

BARR/SYNC

for Microsoft Networks

A High-Speed, Synchronous Adapter and Software Drivers for
Microsoft Networks



Documentation Edition 4
Software Version 5.03 or later

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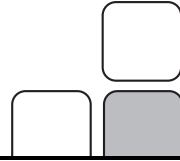
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March 16, 2004

Preface



BARR/SYNC *for Microsoft Networks* is a high-performance product that offers synchronous communications at up to T1 (1.536 megabits per second [Mbps]) and E1 (2.048 Mbps) speeds using V.24/RS232, V.35, X.21, or RS530 line interfaces.

Follow the instructions in this manual to install and configure the BARR/SYNC *for Microsoft Networks* software. Refer to the online Help for additional information.

Technical Support

Contact Barr Technical Support at 800-BARR-SYS, Monday through Friday, if you have questions or problems with Barr hardware or software. See the Barr Systems Web site (www.barrcentral.com) for hours of operation. Technical Support will ask for your software version number and hardware serial numbers. When you call, please have this information on hand.

If you contact Technical Support by fax, e-mail, or the Web site support page (www.barrcentral.com), please include the hardware serial number and software version number in your correspondence.

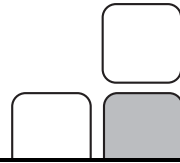
You can obtain the software version number in the following ways:

- View the **Link** tab of the BARR/SYNC *for Microsoft Networks* utility.
- View the properties of the BarrSync.sys file in Microsoft Windows Explorer and select the **Version** tab.
- Run the SNAVER program on the BarrSdlc.dll or IBMX25.dll file.

See the *SYNC MAX PCI Adapter* hardware manual for adapter serial number locations.

Notes:

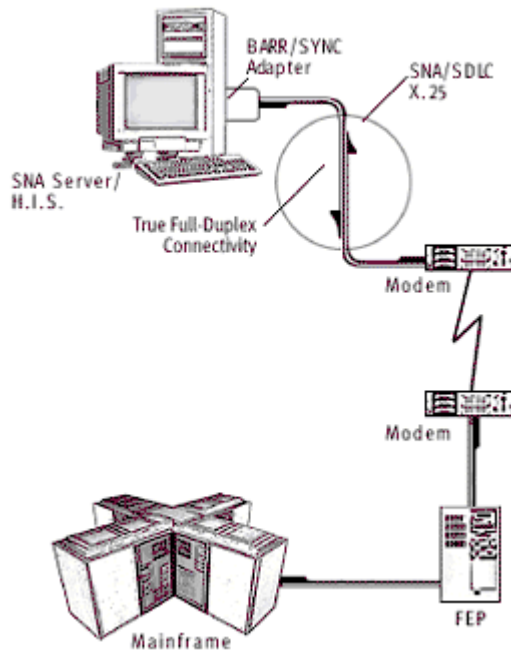
Contents



Preface	iii
1. Introduction	1
1.1 Features	2
1.2 Computer requirements	2
1.3 Package contents	2
2. Install and Configure the Software	3
2.1 Install the software	3
2.2 Install the hardware	4
2.3 Run hardware diagnostics	5
2.4 Configure the SNA gateway	7
3. Use Online Help	15
3.1 Launch the Help	15
3.2 Navigate within the Help	15
3.3 Get more out of HTML Help	18
3.4 Copy or print a Help topic	19
3.5 Customize your Help	20
A. SDLC Performance Tuning	21
A.1 Line efficiency	21
A.2 Host tuning parameters	21
Warranty	23
Glossary	29
Index	33

Notes:

BARR/SYNC *for Microsoft Networks* provides high-speed, full-duplex communications for Microsoft Host Integration Server 2000 (HIS) or SNA Server. The package includes the SYNC MAX PCI adapter, software drivers to work with the SNA gateway, diagnostics, and online Help.



Few downstream devices offer the ability to simultaneously send data to and receive data from a single device on an SDLC link. Although this capability is supported by virtually all front-end processors (FEPs), most SNA gateways and controllers allow duplex operation only on distinct sending and receiving devices. Independent testing has shown that the Barr adapter used by BARR/SYNC *for Microsoft Networks* can actually double bidirectional traffic at a given SDLC link speed. This is achieved by supporting the DATMODE=FULL parameter. Even when most of the SNA traffic goes in one direction, performance can be significantly improved because acknowledgments can be transmitted as the software receives data.

1.1 Features

BARR/SYNC *for Microsoft Networks* includes the following features and benefits.

- Allows flexible mainframe connections at speeds up to T1/E1
- Doubles SDLC throughput by supporting true full-duplex operation using DATMODE=FULL
- Supports SDLC and X.25/QLLC mainframe connections
- Supports up to four adapters on the computer for simultaneous use (the actual number of adapters you can use depends on system resources)
- Supports multi-PU SDLC or X.25 configurations; as many as 254 physical units can be active on each adapter
- Includes diagnostic tools that thoroughly check the adapter, verifying that the adapter is installed correctly and functioning properly

1.2 Computer requirements

You can install BARR/SYNC *for Microsoft Networks* on a computer that meets the hardware requirements listed in the *SYNC MAX PCI Adapter* hardware manual. Additionally, the following software must be installed on your computer.

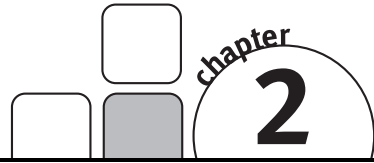
- Microsoft Windows XP or Microsoft Windows 2000 and Microsoft Host Integration Server 2000 (HIS) or Microsoft Windows NT (with Service Pack 6a) and Microsoft SNA Server version 4.0
- Microsoft Internet Explorer version 5.5 or later

1.3 Package contents

The BARR/SYNC *for Microsoft Networks* software package includes the BARR/SYNC *for Microsoft Networks* software disk. See your *SYNC MAX PCI Adapter* hardware manual for hardware package contents.



Install and Configure the Software



Barr software provides the link between the SYNC MAX PCI adapter and the SNA Server or HIS software. To accomplish this link, you need to configure the Barr SDLC or Barr X.25 link service. Follow the instructions in this chapter to install BARR/SYNC *for Microsoft Networks* and configure the SNA gateway.

First installation

If you are installing BARR/SYNC *for Microsoft Networks* for the first time, follow these steps.

1. Install the software
2. Install the hardware
3. Run hardware diagnostics
4. Configure the SNA gateway

Installing an update

If you are updating previously installed software, you only need to load the new software files. You do not need to add the link service or configure the device driver, but you might want to change the Barr software options.

Follow these steps to install an update.

1. Install the software
2. Modify SNA gateway configuration, if necessary

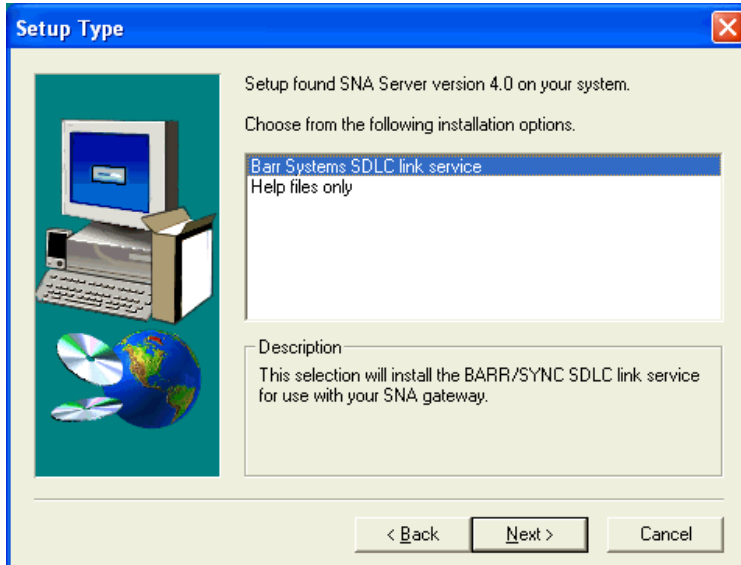
2.1 Install the software

Use the Barr setup program to load the Barr software. Before you run the setup program, you should exit all Windows programs. You can exit the setup program at any time by clicking **Cancel** or pressing F3.

Follow these steps to install the software.

1. Insert the Barr software disk into your disk drive.
2. From the taskbar, click Start | **Run**.

3. Type **a:setup** (for *a*, substitute the letter of your floppy disk drive).
4. Click **OK**.
5. Read the text on the **Welcome** dialog box, and click **Next**.
6. On the **Setup Type** dialog box, select **Barr Systems SDLC link service** and click **Next**.



7. On the **Select Program Folder** dialog box, specify a folder where the files will be installed and click **Next**.
8. On the **Setup Complete** dialog box, select **Finish** to complete the installation.

2.2 Install the hardware

Complete the following steps to install the hardware. The steps will vary depending on your operating system.

Windows NT

Complete the following steps to install the hardware for Windows NT.

1. Install the SYNC MAX PCI adapter and cables as described in your *SYNC MAX PCI Adapter* manual.
2. Turn on your computer. The installation is complete.

Windows 2000

Complete the following steps to install the hardware for Windows 2000.

1. Install the SYNC MAX PCI adapter and cables as described in your *SYNC MAX PCI Adapter* manual.
2. Turn on your computer.
3. The **Found New Hardware** dialog box displays. The installation is complete once Windows successfully locates and installs the device driver.

Windows XP

Complete the following steps to install the hardware for Windows XP.

1. Install the SYNC MAX PCI adapter and cables as described in your *SYNC MAX PCI Adapter* manual.
2. Turn on your computer.
3. Windows displays a message that the Device Manager is scanning for Plug and Play compliant hardware.
4. The Found New Hardware Wizard opens.
5. Select **Install the software automatically** and click **Next**.
6. Windows will search for the software and then install the appropriate device driver.
7. Once Windows has successfully located and installed the appropriate device driver, a dialog box will display confirming that the Found New Hardware Wizard has finished installing the software.
8. Click **Finish** to close the wizard. The installation is complete.

2.3 Run hardware diagnostics

The self-test consists of two diagnostics: the signal lead test and the local loop back test. Both tests require the test plug that comes strapped to the modem cable.

Signal lead test – The signal lead test checks the BARR/SYNC adapter's send and receive pins. First, the software sends a signal out to each send pin. Next, the test plug routes the signal back through the corresponding receive pin. Finally, the software checks that the signal returns through the correct pin. Signal lead test errors indicate the circuit that failed, (for example, **CTS circuit failed** or **DCD circuit failed**).

Local loop back test – During the local loop back test, the software sends a data string of 256 characters in a rotating pattern. The test plug returns the data through the receive side of the adapter. Then the software verifies that the returned data matches the sent data. The data string is sent at the **Data rate** speed configured on the BARR/SYNC for Microsoft Networks **Adapter** tab or the **Properties** tab in Device Manager. If the software receives errors from the local loop back test, the following message displays: **Loop Back Test failed**.

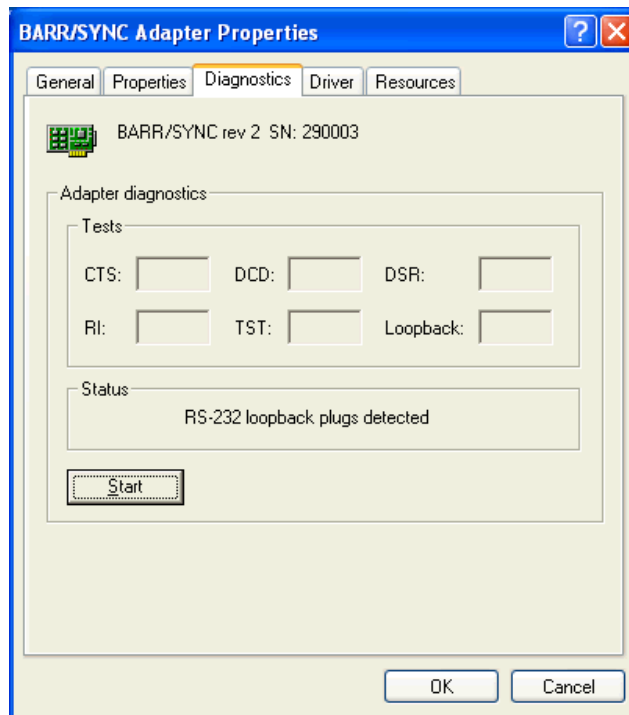
You must run the self-test using Device Manager. Complete the following steps.

1. Attach the test plug to the SYNC MAX PCI adapter. The test plug comes strapped to the modem cable so you can run the test whenever necessary.
2. Open Device Manager.
 - a. From the Windows desktop, right-click the **My Computer** icon and select **Properties**.
 - b. From the **System Properties** dialog box, select the **Hardware** tab and click **Device Manager**.
3. In Device Manager, click the plus sign (+) next to **Barr adapters**.
4. Right-click the appropriate device and select **Properties**. The **Properties** dialog box displays.
5. From the **Properties** tab, set the **Data rate** for communications. This determines the speed at which the loop back test will be run. The default value is 9600.



The maximum data rate you can achieve depends on several factors, including the speed of mainframe communications equipment.

6. From the **Diagnostics** tab, click **Start** to begin the self-test. As the self-test runs, diagnostic status messages display.



7. Check the test results.
8. Click **OK** or **Cancel** to close the utility.
9. Remove the test plug and install the host cable. You can now configure the SNA gateway.

2.4 Configure the SNA gateway

After you load the Barr software, you need to add and configure the Barr SDLC or Barr X.25 link service and configure the connection.

Install the X.25 link service (X.25 only)

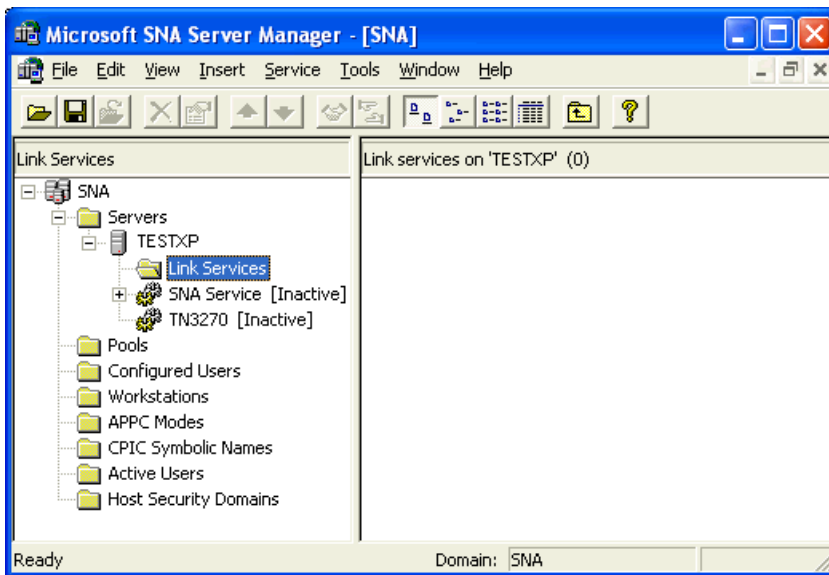
If you are using an X.25 link service on an HIS system, you must install the IBM X.25 link service. If you are using SNA Server, the X.25 link service is automatically installed during SNA Server installation. If you modified your SNA Server settings and disabled the link service installation, follow these steps to install the link service.

1. Insert the SNA gateway CD into the CD-ROM drive.
2. Right-click **Start** on the taskbar, and click **Explore**.
3. Navigate to the CD-ROM drive and double-click **Setup.exe**.
4. From the startup screen, click **3rd party link services**.
5. On the **Welcome** screen, click **Next**.
6. Under **Hardware Support**, select **IBM Corporation** and click **Next**.
7. Click **Finish**. The wizard will continue with the installation of the third party link service.
8. Continue clicking **Next**, and then click **Finish** to complete the installation.

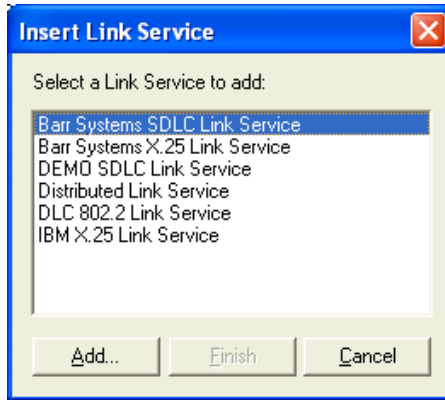
Add and configure the link service

Follow these steps to add and configure a link service from the Microsoft SNA Manager.

1. Open Microsoft SNA Manager.
 - **For SNA Server** – From the taskbar, click Start | Programs | Microsoft SNA Server | **Manager**.
 - **For HIS** – From the taskbar, click Start | Programs | Host Integration Server | **Manager**.
2. Open the **Servers** folder in the left column of the window, and select the server to which you want to add the link service.

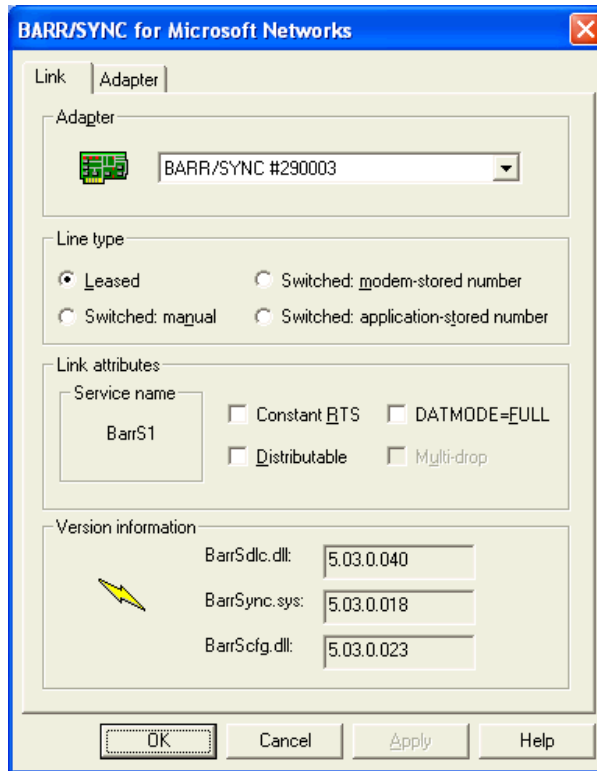


3. Add the link service.
 - **For SNA Server** – On the menu bar, select Insert | **Link Service**. The **Insert Link Service** dialog box displays.
 - **For HIS** – Right-click the **Link Services** folder and select New | **Link Service**. The **Insert Link Service** dialog box displays.



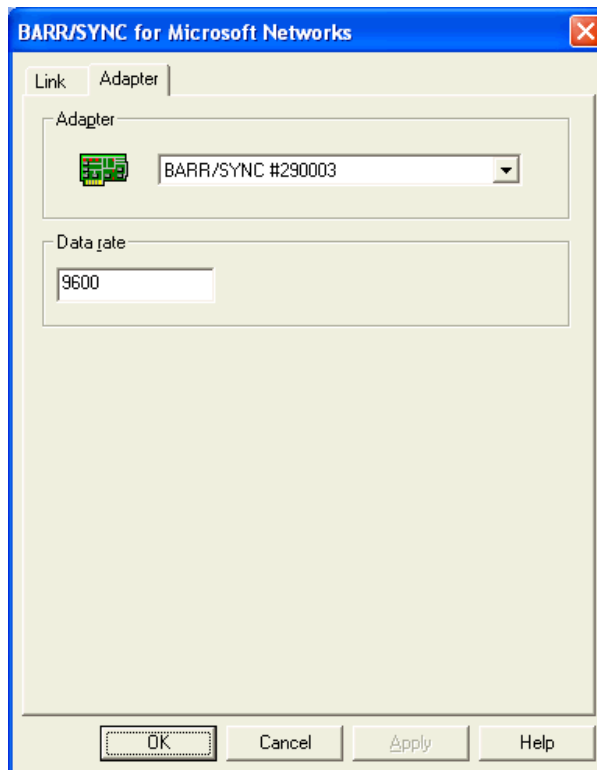
4. If you will be using an SDLC connection, select **Barr Systems SDLC Link Service**. If you will be using an X.25 connection, select **Barr Systems X.25 Link Service**.
5. Click **Add** to display the BARR/SYNC for Microsoft Networks utility.

6. Use the **Link** tab to configure the Barr link service.



- a. Select the **Adapter** to use with the BARR link service. BARR/SYNC *for Microsoft Networks* supports up to four adapters.
- b. Select the **Line type** based on your communications line, either leased or switched. Use a leased line for data communications. A switched line is a standard telephone line. If you use a switched line, specify how you dial the telephone number. You can choose one of these line types:
 - **Leased** – An end-to-end communications line exclusively for your data communications. Also called private line or leased circuit.
 - **Switched: manual** – A standard telephone line with manual dialing. SNA Server or HIS prompts you to dial the telephone number.
 - **Switched: modem-stored number** – A standard telephone line with dialing through your modem. Your modem must be configured to dial the number when it raises Data Terminal Ready (DTR).
 - **Switched: application-stored number** – A standard telephone line where SNA Server or HIS stores the telephone number and dials for you.

- c. Select the **Link attributes**. The **Service name** is the name assigned to the Barr service by SNA Server or HIS (for example, **BarrS1** or **BarrX1**). The link attributes options are described below.
- **Constant RTS** – Option for modems that provide a constant Request To Send (RTS) signal. In most cases, selecting **Constant RTS** will provide higher throughput. You must use **Constant RTS** for some full-duplex modems. Do not select **Constant RTS** if you use a multi-drop connection.
 - **Distributable** – You can allow the Barr SDLC link service to be distributed throughout the gateway's domain. A Distributed Link Service (DLS) lets other gateways share high-speed mainframe access.
 - **DATMODE=FULL** – Full duplex is simultaneous, two-way transmission. You can send and receive data simultaneously, which results in twice the throughput. You can even improve one-way throughput because you can receive acknowledgments while you send data. **DATMODE=FULL** is not available for X.25 links.
 - **Multi-drop** – If your host connection is provided through a multi-drop or line sharing configuration, use this setting to ensure all devices on the line will be able to function. This setting is only relevant if **DATMODE=FULL** is also selected.
7. Use the **Adapter** tab to configure your adapter settings.



- a. Choose the **Adapter** to use with the Barr link service. BARR/SYNC for *Microsoft Networks* supports up to four adapters.
- b. Set the **Data rate** for communications. The default value is 9600. This value is used in the following cases:
 - When you use an application-stored telephone number with a Hayes-compatible modem, this field supplies the baud rate. The baud rate is used to communicate with the modem in asynchronous mode while it sends the dial string and setup commands.
 - When you use the optional Barr synchronous modem eliminator (SME) cable, this field supplies the data rate for synchronous communications. The BARR/SYNC adapter provides a modem clock signal.
 - When you run hardware diagnostics, this field determines the speed at which the diagnostics loop back test will be run.



The maximum data rate you can achieve depends on several factors, including the speed of mainframe communications equipment.

8. If you are using an X.25 connection, select the **X.25** tab. Match the **Local NUA address** as assigned by the network administrator and set any other parameters that differ from the defaults. See the Help for a description of each option.

BARR/X.25

Link | Adapter | **X.25**

General Settings

BARRX1 Local NUA address: 0000000000000000

Default L3 window: 2 I1 timeout: 30

Default L3 packet: 128 N2 retry limit: 10

L2 window size: 7

Accept reverse charge Incoming filter

Startup restart Select standby

Channel ranges

Outgoing: Incoming:

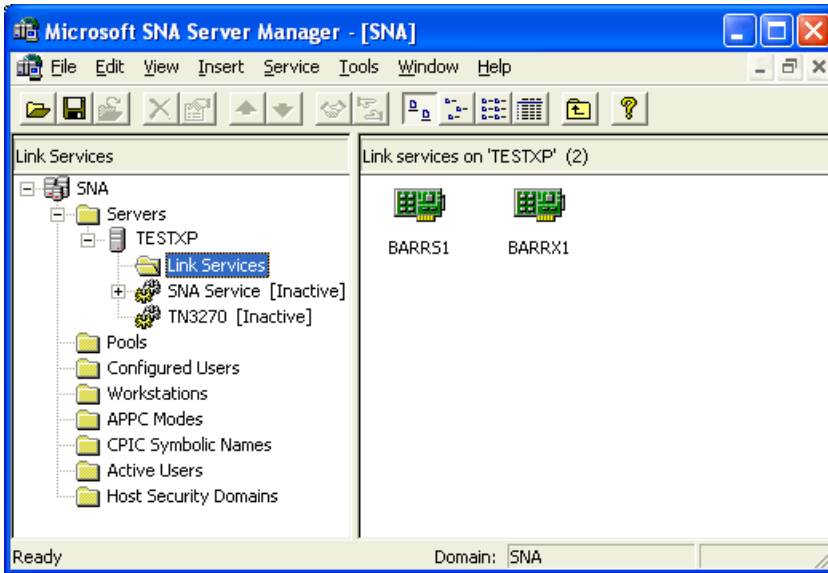
Two way: 0001-0004 FVC:

Data rate: High Low

Encoding: NRZ NRZI

OK Cancel Apply Help

9. When you finish configuring the device driver, click **Apply**. Click **OK** to exit the BARR/SYNC for Microsoft Networks utility.
10. When the **Insert Link Service** dialog box redisplay, click **Finish**. The **BarrS1** or **BarrX1** icon displays in the Microsoft SNA Manager's **Link services** pane. Messages are displayed while the system network bindings are updated.

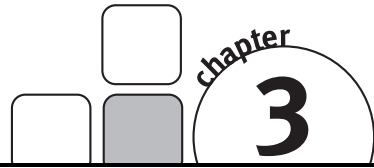


Insert and configure the connection

Follow these steps to insert and configure a connection from the Microsoft SNA Manager.

1. Open Microsoft SNA Manager.
2. Add a connection.
 - **For SNA Server** – On the menu bar, select Insert | Connection | **SDLC** or **X.25**, depending on your connection type.
 - **For HIS** – Right-click the Connections folder and select New | **SDLC** or **X.25**, depending on your connection type.
3. From the **General** tab, select the Barr link service from the **Link Service** drop-down list. Continue to configure your connection as needed. (See the Microsoft SNA Server or HIS Help for more information.)
4. Click **OK** to save the configuration.

Notes:



HTML Help provided with BARR/SYNC *for Microsoft Networks* provides information on installing, configuring, and operating the software. In HTML Help, the familiar WinHelp window has been refashioned into an HTML Help viewer – a combination of the standard Help window with the added functionality of an Internet browser. HTML Help incorporates a complete table of contents, comprehensive index, and a full text search with advanced search capabilities. HTML Help can be accessed at any time by clicking **Help** or pressing F1. You can also access new help topics by visiting our Web site.

3.1 Launch the Help

Use any of these methods to display the online Help.

- **From tab pages or dialog boxes** – Click **Help** or by press F1.
- **From Windows Explorer** – Using Windows Explorer, navigate to the folder where you installed the Help files (unless otherwise specified, the default folder is \\Program Files\Common Files\Barr\Help) and double-click the **Syncmsn.chm** file to display the Help.

3.2 Navigate within the Help

You can browse through help topics or use the **Contents**, **Index**, **Search**, or **Favorites** tabs to locate the topic of your choice.

Browse through Help topics

It is often helpful to browse through help topics when looking for information.

Use the **Back** button to move backward in the sequence of topics you have viewed.
Use the **Forward** button to move forward in the sequence of topics you have viewed.

Use the Contents tab

The table of contents in an HTML Help system is a tree outline that displays topics in an expandable/collapsible hierarchy.

Follow these steps to find a topic in the table of contents.

1. Select the **Contents** tab.
2. Open or close books by clicking on them. A closed book has a plus sign (+) next to it, and an open book has a minus sign (-).
3. Click the topic you wish to view.

Use the Index tab

The index provides a multilevel list of keywords that are found in the Help. The index is hierarchical – like the kind you find at the back of a book – and can include multiple levels.

Follow these steps to find a topic using the index.

1. Select the **Index** tab.
2. Type a word or scroll through the list of index entries.
3. To see any topics associated with a keyword, double-click it or select it from the list and click **Display**.
4. If there is more than one topic associated with a keyword, select a topic from the **Topics Found** dialog box.



Topics are often indexed under more than one entry.

Use the Search tab

The **Search** tab allows you to perform a full-text search. With full-text searching, you can search through every word in a Help system. A basic search consists of the word or phrase you want to find. Advanced searches can incorporate Boolean operators, wildcard expressions, nested expressions, similar word matches, a previous results list, or topic titles to further define a search.

The basic rules for formulating search queries are as follows.

- Searches are not case-sensitive, so you can type your search in uppercase or lowercase characters.
- You may search for any combination of letters (a-z) and numbers (0-9).

- Punctuation marks such as the period, colon, semicolon, comma, and hyphen are ignored.
- Group the elements of your search using double quotes or parentheses to set apart each element. You cannot search for quotation marks.



When searching for words in help topics, you can have each occurrence of the word or phrase highlighted in the topics that are found. To highlight all instances of a search word or phrase, on the Help toolbar click Options | **Search Highlight On**.

Run a simple search

Follow these steps to run a simple search.

1. Select the **Search** tab.
2. Type the word or phrase you want to find.
3. Press ENTER or click **List topics**.
4. To view a found topic, double-click it or select the topic and click **Display**.

Advanced search features

The following are the available advanced search features.

- **Boolean operators** – You can include Boolean operators in your search. To insert a Boolean operator in your search, click the arrow next to the search text box and select **AND**, **OR**, **NOT**, or **NEAR**.
- **Advanced search** – Use the check boxes at the bottom of the **Search** tab to select advanced search options **Search previous results**, **Match similar words**, and **Search titles only**.



For more information on advanced search features, refer to the *Using the Help* Help topic.

Use the Favorites tab

It may be helpful to maintain a list of favorite help topics that you reference frequently. Below are the steps to add topics to a list, return to a favorite topic, rename a topic, or remove a topic.

Add a topic

Follow these steps to add a topic to your list of favorites.

1. Locate the help topic you want to make a favorite topic.
2. Select the **Favorites** tab and click **Add**.

Return to a favorite topic

Follow these steps to open a topic in your list of favorites.

1. Select the **Favorites** tab and select the topic in your list.
2. Double-click the topic or click **Display**.

Rename a topic

Follow these steps to rename a topic in your list of favorites.

1. Select the **Favorites** tab.
2. Right-click the topic and click **Rename**.
3. Type a new name and press ENTER.

Remove a favorite topic

Follow these steps to remove a topic from your list of favorites.

1. Select the **Favorites** tab.
2. Select the topic and click **Remove**.

Use the Glossary tab

The glossary provides an alphabetized list of terms and definitions related to *BARR/SYNC for Microsoft Networks*. Complete the following steps to use the glossary.

1. Select the **Glossary** tab.
2. Scroll through the list of glossary entries.
3. Select a term from the list and view the definition in the lower portion of the **Glossary** tab.



You can also search for a glossary term by typing the first letter of the word you are looking for. The **Term** window will focus on words beginning with that letter.

3.3 Get more out of HTML Help

Here are some tips on how to find more information when using HTML Help.

- To link to another topic or Web page, click the hyperlinks.
- To view topics that contain related information, use the “See also:” and “What do you want to do?” topic links.
- To see if a word or phrase contained in a topic is in the index, select the word, and then press F1.
- If you use a particular help topic often, you can add it to your favorites list.
- Right-click in the **Contents** tab or topic pane for shortcut menu commands.

3.4 Copy or print a Help topic

When HTML Help is displayed, you can copy or print help topics.

Copy a Help topic

You can copy help topics to the Clipboard with one of these methods. You can paste the topic text into a text editor, such as Microsoft Word, or into an e-mail message.

1. In the topic pane, right-click anywhere in the topic you want to copy, and choose **Select All**.
2. Right-click again, and then click **Copy**. This copies the topic to the Clipboard.



If you want to copy only part of a topic, select the text you want to copy, right-click, and then click **Copy**.

3. Open the document you want to copy the topic to.
4. Place the pointer where you want the information to appear.
5. On the menu bar, select Edit | **Paste**.

Print a Help topic

There are three ways to print a Help topic.

- To print the currently displayed topic, click **Print** on the Help toolbar.
- In the topic pane, right-click anywhere in the topic and select **Print**.
- From the **Contents** tab, right-click a topic and then select **Print**. You will be given the option of printing only the current topic, or the current heading and all subtopics.



When printing an HTML Help topic, you can control the margins, headers, and footers. On the Microsoft Internet Explorer's menu bar, select File | **Page Setup** to access these features. Changes made in Internet Explorer affect printing from the Help view. Use the ? on the **Page Setup** dialog box to learn more about the features.

3.5 Customize your Help

As with any window, you can easily change the size and location of the Help viewer. In addition, you can resize the navigation and topic panes and set color, font, and accessibility options.

Show or hide the navigation pane

Use the following methods to show and hide the navigation pane.

- Click **Hide** to close the navigation pane from view.
- Click **Show** to display the navigation pane.

Resize the navigation or topic pane

Follow these steps to change the size of the navigation pane or the topic pane.

1. Point to the divider between the two panes.
2. When the pointer changes to a double-headed arrow, drag the divider right or left.

Resize the Help viewer

Follow these steps to change the size of the Help viewer.

1. Point to any corner of the Help viewer so the pointer changes to a double-headed arrow.
2. Press the left mouse button and drag up, down, left, or right. The viewer is resized after you release the mouse button.

Change colors, fonts, and accessibility options

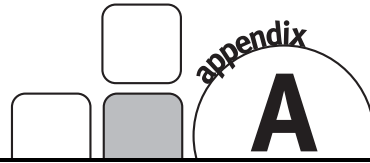
Follow these steps to change the colors, fonts, or accessibility options of your viewer.



Changing these settings will also change your settings for Internet Explorer.

1. On the Help toolbar, click Options | **Internet Options**.
2. On the **General** tab, click **Colors, Fonts**, or **Accessibility**.
3. Select the options you want, and then click **OK**.
4. To apply the new settings, in the **Internet Options** dialog box, click **OK**.

SDLC Performance Tuning



Determining expected throughput is easier for SDLC links than for other line types. An SDLC line always has an explicit speed rating (sometimes called bandwidth) that tells you what kind of throughput to expect. Dial-up lines are typically 4.8 or 28.8 Kbps (28,800 bps). A common bandwidth for a leased line is 56 Kbps (56,000 bps), although leased lines can go much higher. Fortunately, SDLC is an efficient protocol with not much overhead, so you should be able to approach 90 percent or better of the speed rating in your throughput tests. For example, on a 56 Kbps line, you can expect about 50 Kbps of actual throughput.

A.1 Line efficiency

SDLC has high line efficiency because usually only two parties try to use the line: the host and the remote. Even dial-up lines are efficient because you have a dedicated (although temporary) line to your host after you establish a connection. Occasionally, an SDLC line is shared in a multi-drop arrangement, which can reduce the throughput on each drop. As you might expect, if several other remotes simultaneously talk to the host on the same line, you might get only a fraction of the line's bandwidth.

A.2 Host tuning parameters

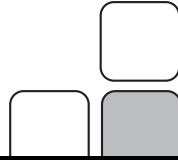
Three key parameters most dramatically affect SDLC line performance: **DATMODE**, frame size (or **MAXDATA**), and pacing (or **MAXOUT**). The host has absolute control over these settings and the remote software merely follows orders. The following table provides information about these settings, including default and recommended values. The host typically does not default to the recommended values.

Parameter	Range of Values	Default Value	Best Throughput
DATMODE	HALF, FULL	HALF	FULL
Frame Size (MAXDATA)	256, 512, 1024	256 or 512	1024
Pacing (MAXOUT)	0-255	0	7

These parameters appear in the host's physical unit (PU) definition. For SNA Server or HIS, match the **MAXBTU** link service parameter to the host's **MAXDATA** value.

Notes:

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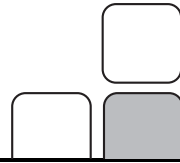
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Glossary



adapter

Add-on piece of equipment you can plug into a computer to allow the computer to connect to another device.

asynchronous communication

Computer-to-computer communications in which the sending and receiving computers do not rely on timing as a means of determining where transmissions begin and end.

bps

Abbreviation for bits per second.

communication link

The physical connection and link protocol between the remote workstation and the host computer.

communications protocol

A specification of data and control message formats and their meanings. Both the sender and receiver in a communication link follow this specification.

controller

A device that coordinates and controls the operation of one or more input/output devices, such as workstations, and synchronizes the operation of such devices with the operation of the system as a whole.

data

A representation of facts, concepts, or instructions in a formalized way for communication, interpretation, or processing by human or automatic means.

data rate

The speed of a data transfer process normally expressed in bits or bytes per second.

device driver

A file that contains the code needed to use an attached device or a program that enables a computer to communicate with a specific peripheral device.

diagnostics

A program to detect and isolate errors in programs and faults in equipment.

dial-up line

See switched line.

driver

Software program that controls a specific device, such as a printer or a network connection. Drivers load into memory and stay active while you do other work.

front-end processor

A processor that relieves the host computer of certain processing tasks such as line control, message handling, code conversion, and error control. Examples include the 3725 and 3745.

full duplex

A communication link that allows simultaneous transmission of data in both directions (in contrast to half duplex).

half duplex

A communication link that only allows for transmission of data in one direction at a time (in contrast to full duplex).

host computer

A computer that controls the communications network and has databases and large computing and memory capacity. Other computers can connect to the host to share its resources.

icon

A graphic symbol displayed on a screen, that a user can point to with a device such as a mouse to select a particular function or software application.

Kbps

Abbreviation for kilobits per second.

mainframe

Term used for a large central computer that offers a full set of computing services. The term originated in the days when the central processor, memory, and input/output channels were located in one central housing called the mainframe. Synonymous with host computer.

Mbps

One million bits per second.

modem

Modulate/demodulate. A device that interfaces between a digital communication link and an analog communication link. Usually the digital link is a computer or terminal and the analog link is a telephone line. Modulate means to convert a digital signal from the computer into an analog signal that can be transmitted by the telephone system. Demodulate is the opposite of modulate.

nonswitched line

A connection between systems or devices that does not have to be made by dialing. Contrast with switched line.

NRZ

Acronym for “nonreturn to zero.” A method of encoding data in which the signal representing binary digits alternates between positive and negative voltage when there is a change in digits from 1 to 0 or vice versa.

physical unit (PU)

In SNA communications, an independent unit attached to an SDLC line.

protocol

See communications protocol.

QLLC

Acronym for Qualified Logical Link Control. An X.25 protocol that allows you to transfer data link control information between adjoining SNA nodes connected through an X.25 packet-switching data network. The QLLC provides the qualifier Q bit in X.25 data packets to identify packets that carry logical link protocol information.

receive

To obtain data from a communications line.

RS232

Refers to EIA Standard RS232C for connecting data communication equipment to data terminal equipment, including connecting terminals and computers to modems. Many computer peripheral devices also use this interface to connect to computers.

SDLC

Acronym for Synchronous Data Link Control. A low-level communications protocol for synchronous communications. It is defined for both full-duplex and half-duplex operation. SNA uses SDLC as its low-level communications protocol.

SNA

Acronym for Systems Network Architecture. The description of logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of networks.

switched line

A telephone line connected to the switched telephone network where the destination is selected by dialing a multi-digit number. Also called a dial-up line. Contrast with nonswitched line.

synchronous adapter

Communications adapter that allows connections to a synchronous modem.

synchronous communication

Mode of communication in which blocks of characters are sent as a unit without start and stop bits for each character. Unlike asynchronous communication, the timing for data is obtained from the carrier signal and is not a function of the time-from-the-start bit.

trace

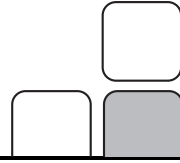
A recording of the frames sent and received on a communication line for diagnosing communications problems.

X.25

An International Telegraph and Telephone Consultative Committee (CCITT) recommendation for a general-purpose interface between data terminal equipment and data circuit-terminating equipment for synchronous operations on a public data network.

Notes:

Index



A

- Adapter
 - install · 4
 - serial number · iii
- Add
 - connection · 13
 - link service · 8

C

- Computer requirements · 2
- Configure
 - connection · 13
 - link service · 8
 - SNA gateway · 7
- Connection · 13

D

- Data rate · 12
- DATMODE · 21
 - full · 21
 - half · 21
- DATMODE=FULL · 1, 11
- Diagnostics · 2, 5, 27

H

- Hardware
 - diagnostics · 5
 - install · 4
 - serial number · iii
- Help · 15
 - Barr Technical Support · iii
 - features · 19

I

- Install
 - hardware · 4

- software · 3
- X.25 link service · 7

L

- Line efficiency · 21
- Line type · 10
- Link service · 8
- Local loop back test · 5

M

- MAXDATA · 21
- MAXOUT · 21

O

- Online Help · 15

P

- Pacing · 21
- PCI · 1

R

- Run diagnostics · 5

S

- SDLC · 1, 3, 7–11, 21, 29
- Search Help · 16
- Self-test · 5
- Serial number · iii
- Signal lead test · 5
- SNA gateway · 7
- Software
 - install · 3
 - version number · iii
- SYNC MAX PCI adapter · 1, 4

T

Technical Support · iii

V

Version number · iii

X

X.25 · 3, 7–11, 29