for the Symphony-HRF Cordless Gateway is for reference purposes only. Actual product performance and compliance with local telecommunications regulations may vary from country to country. Proxim, Inc. will only ship products that are type approved in the destination country.

Network Interface	Ethernet 10BaseT (Twisted-Pair)
Data Rate	1.6 Mbps — Radio 10 Mbps — Ethernet
Frequency Band	2.4-2.483 GHz (in the U.S.) (spread spectrum frequency hopping)
Output Power	100 mW
Range	A radius of up to 150 feet
Operating Temperature	0°C to +40°C
Power Supply	6-15 V DC, 1 A minimum

G. Regulatory Information

FCC WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ❑ Reorient or relocate the receiving antenna.
- ❑ Increase the separation between the equipment and the receiver.
- ❑ Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- ❑ Consult the dealer or an experienced radio/TV technician for help.

Warning!

It is the responsibility of the users of the Symphony-HRF Cordless Gateway to guarantee that the antennas are operated at least one inch from any person. This is necessary to insure that the product is operated in accordance with the RF Guidelines for Human Exposure which have been adopted by the Federal Communications Commission.

Index

E

F

G

I

L

M

N

O

P

R

S

T

U

V

W

X