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The Merged Company of SynOptics and Wellfleet

Customizing APPN Services

Part No. 110062 A

Customizing APPN Services

Router Software Version 8.10
Site Manager Software Version 2.10

Part No. 110062 Rev. A
February 1995

Bay Networks

The Merged Company of SynOptics and Wellfleet

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Contents

Chapter 1
Advanced Peer-to-Peer Networking
Overview

Chapter 2
Enabling APPN Services

Chapter 3
Configuring and Editing APPN Parameters

Index

Figures

Tables

About This Guide

If you are responsible for configuring and managing Wellfleet routers that use Advanced Peer-to-Peer Networking (APPN), you need to read this guide. This guide provides information on how to customize Wellfleet router software for APPN services.

Refer to this guide for

❏ An overview of APPN, as implemented on Wellfleet routers and Site Manager software (see Chapter 1, "APPN Overview")

❏ Instructions on enabling APPN services using Wellfleet Site Manager (see Chapter 2, "Enabling APPN Services")

❏ Instructions on configuring APPN parameters using Wellfleet Configuration Manager software (see Chapter 3, "Configuring and Editing APPN Parameters")

Before You Begin

Before you use this guide, you must complete the following procedures, as described in *Configuring Wellfleet Routers*:

❏ Create and save a configuration file that contains at least one interface for your network.

❏ Open the configuration file in local, remote, or dynamic mode.

How to Get Help

For additional information or advice, contact the Bay Networks Help Desk in your area:

United States	1-800-2LAN-WAN
Valbonne, France	(33) 92-966-968
Sydney, Australia	(61) 2-903-5800
Tokyo, Japan	(81) 3-328-0052

Conventions

angle brackets (< >)	Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. Example: if command syntax is **ping** <*ip_address*>, you enter **ping 192.32.10.12**
arrow character (➜)	Separates menu and option names in instructions. Example: Protocols➜APPN identifies the APPN option in the Protocols menu.
brackets ([ ])	Indicate optional elements. You can choose none, one, or all of the options.
user entry text	Denotes text that you need to enter. Example: Start up the Windows environment by entering the following after the prompt: **win**
command text	Denotes command names in text. Example: Use the **xmodem** command.

italic text	Indicates variable values in command syntax descriptions, new terms, file and directory names, and book titles.
screen text	Indicates data that appears on the screen. Example: Set Trap Monitor Filters
ellipsis points	Horizontal (. . .) and vertical (:) ellipsis points indicate omitted information.
quotation marks (" ")	Indicate the title of a chapter or section within a book.
vertical line (|)	Indicates that you enter only one of the parts of the command. The vertical line separates choices. Do not type the vertical line when entering the command.

Example: If the command syntax is

show at routes \| **nets**, you enter either

show at routes or **show at nets**, but not both.

Acronyms

APPN	Advanced Peer-to-Peer Networking
COS	class of service
CP	control point
DLC	data link control
DLCI	data link connection identifier
DS	directory services
EN	end node
FDDI	Fiber Distributed Data Interface
ISR	intermediate session routing
LAN	local area network
LEN	low-entry networking
LLC	logical link control
LU	logical unit
MAC	media access control
MIB	Management Information Base
NCP	Network Control Program
NN	network node

NNS	network node server
RSCV	route selection control vector
SAP	service access point
SATF	shared access transport facility
SDLC	Synchronous Data Link Control
SNA	Systems Network Architecture
SNMP	Simple Network Management Protocol
SRB	source routing bridge
TG	transmission group
VRN	virtual routing node
XID	exchange identification

Chapter 1
Advanced Peer-to-Peer Networking
Overview

This chapter presents information about the IBM Advanced Peer-to-Peer Networking (APPN) architecture concepts and includes information on the following topics:

❏ APPN networking overview

❏ APPN node types

❏ Control points and logical units

❏ APPN interfaces, ports, and link stations

❏ APPN connection networks

❏ APPN services

You should read this chapter if you are responsible for configuring APPN on one or more Wellfleet router APPN nodes in your network. If you are already familiar with APPN concepts, you can go directly to Chapter 2, "Enabling APPN Services," for information about getting APPN started on Wellfleet routers.

APPN Networking Overview

Advanced Peer-to-Peer Networking (APPN) is an architectural extension to the IBM Systems Network Architecture (SNA). APPN provides a set of distributed network services for nodes participating in an IBM SNA network. APPN nodes use these services to maintain routing, connection, topology, and directory information dynamically, simplifying the task of configuring and maintaining an accurate definition of the network.

Wellfleet routers participate as APPN network nodes (NNs) in IBM SNA network environments (with or without the presence of an IBM mainframe computer) and communicate with adjacent network nodes, end nodes (ENs), and low-entry networking (LEN) nodes. APPN runs on all Wellfleet router platforms using local and wide area network facilities, including

❏ LLC2 media, including Ethernet, Token Ring, and Frame Relay

❏ LLC2 using Source Routing Bridge (SRB) encapsulation formats over Ethernet, FDDI, SMDS, Frame Relay, and Point-to-Point (PPP) protocols

❏ SDLC links in point-to-point and multipoint configurations

Our implementation of APPN adheres to Version 2 of the IBM APPN NN specification with advanced optional APPN function sets.

APPN Node Types

APPN supports the following node types:

❏ Network nodes (routers)

❏ End nodes

❏ Low-entry networking nodes

Network Nodes

Network nodes (NNs) provide routing and networking services to other network nodes and end nodes. These services include location of network resources, route calculation, and session routing. The network node uses configured or dynamic control point-to-control point (CP-CP) sessions with adjacent nodes to manage, communicate, and exchange network topology and resource information. Any adjacent node that does not have control point sessions (such as a low-entry networking node) cannot participate in this exchange and must rely on static definitions. A network node that provides control services to end nodes is called a Network Node Server (NNS).

End Nodes

End nodes (ENs) have control points that allow them to register and share network information (using CP-CP sessions) with the NNS. End nodes provide APPN services to local users and applications and can operate independently in simple network configurations. In most configurations, end nodes are application hosts and workstations that register their resources with their network node server.

Low-Entry Networking Nodes

Low-entry networking (LEN) nodes are the simplest type of node in an APPN network. LEN nodes communicate with each other as adjacent peers only.

LEN nodes do not have control point sessions and cannot exchange resource information with a network node. Therefore, the resource information for LEN nodes is pre-configured and supported at the NN. LEN nodes can include personal computers and workstations.

Figure 1-1 illustrates a simple APPN network with the three APPN node types.
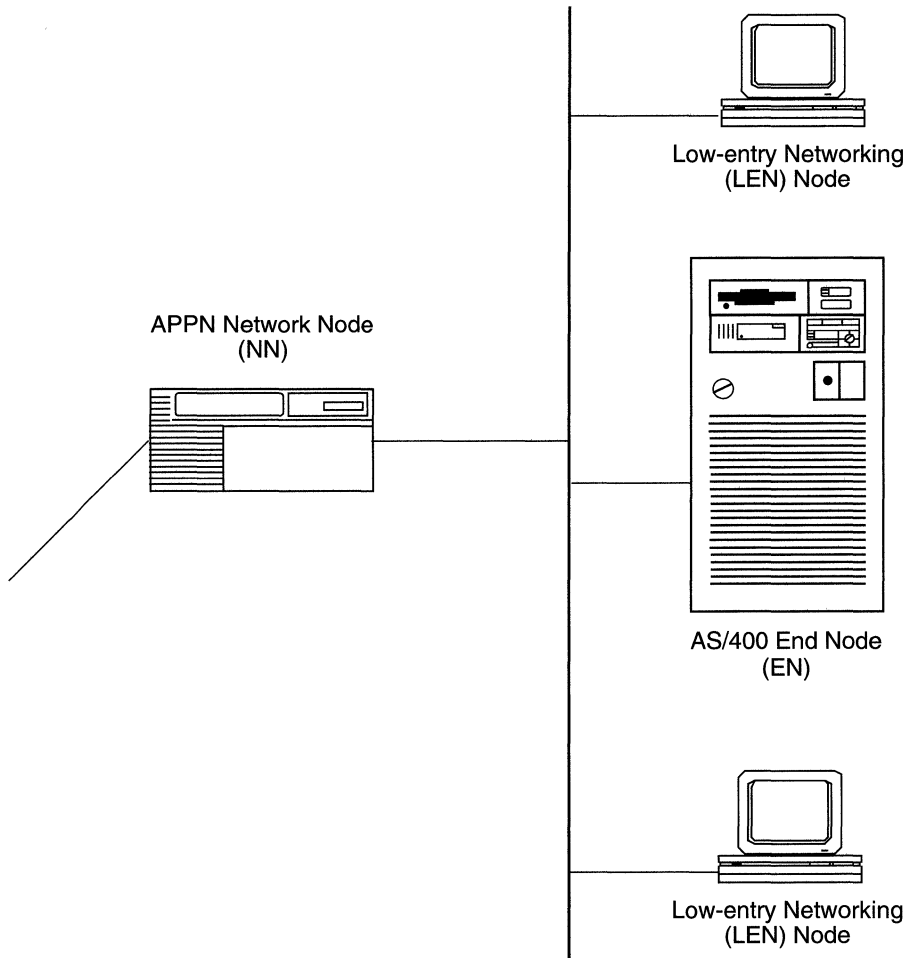
Figure 1-1. APPN Network with Different Node Types

Control Points and Logical Units

APPN uses control points (CPs) to manage nodes and network resources by establishing CP-CP sessions between nodes. All CP-CP sessions use logical unit (LU) 6.2 sessions.

During a CP-CP session (Figure 1-2), adjacent nodes exchange network information. Network nodes use CP-CP sessions to keep track of the network topology and directory information. Adjacent end nodes use CP-CP sessions to register resources and to request directory searches from the NNS.

End Node
APPN.C

Network Node
APPN.A

Network Node
APPN.B

CP-CP, LU-LU
Sessions

CP-CP, LU-LU
Sessions
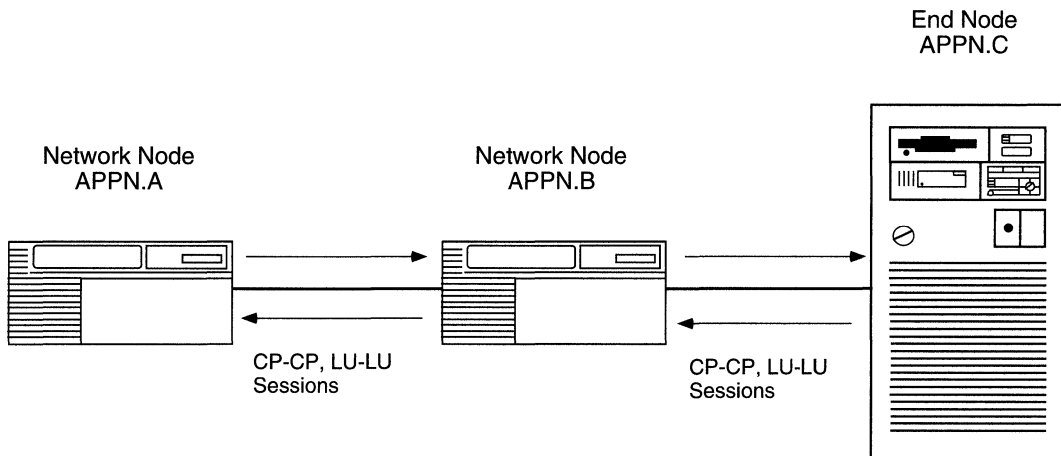
Figure 1-2. CP-CP and LU-LU Sessions

In Figure 1-2, APPN.C registers its local resources with APPB.B, and sends requests to APPN.B for information about the network and its resources. Since APPN end nodes (for example, APPN.C) have limited directory and routing services, APPN.B functions as a network node server (NNS) for APPN.C.

APPN.B has CP-CP sessions with APPN.A and APPN.C. In this example, APPN.A and APPN.B exchange network topology and cooperate in directory searches.

APPN Interfaces, Ports, and Link Stations

APPN configurations comprise interfaces, ports, and link stations. Figure 1-3 illustrates the relationship of interfaces, ports, and link stations in a simple APPN network.

Note: In this manual, the term "interface" assumes the same meaning as data link control (DLC) in IBM-related publications.
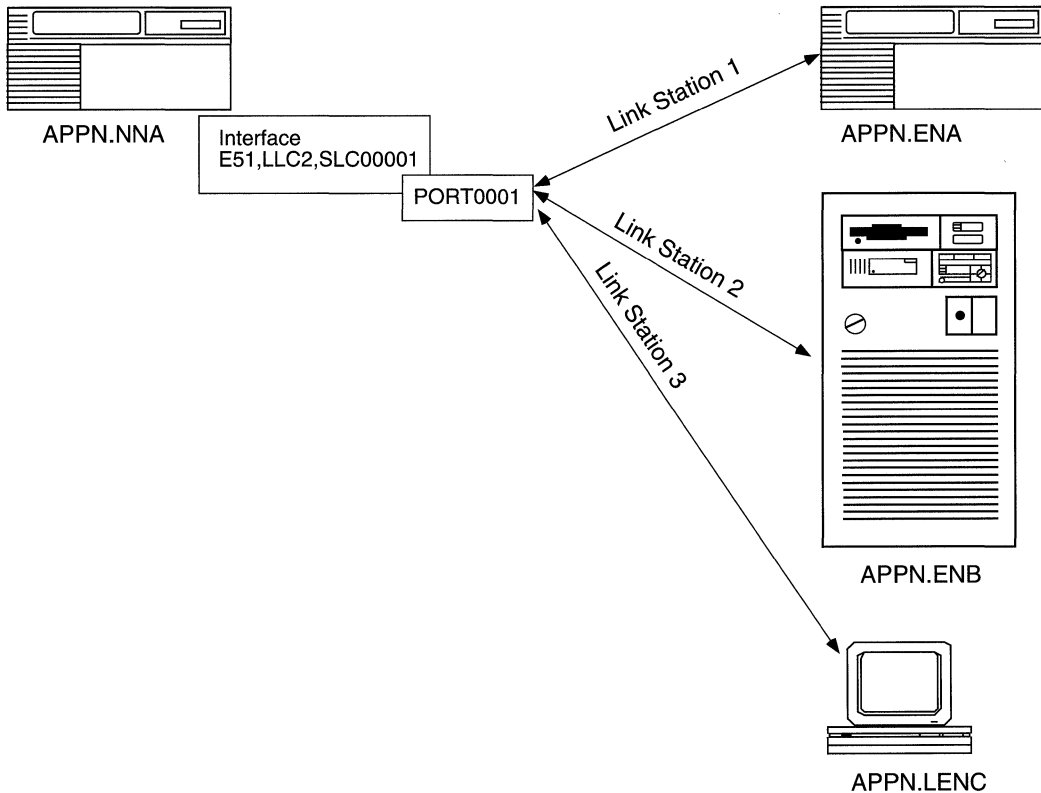
Figure 1-3. Interface, Port, and Link Station Relationship

Interfaces

Interfaces provide data link control (DLC) processes that ensure the reliable delivery of information between adjacent stations using a specific data link protocol such as LLC or SDLC.

Each APPN interface can support one or more ports.

APPN interfaces on Wellfleet network nodes are identified by a system-assigned DLC number (such as DLC00008).

For information on adding and enabling APPN interfaces on Wellfleet network nodes, refer to Chapter 2, "Enabling APPN Services."

Ports

A port represents a unique access point (such as MAC/SAP address pair) used by the local Wellfleet network node. A port is also associated with a DLC process and has a set of configurable parameters in an APPN network.

Link Stations

A link station is associated with a port and represents a connection to an adjacent node. Multiple link stations can exist on a single port, and multiple link stations can exist between the same two nodes. A link station entry can be configured or created dynamically as a result of connection initiated by a remote node.

Note: The term *link* often refers to the physical components that enable two adjacent link stations to communicate. Within APPN, a link is considered a logical connection between two nodes. The term *transmission group* (TG) is also used throughout this manual and assumes the same meaning as *link*.

Link stations have a set of configurable parameters, such as

❏ Link station name and the name of the adjacent node

❏ Adjacent link station role: primary, secondary, or negotiable

❏ Adjacent link station definitions, such as MAC and SAP addresses

Connection Networks

APPN nodes on a *shared access transport facility* (SATF), such as a Token Ring network, have direct connectivity with each other. Nodes with direct connections can communicate with each other without having to route traffic through an intermediate network node. However, these nodes still require definitions to other nodes if communication is to take place. A *connection network* (CN) simplifies APPN configurations by reducing the number of connections that must be configured between nodes on a SATF.

When two nodes on the same SATF are configured on the same connection network, these nodes are unaware that they have a direct connection to each other. The NNS caculates a route between the two nodes so that they can communicate directly. Therefore, connection networks are defined at the NNS without requiring that all data be routed through the NNS. This means that the nodes will establish a connection with each other using a Virtual Routing Node (VRN) to represent attachment to the network.

Figure 1-4 illustrates a sample connection network. Any connection network, such as the connection between EN2 and EN3, may use resources at the network node (NN1) to establish sessions with each other.

EN2   EN3

EN2 ◀───▶ EN3 Traffic

SATF

Virtual Routing
Node

NN1   EN4
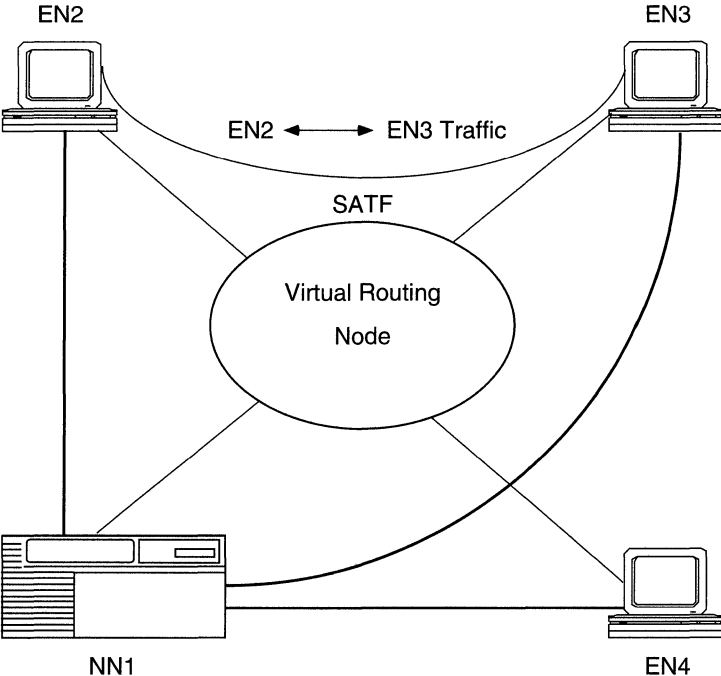
Figure 1-4. Sample APPN Connection Network

APPN Services

The APPN services implemented by the network node include

❏ Session services

❏ Directory services

❏ Topology and route services

❏ Intermediate session routing

❏ Configuration services

❏ Management services

Session Services

Session services (SS) generates unique session identifiers, activates and deactivates CP-CP sessions that the CP components use to exchange network information, and assists LUs in initiating and activating LU-LU sessions. Session services invokes directory services to locate a partner LU, invokes topology and routing services (TRS) to calculate the optimum route between the origin and destination node, and informs management services (MS) about newly activated or deactivated CP-CP sessions.

Directory Services

Directory services (DS) manages the directory database and locates network resources throughout an APPN network. To locate network resources, directory services at each node collects resource information and maintains the information in a *local directory database*. Through a CP-CP session between an APPN network node and an adjacent APPN end node, the APPN network node registers (by end node request) the APPN end node's resources in its local directory database.

An APPN network node maintains database entries for

❏ Local resources (LUs and the CP)

❏ End node resources within the APPN network node's domain

❏ End node or network node resources outside the APPN network node's domain, called cross-domain resources)

An APPN end node or low-entry networking node maintains database entries for

❏ Local resources

❏ Local resources on adjacent nodes that have peer-to-peer communications sessions (without the presence of an APPN network node or control point, in the case of a peer-to-peer end node and low-entry networking node)

Topology and Routing Services

Topology and routing services (TRS) resides in every APPN network node and, in lesser form, in every APPN end node and low-entry networking node. In APPN network nodes, TRS collects and exchanges information on other network nodes and the links between them. For LU-LU sessions, TRS provides the best route between the two LUs. In APPN end nodes and low-entry networking nodes, TRS collects information on links and adjacent nodes.

In APPN network nodes, TRS creates and maintains the class-of-service (COS) database and a copy of the *network topology database*. The network topology database contains information on APPN network node connections to connection networks and other network nodes. (A connection network is a way of defining an APPN node attachment to a shared-access transport facility, reducing intermediate node routing and definition requirements.)

In APPN end nodes, TRS creates and maintains the COS database, and maintains the *local topology database* (also maintained by TRS at the network node). The local topology database contains information on connections involving the local end nodes: end node-to-end node, end node-to-network node, and end node-to-virtual routing node.

For LU-LU sessions, TRS computes the optimal route through an APPN network between the two nodes on which the LUs reside. A route in an APPN network is an ordered sequence of nodes and transmission groups (TGs) that represents a path from an origin to a destination, called a Route Selection Control Vector (RSCV). In APPN end nodes, TRS uses the local database to select possible transmission groups from the end node to an adjacent node. In APPN network nodes, TRS uses the information provided by the two end nodes, together with the information in the network node's COS and topology database, to select a route.

Intermediate Session Routing

Intermediate session routing (ISR) provides a reliable, connection-oriented, LU-LU session path between nonadjacent APPN nodes. ISR uses session connectors (SCs) and a session connection manager (SCM) for sessions passing through the intermediate network node.

At session endpoints, the LU, with control point services, establishes a session with a session partner and routes session data back and forth with the partner LU. When session partners reside on nonadjacent nodes, session data passes through intermediate network nodes (Figure 1-5). Intermediate network nodes do not control the LU endpoints, and LU services cannot be invoked on these nodes. ISR forwards session data to the next node along the session path.
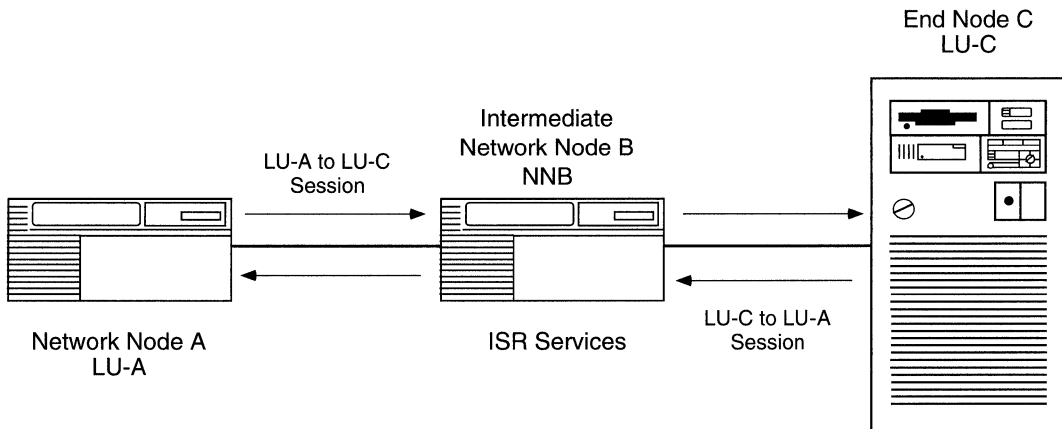
Figure 1-5. Nonadjacent LU-LU Session through an Intermediate Node

In Figure 1-5, LU-A and LU-C are nonadjacent session partners. ISR at NNB forwards session data between the nonadjacent nodes, LU-A and LU-C. NNB creates a session connector (SC) for each session passing through it.

Configuration Services

Configuration services (CS) manages links to adjacent APPN nodes. The APPN node operator facility (NOF) initializes configuration services and is implemented through the Wellfleet Site Manager.

The basic configuration functions are

❏ Node definition

❏ Interfaces

❏ Ports

❏ Adjacent link stations

❏ Connection networks

❏ Directory services

Refer to Chapter 3, "Configuring and Editing APPN Parameters" for detailed information on configuring APPN nodes.

Management Services

Management services (MS) controls and monitors the node's resources. If an error condition occurs, APPN receives or generates event messages about resources and conditions. For information on the APPN event messages, refer to *Event Messages for Wellfleet Routers*.

For More Information about APPN

IBM Publications

For more information about APPN, IBM SNA, and related subjects, refer to the following IBM publications:

❏ *IBM Systems Network Architecture: LU6.2 Reference: Peer Protocols* (SC31-6808)

❏ *IBM Systems Network Architecture: APPN Architecture Reference* (SC30-3422)

❏ *IBM Systems Network Architecture: Management Services* (SC30-3346)

❏ *IBM APPN Architecture and Product Implementation Tutorial* (GG24-3669)

❏ *IBM AS/400 Advanced Peer-to-Peer Networking* (GG24-3287)

❏ *IBM Systems Network Architecture: Technical Overview* (GC30-3073)

❏ *IBM Systems Network Architecture: Concepts and Products* (GC30-3072)

❏ *IBM System Network Architecture: Introduction to Sessions between Logical Units* (GC20-1869)

Bay Networks Publications

For information about Wellfleet products that relate to APPN, refer to the following manuals:

❑ *Customizing Frame Relay Services* (110057, A)

❑ *Customizing LLC Services* (110051, A)

❑ *Customizing SDLC Services* (110055, A)

❑ *Customizing SMDS Services* (110058, A)

❑ *Configuring Wellfleet Routers* (110073, A)

❑ *Event Messages for Wellfleet Routers* (110071, A)

❑ *Release Notes for Wellfleet Router Software Version 8.10* (110041, A)

❑ *Release Notes for Wellfleet Site Manager Software Version 2.10* (110042, A)

❑ *Using Technician Interface Scripts* (110075, A)

Chapter 2
Enabling APPN Services

This chapter shows you how to use Wellfleet Configuration Manager to initially configure APPN on your Wellfleet router. It contains information about

☐ Enabling APPN on Logical Link Control 2 (LLC2) media, including Ethernet, Token Ring, and Frame Relay

☐ Enabling APPN on LLC2 using Source Routing Bridge (SRB) encapsulation formats over Ethernet, FDDI, SMDS, Frame Relay, and Point-to-Point (PPP)

☐ Enabling APPN on Synchronous Data Link Control (SDLC) links in point-to-point and multipoint networks

Enabling APPN over LLC2 Interfaces

When you configure APPN on LLC2 interfaces, such as Ethernet and Token Ring, the Wellfleet Configuration Manager requests media access control (MAC) and service access point (SAP) addresses. On synchronous interfaces where you are configuring APPN over Frame Relay, Configuration Manager requests a data link connection identifier (DLCI) address and a SAP address.

To enable APPN on Ethernet, Token Ring, or Wellfleet synchronous interfaces using Frame Relay, perform the following steps:

1. Start at the Wellfleet Configuration Manager window (Figure 2-1) and select a connection on one of the installed modules. For example, position the screen cursor and click on a connector such as the one labeled XCVR1. The Add Circuit window (Figure 2-2) appears.

◉ Configuration Manager				回
File Options Platform Circuits Protocols Dialup Window				Help

```
Configuration Mode: local
        SNMP Agent: LOCAL FILE
         File Name: /extra/smgr/srb/APPN44
            Model: Backbone Link Node (BLN)
       MIB Version: x8.10
```

Color Key: Used   Unused

Slot	Description		Connectors		
5	5405 Dual Ethernet	XCVR2	NONE	NONE	XCVR1
4	5710 Dual Token Ring (4/16Mb)	NONE	TOKEN2	NONE	TOKEN1
3	5300 Quad Sync	COM1	COM2	COM3	COM4
2	Empty Slot	NONE	NONE	NONE	NONE
1	System Resource Module	CONSOLE			

Figure 2-1. Wellfleet Configuration Manager Window

```
┌──────────────────────────────────────────────────────────────────────┐
│ ● Add Circuit                                                      回 │
│ ┌────────────────────────────────────────────────────────────────────┐
│   Configuration Mode:    local
│           SNMP Agent:    LOCAL FILE
│
│   Circuit Name:   │ E51              │          Color Key:
│                                                 Available
│   Select lines from available connectors:       Selected
│
│   Slot                        Connectors
│     5        □ XCVR2      □ NONE       □ NONE       ■ XCVR1
│     4        □ NONE       □ TOKEN2     □ NONE       □ TOKEN1
│     3        □ COM1       □ COM2       □ COM3       □ COM4
│     2        □ NONE       □ NONE       □ NONE       □ NONE
│     1        □ CONSOLE
│
│    ┌──────┐                                      ┌──────┐
│    │  OK  │                                      │Cancel│
│    └──────┘                                      └──────┘
│ └────────────────────────────────────────────────────────────────────┘
└──────────────────────────────────────────────────────────────────────┘
```

Figure 2-2. Add Circuit Window

2. On the Add Circuit window, click OK to add the default circuit
    name indicated in the Circuit Name box. The Select Protocols
    window may appear (Figure 2-3).

```
┌─────────────────────────────────┐
│ ●  Select  Protocols        回   │
│ ╬══════════════════════════════  │
│   Protocols                      │
│                           ┌─┐    │
│    ☐ AppleTalk            │▲│    │
│                           │█│    │
│    ☐ Source Routing       │█│    │
│    ☐    SR Span Tree      │█│    │
│    ☐    Translate/LB      │█│    │
│    ☐ OSI                  │█│    │
│    ■ LLC2                 │█│    │
│    ☐ DLSw                 │ │    │
│    ■ APPN                 │ │    │
│    ☐ Native Mode LAN      │ │    │
│                           │▼│    │
│                           └─┘    │
│    ┌─────────┐   ┌────────┐     │
│    │   OK    │   │ Cancel │     │
│    └─────────┘   └────────┘     │
└─────────────────────────────────┘
```
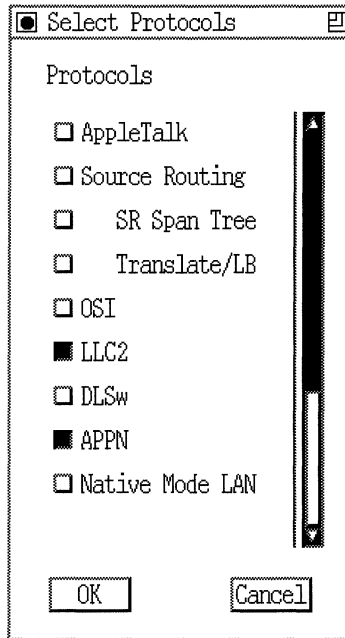
Figure 2-3. Select Protocols Window

3. Scroll down the Select Protocols window and select the APPN option. Configuration Manager automatically selects the LLC2 option. Click OK. For Frame Relay and Ethernet networks, the "Use Source Route Encapsulation?" dialog box appears (Figure 2-4).
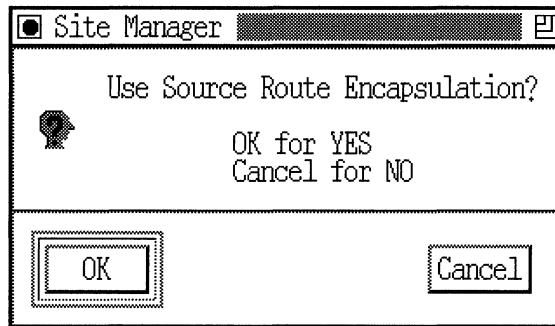
Figure 2-4. Source Route Encapsulation Dialog Box

4. Select Cancel if your are configuring standard LLC over Ethernet, or if you are configuring Frame Relay using the RFC 1490 Routing Standard. If you want to configure Wellfleet proprietary SRB over Ethernet or Frame Relay using the RFC 1490 Bridging Standard, click on OK and refer to the next section, "Enabling APPN over LLC2 Interfaces Using SRB," for information on the additional screens that appear. In this example, click Cancel. The APPN Local Node Name Configuration window appears (Figure 2-5).
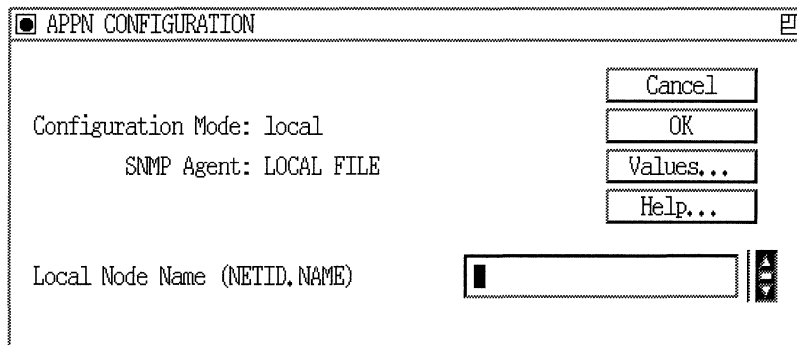
Figure 2-5. APPN Local Node Name Configuration Window

5. At the APPN Configuration window, specify the Local Node Name parameter, as follows:

Parameter: **Local Node Name**

Default: None

Options: Any valid name with up to 17 characters in the format <NETID.CPNAME>, where NETID is the global network name with up to 8 characters followed by a period, and CPNAME is the control point name with up to 8 characters

Function: The Local Node Name parameter identifies the unique name of the network and the Wellfleet router node name.

Instructions: Enter the node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only and must start with a non-numeric character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, NETWORKA.SYSTEMA is a valid entry for the Local Node Name parameter.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.1.4

6. Click OK to add the Local Node Name. The APPN Configuration window appears (Figure 2-6).

```
┌─────────────────────────────────────────────────────────────────────┐
│ ● APPN CONFIGURATION                                              [⊡] │
│ ┌─────────────────────────────────────────────────────────────────┐ │
│ │                                            ┌──────────────┐      │ │
│ │                                            │    Cancel    │      │ │
│ │   Configuration Mode: local                ├──────────────┤      │ │
│ │                                            │      OK      │      │ │
│ │          SNMP Agent: LOCAL FILE            ├──────────────┤      │ │
│ │                                            │   Values...  │      │ │
│ │                                            ├──────────────┤      │ │
│ │                                            │    Help...   │      │ │
│ │                                            └──────────────┘      │ │
│ │                                                                  │ │
│ │   MAC Address (hex, msb)          ┌────────────────────┐ ┌─┐    │ │
│ │                                   │ ▮                  │ │▲│    │ │
│ │   SAP (hex)                       └────────────────────┘ │ │    │ │
│ │                                   ┌────────────────────┐ │ │    │ │
│ │                                   │                    │ │▼│    │ │
│ │                                   └────────────────────┘ └─┘    │ │
│ └─────────────────────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────────────────┘
```
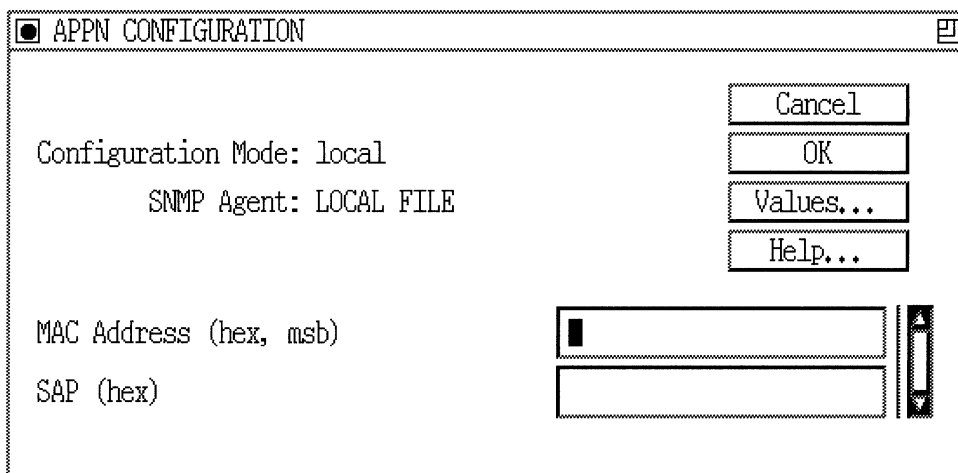
Figure 2-6. APPN Configuration Window

7. Specify the MAC Address and SAP parameters, as follows:

Parameter:	**MAC Address**
Default:	None
Options:	Any unique 48-bit 12-digit hexadecimal MAC-level address
Function:	Specifies a unique MAC-level address for this port connecting the adjacent link station.
Instructions:	Enter a 12-digit hexadecimal MAC-level address in most significant bit (MSB) non-canonical format, regardless of the media.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.38

Parameter:	**SAP (hex)**
Default:	None
Options:	Any unique service access point (SAP) 2-digit hexadecimal value, typically 04.
Function:	Specifies a service access point (SAP) address that lets multiple applications and protocol entities in a single computer share a MAC address.
Instructions:	Enter a 2-digit hexadecimal value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.38

If you are configuring a Wellfleet synchronous interface (a connector labeled COM# on the Wellfleet Configuration Manager window in Figure 2-1) with the Frame Relay protocol, the APPN Configuration Window displays the Data Link Connection Identifier (DLCI) parameter instead of the MAC Address parameter. The DLCI is the Frame Relay permanent virtual circuit (PVC) identification number. The Frame Relay network uses the DLCI to direct basic data flow. Specify the DLCI parameter as follows:

Parameter:	**DLCI**
Default:	None
Options:	Valid range changes based on the Frame relay address length as follows:

Address Length	Range
2 Byte	16-1007
3 Byte	1024-64511
4 Byte	131072-8257535

Function:	This number is the PVC identification number that the Frame Relay network uses to direct data.
Instructions:	Enter a decimal number within the valid range.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.38

8. Click the OK button on the APPN Configuration Manager window. The Adjacent Link Station dialog box appears (Figure 2-7).

```
┌──────────────────────────────────────────────────────────────────────┐
│ ▣ Site Manager                                                    回│
│ ┌──────────────────────────────────────────────────────────────────┐ │
│ │    Would you like to configure Adjacent Link Stations on this port? │ │
│ │  ◉                 OK for YES                                       │ │
│ │                    Cancel for NO                                   │ │
│ └──────────────────────────────────────────────────────────────────┘ │
│  ┌─────────┐                                        ┌─────────┐       │
│  │   OK    │                                        │ Cancel  │       │
│  └─────────┘                                        └─────────┘       │
└──────────────────────────────────────────────────────────────────────┘
```
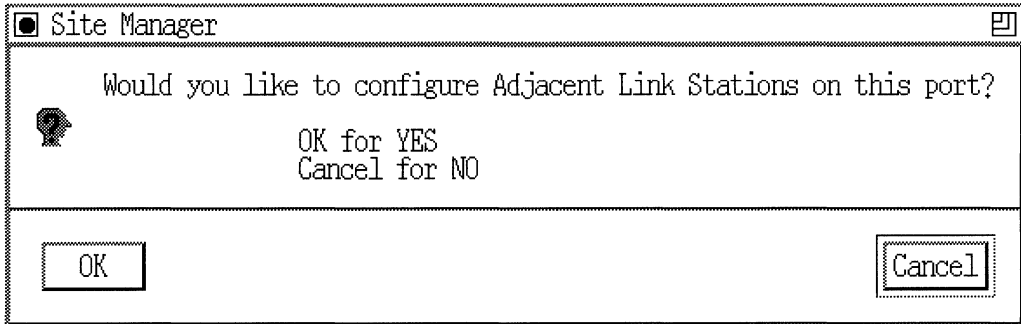
Figure 2-7. Adjacent Link Station Dialog Box

9. If you wish to configure APPN adjacent link station parameters at this time, go the section in Chapter 3 entitled "Editing APPN Adjacent Link Stations." Otherwise, click the Cancel button and proceed to Chapter 3 for information on configuring APPN.

Enabling APPN over LL2 Interfaces Using SRB

If you are configuring LLC2 interfaces such as Ethernet, FDDI, SMDS, Frame Relay, and Point-to-Point (PPP) and you want to use source routing bridge (SRB) encapsulation formats, select the appropriate connector and protocols, as described in the previous section. For Ethernet (Wellfleet proprietary SRB over Ethernet) and Frame Relay (RFC1490 Bridging Standard), start at the Source Route Encapsulation Dialog Box (Figure 2-8) and proceed as follows:

```
┌─────────────────────────────────────────┐
│ ● Site Manager ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓     ▣  │
│ ┌───────────────────────────────────────┐│
│ │      Use Source Route Encapsulation?  ││
│ │  �                                    ││
│ │            OK for YES                  ││
│ │            Cancel for NO               ││
│ └───────────────────────────────────────┘│
│ ┌────────────────┐      ┌────────┐       │
│ │      OK        │      │ Cancel │       │
│ └────────────────┘      └────────┘       │
└─────────────────────────────────────────┘
```
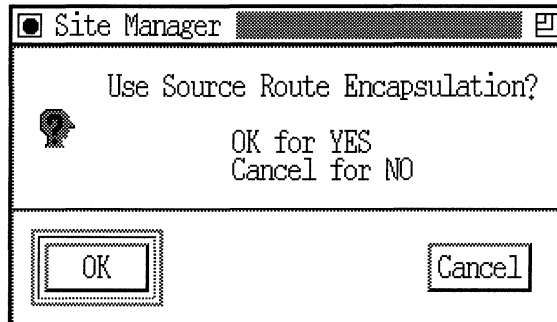
Figure 2-8. Source Route Encapsulation Dialog Box

1. Click the OK button. The Source Routing Global Parameters
    window appears (Figure 2-9).

```
┌─────────────────────────────────────────────────────────────────┐
│ ⬤ Source Routing Global Parameters                          回 │
├─────────────────────────────────────────────────────────────────┤
│                                        ┌────────────┐             │
│                                        │   Cancel   │             │
│      Configuration Mode: local         ├────────────┤             │
│                                        │     OK     │             │
│            SNMP Agent: LOCAL FILE      ├────────────┤             │
│                                        │  Values... │             │
│                                        ├────────────┤             │
│                                        │   Help...  │             │
│                                        └────────────┘             │
│                                                                   │
│      Enable                         ┌──────────────────┐ ▲       │
│                                     │ ⬛NABLE           │ █       │
│      SR Bridge Internal LAN ID      ┌──────────────────┐ █       │
│                                     │ 0x0              │ █       │
│      SR Bridge ID                   ┌──────────────────┐ █       │
│                                     │ 0x0              │ █       │
│      SR Bridge Group LAN ID         ┌──────────────────┐ █       │
│                                     │ 0xfff            │ █       │
│      IP Encapsulation               ┌──────────────────┐ █       │
│                                     │ DISABLE          │ █       │
│      Conn. IP NTWK Ring number      ┌──────────────────┐ █       │
│                                     │                  │ █       │
│      IP MTU Size (bytes)            ┌──────────────────┐ █       │
│                                     │ 4562             │ █       │
│      NetBIOS Server Name Cache      ┌──────────────────┐ █       │
│                                     │ DISABLE          │ █       │
│      NetBIOS Client Name Cache      ┌──────────────────┐ █       │
│                                     │ DISABLE          │ ▼       │
│      NetBIOS Datagram RIF Cache     ┌──────────────────┐         │
│                                     │ DISABLE          │         │
│                                     └──────────────────┘         │
└─────────────────────────────────────────────────────────────────┘
```
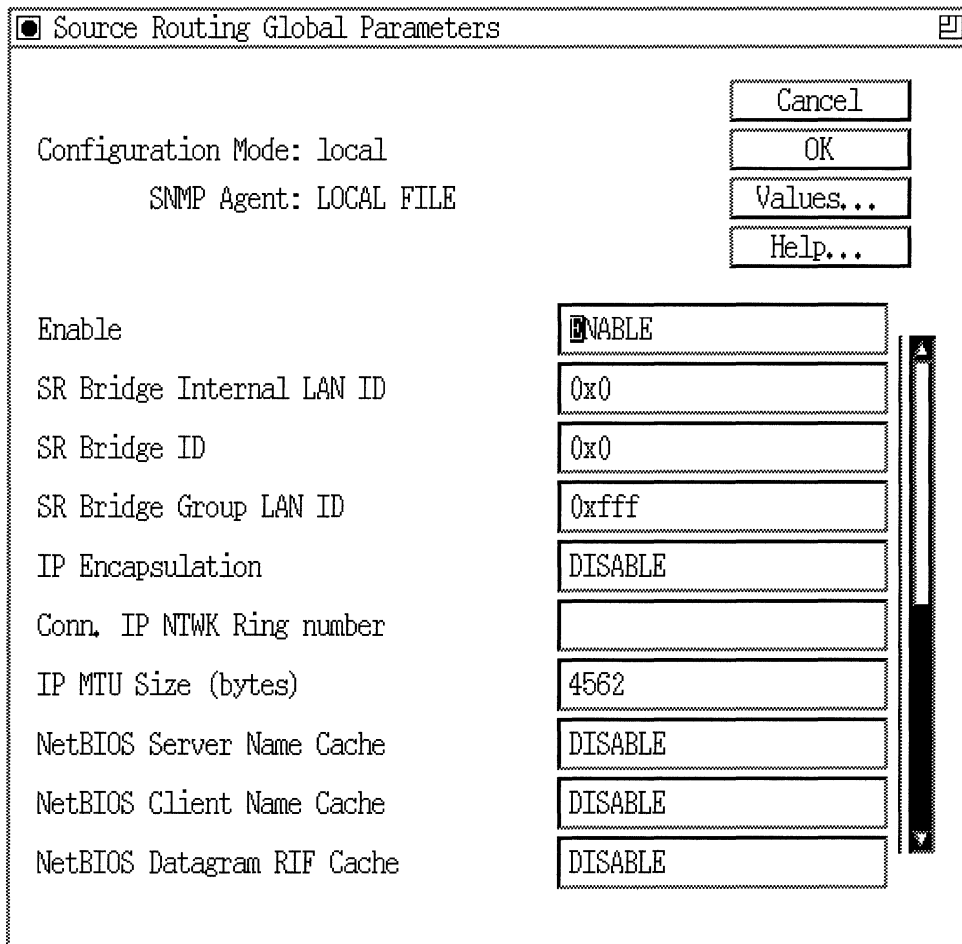
Figure 2-9. Source Routing Global Parameters Window

2. Edit the parameters in the Source Routing Global Parameters
    window. The SR Bridge Internal LAN ID and the SR Bridge ID are
    mandatory parameters that you must specify before you can
    proceed.

Parameter:	**SR Bridge Internal LAN ID**
Default:	0x1
Range:	0x1 to 0x0fff
Function:	Specifies this bridge's internal LAN ID.
Instructions:	Assign an internal LAN ID that is unique among all other internal LAN IDs and ring IDs in the network.
MIB Object ID:	1.3.6.1.4.1.18.3.5.1.1.2.1.4

Parameter:	**SR Bridge ID**
Default:	0x1
Range:	0x1 to 0x0f
Function:	Specifies this bridge's bridge ID and identifies the Wellfleet source routing bridges in the network.
Instructions:	Assign the same value to all Wellfleet source routing bridges in the network (unless two bridges operate in parallel; see the following note). The SR bridge ID must be unique among any other third-party bridge IDs in the network.
MIB Object ID:	1.3.6.1.4.1.18.3.5.1.1.2.1.5

For details on how to configure the source routing parameters on this window, refer to *Customizing Bridging Services.*

3. When you have specified the parameters on the Source Routing Global Parameters window, click the OK button. The Edit SR Interface window appears (Figure 2-10).

```
┌─────────────────────────────────────────────────────────────────────────┐
│ ● Edit SR Interface: E52                                              凹  │
├───────────────────────────────────────────────────────────────────────────│
│                                              ┌──────────────────┐         │
│                                              │      Cancel       │         │
│   Configuration Mode: local                  ├──────────────────┤         │
│                                              │        OK         │         │
│         SNMP Agent: LOCAL FILE               ├──────────────────┤         │
│                                              │     Values...     │         │
│                                              ├──────────────────┤         │
│                                              │      Help...      │         │
│                                              └──────────────────┘         │
│                                                                           │
│   Enable                              ┌─────────────────────────┐  ┌──┐   │
│                                       │ ENABLE                  │  │▲ │   │
│   Max number of RDs                   ├─────────────────────────┤  ├──┤   │
│                                       │ 7                       │  │  │   │
│   Source Routing Ring Number          ├─────────────────────────┤  │  │   │
│                                       │ 0x0                     │  │  │   │
│   Outbound STEs                       ├─────────────────────────┤  │  │   │
│                                       │ ACCEPT                  │  │  │   │
│   Inbound STEs                        ├─────────────────────────┤  │  │   │
│                                       │ ACCEPT                  │  │  │   │
│   Frames With IP Ring                 ├─────────────────────────┤  │  │   │
│                                       │ ACCEPT                  │  │  │   │
│   IP Address                          ├─────────────────────────┤  │  │   │
│                                       │ 0.0.0.0                 │  │  │   │
│   NetBIOS Server Name Cache           ├─────────────────────────┤  │  │   │
│                                       │ ENABLE                  │  │  │   │
│   NetBIOS Client Name Cache           ├─────────────────────────┤  │  │   │
│                                       │ ENABLE                  │  │  │   │
│   NetBIOS Datagram Cache              ├─────────────────────────┤  ├──┤   │
│                                       │ ENABLE                  │  │▼ │   │
│                                       └─────────────────────────┘  └──┘   │
└───────────────────────────────────────────────────────────────────────────┘
```
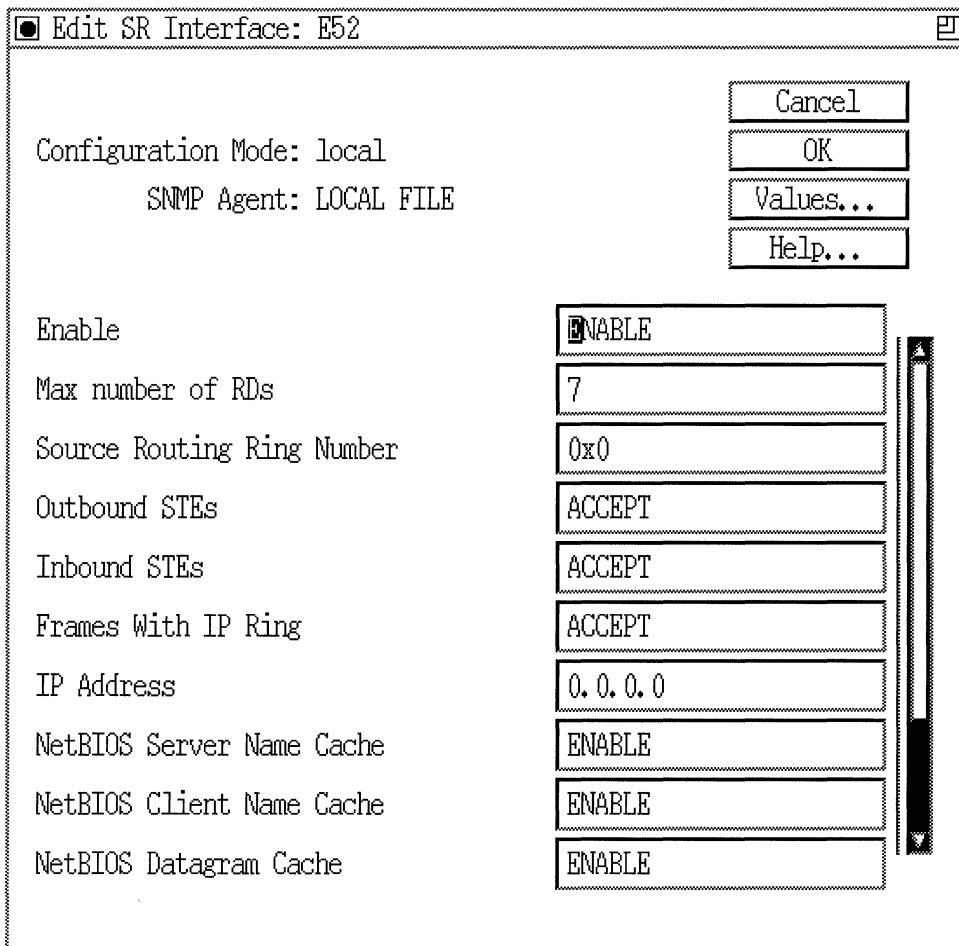
Figure 2-10. Edit SR Interface Window

4. Edit the parameters in the Edit SR Interface window. The Source
    Routing Ring Number is the only parameter that you must specify
    before you can proceed. This is the unique ring number on the
    interface you are configuring.

Parameter:	**Source Routing Ring Number**
Default:	0x0
Range:	0x0 to 0x0fff
Function:	Identifies the ring number (ring ID) of this source routing circuit.
Instructions:	Assign a ring number (ring ID) to this source routing circuit that is unique among any other ring IDs, group LAN IDs, or internal LAN IDs in the network.
MIB Object ID:	1.3.6.1.4.1.18.3.5.1.1.2.2.1.6

For details on how to configure the source routing parameters on this window, refer to *Customizing Bridging Services*.

5. When you have specified the parameters on the Edit SR Interface window, click the OK button. The APPN Virtual Ring Number window appears (Figure 2-11).
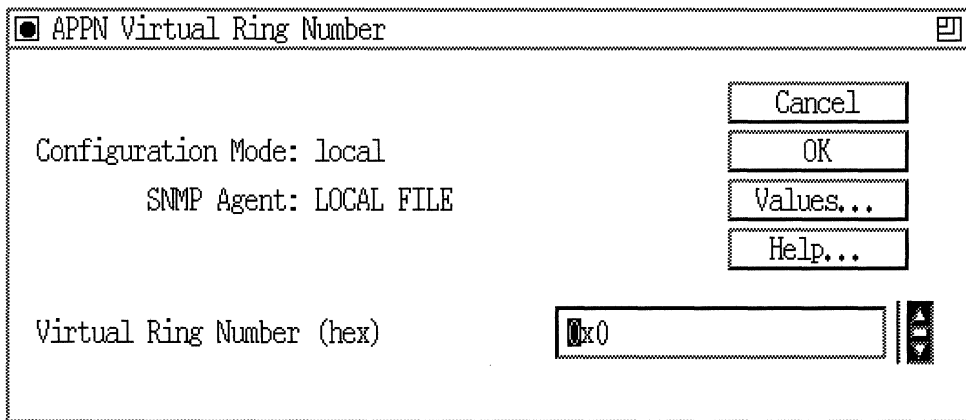
Figure 2-11. APPN Virtual Ring Number Window

6. Edit the Virtual Ring Number parameter, as follows:

Parameter:	Virtual Ring Number (hex)
Default:	None
Range:	1 to 4095
Function:	Specifies the unique SRB ring number to be used by APPN if the encapsulation technique is SRB. It must be unique in the SRB network. This means that Virtual Ring Number must be different from the ring IDs specified in the SRB configuration, as well as different from other Wellfleet routers running APPN on LLC2/SRB media.
Instructions:	Specify the unique LLC ring number in the range 1 to 4095.
MIB Object ID:	1.3.6.1.4.1.18.3.5.1.6.2.25

7. Click the OK button. If this is the first interface for which you are configuring APPN, the APPN Local Node Name Configuration window appears (Figure 2-5). If this is not the first interface for which you are configuring APPN, the Adjacent Link Station dialog box appears (Figure 2-7). Refer to these figures for information on completing the remaining APPN configuration steps.

Enabling APPN Interfaces over SDLC

If you are configuring APPN on synchronous interfaces (COM1, COM2, etc.) using the SDLC protocol, the Configuration Manager displays the SDLC Line Parameters window (Figure 2-12).

```
┌────────────────────────────────────────────────────────────────────┐
│ ◉ SDLC Line Parameters                                          囗  │
│ ┌──────────────────────────────────────────────────────────────────┐│
│ │                                          ┌──────────────┐         ││
│ │                                          │   Cancel     │         ││
│ │   Configuration Mode: local             ├──────────────┤         ││
│ │          SNMP Agent: LOCAL FILE          │     OK       │         ││
│ │                                          ├──────────────┤         ││
│ │                                          │  Values...   │         ││
│ │                                          ├──────────────┤         ││
│ │                                          │  Help...     │         ││
│ │                                          └──────────────┘         ││
│ │                                                                   ││
│ │   Clock Source              ┌─────────────────────────┐  ▲        ││
│ │                             │ INTERNAL                │           ││
│ │   Internal Clock Speed      │ 19200                   │           ││
│ │                             │                         │           ││
│ │   Sync Line Coding          │ NRZ                     │           ││
│ │                             │                         │           ││
│ │   Cable Type                │ RS232                   │  ▼        ││
│ │                             └─────────────────────────┘           ││
│ └──────────────────────────────────────────────────────────────────┘│
└────────────────────────────────────────────────────────────────────┘
```
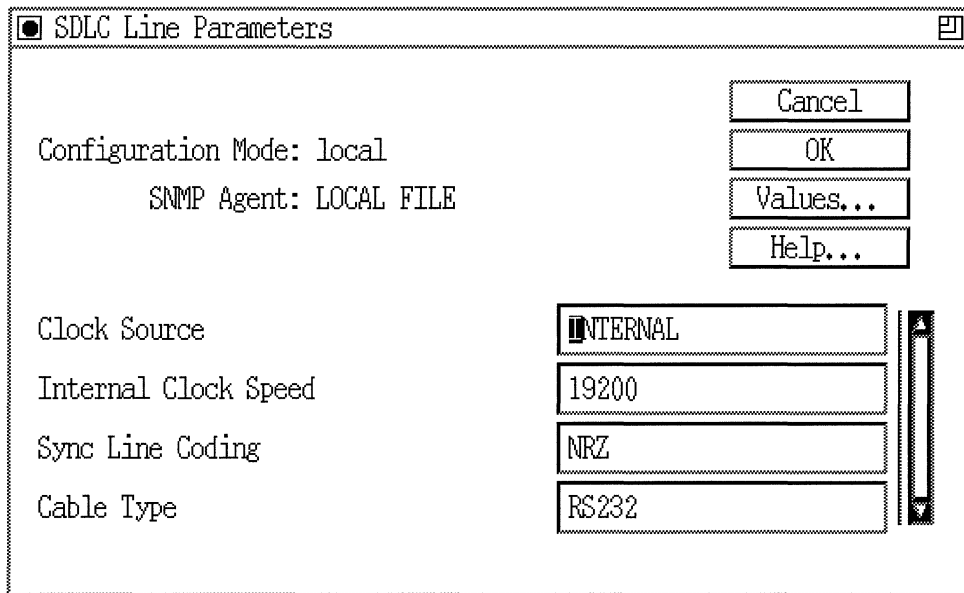
Figure 2-12. SDLC Line Parameters Window

1. Edit the Clock Source, Internal Clock Speed, Sync Line Coding, and
    Cable Type parameters, as follows:

Parameter:	**Clock Source**
Default:	External
Options:	External | Internal
Function:	Specifies the origin of the synchronous timing signals. If you set this parameter to Internal, this router supplies the required timing signals. If you set this parameter to External, an external network device supplies the required timing signals. In most cases, this parameter should be set to External.
Instructions:	Set this parameter to either Internal or External, as appropriate for your network.
MIB Object ID:	1.3.6.1.4.1.18.3.4.5.1.13

Parameter:	**Internal Clock Speed**
Default:	64 KB
Options:	1200 B | 2400 B | 4800 B | 7200 B | 9600 B | 19200 B | 32000 B | 38400 B | 56 KB | 64 KB | 125 KB | 230 KB | 420 KB | 625 KB | 833 KB | 1.25 MB | 2.5 MB | 5 MB
Function:	Sets the clock speed of an internally supplied clock when the Clock Source parameter is set to Internal.
Instructions:	Click on Values and set the clock speed for the internal clock to the desired data transmission rate across the synchronous line. The Internal Clock Speed parameter is unavailable when the Clock Source parameter is set to External.
MIB Object ID:	1.3.6.1.4.1.18.3.4.5.1.14

Parameter:	**Sync Line Coding**
Default:	NRZ
Options:	NRZ | NRZI | NRZI Mark
Function:	This parameter specifies the line coding of the physical synchronous line. You can change the value of this parameter to match the line coding of a device at the other end of the line.
	This parameter is relevant only for the AN and the ASN. Other Wellfleet router platforms use NRZ encoding.
	NRZ Indicates Non-Return to Zero coding
	NRZI Indicates Non-Return to Zero Inverted coding
	NRZI Mark Indicates Non-Return to Zero Inverted Mark coding.
Instructions:	Select the appropriate value for synchronous line coding.
MIB Object ID:	1.3.6.1.4.1.18.3.4.5.1.88

Parameter:	**Cable Type**
Default:	Null
Options:	Null | RS232 | RS422 | V35 | X21
Function:	Specifies the cable interface type of the device.
Instructions:	Set to reflect the cable interface type being used to connect the dial unit if you are using one.
MIB Object ID:	1.3.6.1.4.1.18.3.4.5.1.83

2. Click the OK button to display the Select Protocols window (Figure 2-13).

```
┌─────────────────────────────────┐
│ ▣ Select Protocols       ▣      │
│ ┌─────────────────────────────┐ │
│   Protocols                     │
│                            ┌─┐  │
│     ☐ DLSw                 │▲│  │
│                            │ │  │
│     ▣ APPN                 │ │  │
│                            │▼│  │
│                            └─┘  │
│    ┌──────────┐  ┌──────────┐   │
│    │    OK    │  │ Cancel   │   │
│    └──────────┘  └──────────┘   │
└─────────────────────────────────┘
```
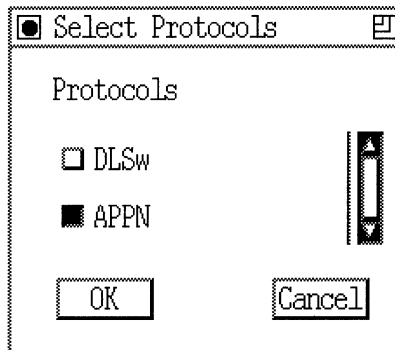
Figure 2-13. Select Protocols Window

3. Select APPN and click OK. If this is the first interface for which you are configuring APPN, the APPN Local Node Name Configuration window appears (Figure 2-14). Otherwise, the APPN Configuration window appears (Figure 2-15).

```
┌──────────────────────────────────────────────────────────────────┐
│ ▣ APPN CONFIGURATION                                       ▣      │
│                                                                    │
│                                          ┌──────────────┐          │
│                                          │    Cancel    │          │
│   Configuration Mode: local              ├──────────────┤          │
│                                          │     OK       │          │
│          SNMP Agent: LOCAL FILE          ├──────────────┤          │
│                                          │   Values...  │          │
│                                          ├──────────────┤          │
│                                          │   Help...    │          │
│                                          └──────────────┘          │
│                                                                    │
│                                    ┌────────────────────┐ ┌─┐      │
│   Local Node Name (NETID.NAME)     │ █                  │ │▲│      │
│                                    └────────────────────┘ │▼│      │
│                                                           └─┘      │
└──────────────────────────────────────────────────────────────────┘
```
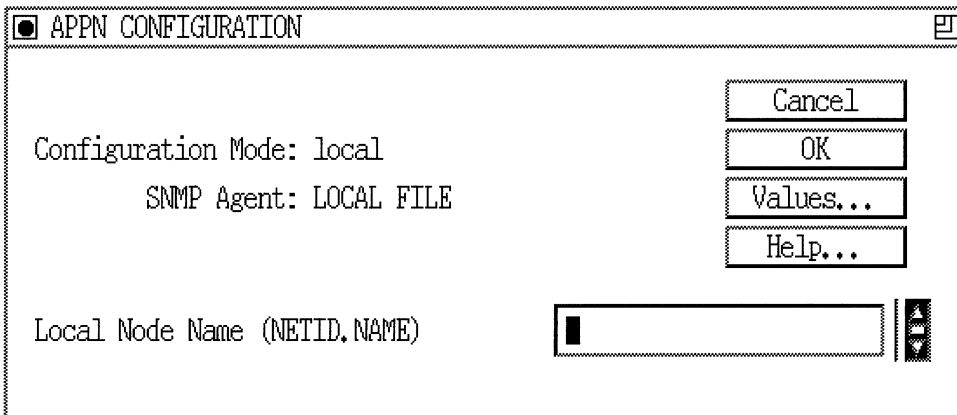
Figure 2-14. APPN Local Node Name Configuration Window

4. At the APPN Local Node Name Configuration window, specify the Local Node Name parameter, as follows:

Parameter:	**Local Node Name**
Default:	None
Options:	Any valid name with up to 17 characters in the format <NETID.CPNAME>, where NETID is the global network name with up to 8 characters followed by a period, and CPNAME is the control point name with up to 8 characters
Function:	The Local Node Name parameter identifies the unique name of the network and the Wellfleet router node name.
Instructions:	Enter the node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only and must start with a non-numeric character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, NETWORKA.SYSTEMA is a valid entry for the Local Node Name parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4

5. Click OK to add the Local Node Name. The APPN Configuration window appears (Figure 2-15).

```
┌─────────────────────────────────────────────────────────────────┐
│ ◉ APPN CONFIGURATION                                          ﹝﹞ │
│ ┌───────────────────────────────────────────────────────────────┐
│                                          ┌─────────────┐         │
│                                          │   Cancel    │         │
│ Configuration Mode: local                ├─────────────┤         │
│                                          │     OK      │         │
│        SNMP Agent: LOCAL FILE            ├─────────────┤         │
│                                          │  Values...  │         │
│                                          ├─────────────┤         │
│                                          │   Help...   │         │
│                                          └─────────────┘         │
│                                      ┌────────────────────┐  ┌─┐ │
│ SDLC Address (hex)                   │ █                  │  │▲│ │
│                                      └────────────────────┘  │▼│ │
│                                                              └─┘ │
└─────────────────────────────────────────────────────────────────┘
```
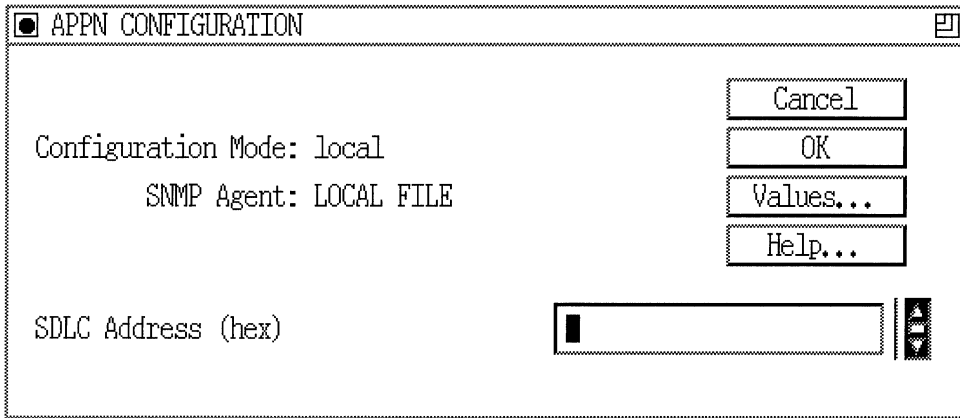
Figure 2-15. APPN Configuration Window

6. Specify the SDLC address for the interface, as follows:

Parameter:	**SDLC Address (hex)**
Default:	None
Options:	Any unique 2-digit hexadecimal SDLC-level address
Function:	Specifies a unique SDLC address for this circuit.
Instructions:	Enter a 2-digit hexadecimal address.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.38

7. Click the OK button on the APPN Configuration Manager window. The Adjacent Link Station dialog box appears (Figure 2-16).

```
┌─────────────────────────────────────────────────────────────────────┐
│ ▣ Site Manager                                                    ㅁ │
├─────────────────────────────────────────────────────────────────────┤
│                                                                       │
│      Would you like to configure Adjacent Link Stations on this port? │
│  🖐                                                                    │
│                       OK for YES                                       │
│                       Cancel for NO                                   │
│                                                                       │
├─────────────────────────────────────────────────────────────────────┤
│  ┌────────┐                                              ┌────────┐   │
│  │   OK   │                                              │ Cancel │   │
│  └────────┘                                              └────────┘   │
└─────────────────────────────────────────────────────────────────────┘
```
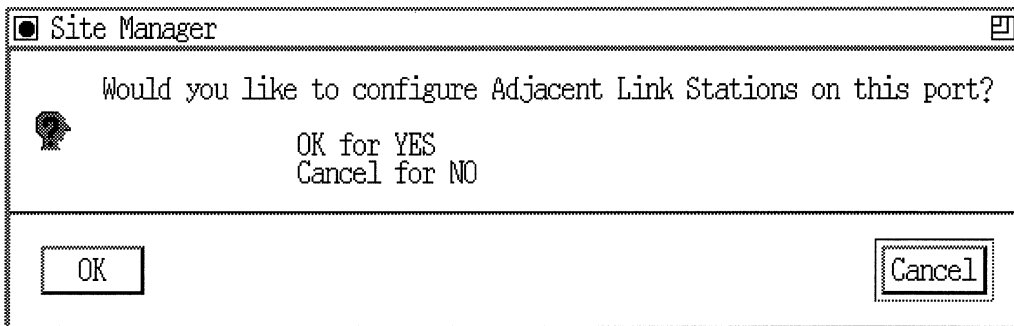
Figure 2-16. Adjacent Link Station Dialog Box

8. If you wish to configure APPN adjacent link station parameters at this time, go the section in Chapter 3 entitled "Editing APPN Adjacent Link Stations." Otherwise, click the Cancel button and proceed to Chapter 3 for information on configuring APPN.

Chapter 3
Configuring and Editing APPN Parameters

This chapter provides information on how to use the Wellfleet router Configuration Manager to access, configure, and edit

❑ APPN global and advanced parameters

❑ APPN interface and port parameters

❑ APPN adjacent link station parameters

❑ APPN connection networks parameters

❑ APPN static directory services entries

Once you successfully enable an APPN interface on the router, you can use Configuration Manager to edit APPN parameters and customize APPN services, as presented in this chapter.

This section assumes that you have already added one or more interfaces to a router configuration file that you now want to edit for APPN. (Refer to Chapter 2, "Enabling APPN Services," or refer to *Configuring Wellfleet Routers* if you need to add interfaces to the configuration file.)

Accessing APPN Parameters

You can access all APPN operational parameters from the Wellfleet
Configuration Manager window (Figure 3-1). (Refer to *Configuring
Wellfleet Routers* if you need instructions on how to access this
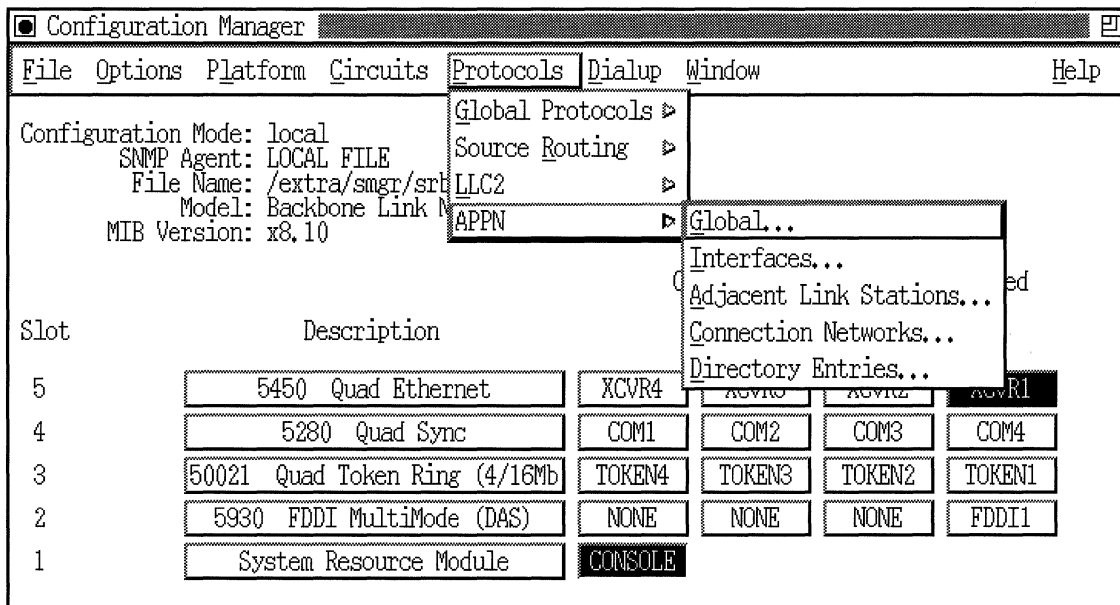window.)

```
┌─────────────────────────────────────────────────────────────────────────┐
│ ● Configuration Manager                                                 囵│
├─────────────────────────────────────────────────────────────────────────┤
│ File  Options  Platform  Circuits │Protocols│ Dialup  Window          Help│
│                                   ┌─────────────────────┐                 │
│                                   │Global Protocols ▷   │                 │
│ Configuration Mode: local         │Source Routing   ▷   │                 │
│         SNMP Agent: LOCAL FILE     │LLC2             ▷   │                 │
│           File Name: /extra/smgr/srl APPN           ▷┌─────────────────────┐
│              Model: Backbone Link N└─────────────────│Global...            │
│         MIB Version: x8.10                           │Interfaces...        │
│                                                      │Adjacent Link Stations...│ed
│                                                      │Connection Networks...│
│ Slot                  Description                    │Directory Entries... │
│                                                      └─────────────────────┘
│   5         ┌────────────────────────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐│
│             │   5450   Quad Ethernet  │ │XCVR4 │ │      │ │      │ │  R1  ││
│   4         │   5280   Quad Sync      │ │COM1  │ │COM2  │ │COM3  │ │COM4  ││
│   3         │50021  Quad Token Ring (4/16Mb)│TOKEN4│TOKEN3│TOKEN2│TOKEN1  ││
│   2         │ 5930  FDDI MultiMode (DAS)│ │NONE  │ │NONE  │ │NONE  │ │FDDI1 ││
│   1         │  System Resource Module │ │CONSOLE│                         ││
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 3-1. Wellfleet Configuration Manager Window

This chapter presents information on each APPN parameter, provides
the default setting, all valid setting options, the parameter function,
and instructions for setting the parameter.

Editing APPN Global Parameters

To edit APPN Global parameters, begin at the Wellfleet Configuration Manager window (Figure 3-1) and proceed as follows:

1. Select the Protocols➔APPN➔ Global option.

   The Edit APPN Global Parameters window appears (Figure 3-2).

2. Edit the parameters you want to change.

3. Click on the OK button to save your changes and exit the window, or select Advanced to edit additional APPN global parameters.
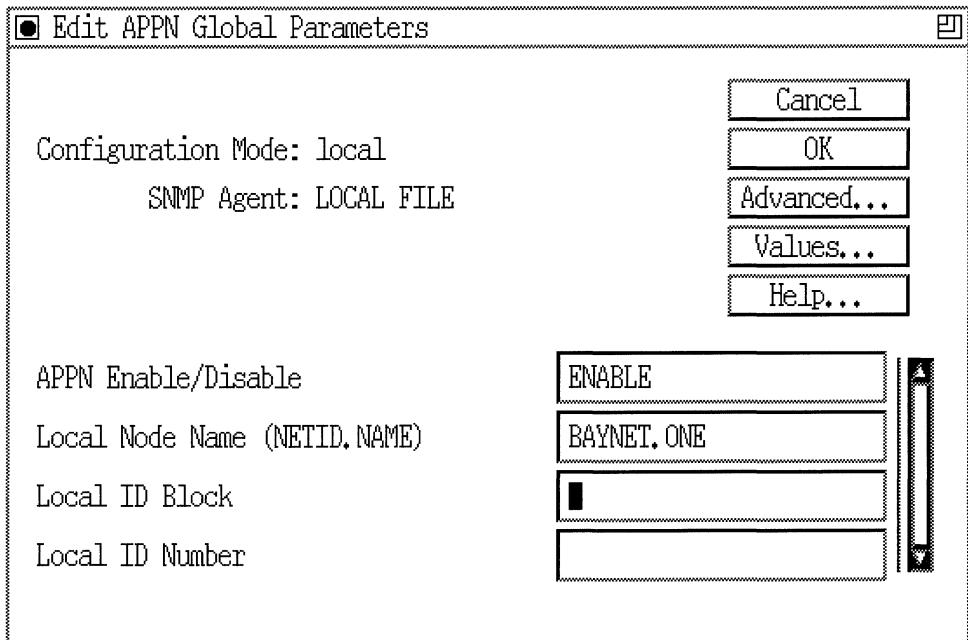
```
● Edit APPN Global Parameters                                        ⌐

                                                    ┌─────────────┐
                                                    │   Cancel    │
          Configuration Mode: local                 ├─────────────┤
                  SNMP Agent: LOCAL FILE            │     OK      │
                                                    ├─────────────┤
                                                    │  Advanced...│
                                                    ├─────────────┤
                                                    │  Values...  │
                                                    ├─────────────┤
                                                    │   Help...   │
                                                    └─────────────┘

          APPN Enable/Disable              ┌────────────────────┐  ▲
                                           │ ENABLE             │  ║
          Local Node Name (NETID.NAME)     ├────────────────────┤
                                           │ BAYNET.ONE         │
          Local ID Block                   ├────────────────────┤
                                           │ █                  │
          Local ID Number                  ├────────────────────┤
                                           │                    │  ▼
                                           └────────────────────┘
```

Figure 3-2. Edit APPN Global Parameters Window

A description of the parameters on the Edit APPN Global Parameters window (Figure 3-2) follows.

Parameter:	**APPN Enable/Disable**
Default:	Enable
Options:	Enable | Disable
Function:	Globally enables or disables APPN on the router.
	Disable – Forces every APPN interface existing on the node into the "down" (inoperative) state.
	Enable – Reinitializes every APPN interface existing on the node, with each interface maintaining the most recent setting of its own Interface Enable/Disable parameter. The actual up/down operating state of each interface at the time of global reinitialization further depends on the current up/down state of the associated circuit.
Instructions:	Select Disable to force every APPN interface existing on the node into the "down" (inoperative) state.
	Select Enable to globally reinitialize all APPN interfaces configured on the node, with each interface maintaining the most recent setting of its own Interface Enable/Disable parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.2

Parameter:	**Local Node Name**
Default:	None
Options:	Any valid name with up to 17 characters in the format <NETID.CPNAME>, where NETID is the global network name with up to 8 characters followed by a period, and CPNAME is the control point name with up to 8 characters
Function:	The Local Node Name parameter identifies the unique name of the network and the Wellfleet router node name.
Instructions:	Enter the node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only and must start with a non-numeric character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, NETWORKA.SYSTEMA is a valid entry for the Local Node Name parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.4

Parameter:	**Local ID Block**
Default:	None
Options:	A valid string of 3 hexadecimal digits
Function:	The Local ID Block parameter is a unique hexadecimal value that identifies the APPN product in this network node (NN). The number is the first three digits of the node identification.
Instructions:	Accept the default value or enter 3 hexadecimal digits in this field.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.6

Parameter:	**Local ID Number**
Default:	None
Options:	A valid string of 5 hexadecimal digits (0 to 9, A,B,C,D,E,F)
Function:	The Local ID Number identifies the local APPN network node and is included in APPN alerts and exchange identifications (XIDs). These five digits are combined with the 3-digit Local ID Block to form a unique XID node identification. The APPN network node and the adjacent node exchange node identifications when the nodes are establishing a connection.
Instructions:	Enter 5 hexadecimal digits.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.7

APPN Global Advanced Parameters

To edit the APPN global advanced parameters from the Edit APPN Global Parameters window (Figure 3-2), proceed as follows:

1. Click on the Advanced button. The Advanced APPN Global Parameters window appears (Figure 3-3). This window contains general parameters associated with APPN directory services, intermediate session routing, and topology and routing services.

```
┌─────────────────────────────────────────────────────────────────┐
│ ▣ Advanced APPN Global Parameters                             ㉒ │
│                                                                   │
│                                              ┌──────────┐         │
│                                              │  Cancel  │         │
│         Configuration Mode: local            ├──────────┤         │
│                 SNMP Agent: LOCAL FILE       │    OK    │         │
│                                              ├──────────┤         │
│                                              │ Values...│         │
│                                              ├──────────┤         │
│                                              │  Help... │         │
│                                              └──────────┘         │
│                                                                   │
│         Route Addition Resistance        │128      │    ▲         │
│         Endpoint Session RSCV Storage    │ENABLE   │              │
│         Max Directory Entries            │0        │              │
│         Max Cached Directory Entries     │100      │              │
│         Network Locate Timeout (in seconds) │60    │              │
│         TRS Route Tree Cache Size        │8        │              │
│         TRS Route Tree Cache Usage Limit │8        │    █         │
│         Max NNs in Topology DB(0 = Unlimited) │0   │              │
│         Max TGs in Topology DB(0 = Unlimited) │0   │              │
│         Max Number of ISR Sessions       │1000█    │    ▼         │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```

Figure 3-3. Advanced APPN Global Parameters Window

2. Click on each parameter value that you want to change, then enter a new value.

3. Click on the OK button to save your changes and to exit the Advanced APPN Global Parameters window.

A description of the parameters on the Advanced APPN Global
Parameters window follows.

Parameter:	**Route Addition Resistance**
Default:	128
Options:	0 to 255
Function:	Route Addition Resistance is a value that indicates the relative desirability of using this network node for intermediate session routing (ISR) when multiple paths exist.
Instructions:	Enter a value in the range 0 to 255. The lower the value, the more desirable the node becomes for ISR.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.21

Parameter:	**Endpoint Session RSCV Storage**
Default:	Enable
Options:	Enable | Disable
Function:	The Endpoint Session RSCV Storage parameter (when enabled) stores route selection control vector information used by the network node when it is the endpoint (origin or destination) node in the route. The Endpoint Session RSCV Storage parameter is useful for debugging purposes using the Technician Interface software. Refer to *Using Technician Interface Scripts* for information on using the **show appn** command. When enabled, the Endpoint Session RSCV Storage parameter consumes additional memory for each endpoint session.
Instructions:	Select Enable to enable Endpoint Session RSCV Storage. Select Disable to disable Endpoint Session RSCV Storage.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.29

Parameter:	**Max Directory Entries**
Default:	0
Options:	A value of 0 indicates an unlimited number of entries; otherwise, any positive numeric value.
Function:	Specifies the maximum number of entries that can be stored in the directory database at the network node. The directory database stores network resources and their location in the APPN network.
Instructions:	Enter a value large enough for the network being managed, or specify 0 for unlimited entries.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.32

Parameter:	**Max Cached Directory Entries**
Default:	100
Options:	Any positive numeric value
Function:	Specifies the maximum number of cached directory entries that can be stored in the local directory database at any one time. The information received through caching may ultimately result in large local directory databases and may include resource entries that are no longer in use or up to date. If the maximum number is reached and if all entries are in use, new entries to be cached will replace the oldest cache entries.
Instructions:	Enter a value large enough for the network being managed. Increase the current value if the oldest valid entries are being replaced on a regular basis.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.31

Parameter:	**Network Locate Timeout (in seconds)**
Default:	60 seconds
Options:	Specify 0 to indicate no timeouts.
Function:	Specifies the time (in seconds) to elapse before a network search times out. The network search function locates network resources and controls the flow of search requests and replies throughout the network.
Instructions:	Enter a positive time value in seconds. If directory services at the local network node does not receive a search response at the completion of this timeout value, the search is terminated. When the local network node receives the search response, the search completes.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.33

Parameter:	**TRS Route Tree Cache Size**
Default:	8 (minimum)
Options:	Specify any positive numeric value 8 or larger.
Function:	Specifies the size of the topology and routing services (TRS) tree database. The tree database allows a network node to cache optimal routes from the local APPN node to other network nodes (tree caching).
	Enter a positive numeric value to indicate the maximum number of routing trees to be stored in the database.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.34

Parameter:	**TRS Route Tree Cache Usage Limit**
Default:	8
Options:	Any positive numeric value, with 1 being the minimum
Function:	Specifies the maximum number of times a route tree will be used before RSS calculates a new route tree for that class of service (COS).
Instructions:	Enter any positive numeric value, 1 or larger.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.35

Parameter:	**Max NNs in Topology DB (0=unlimited)**
Default:	0
Options:	Any positive number; specify 0 to indicate an unlimited number of network nodes.
Function:	Specifies the maximum number of network nodes (routers) in the network topology database.
Instructions:	Specify 0 to include all network nodes.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.36

Parameter:	**Max TGs in Topology DB (0=unlimited)**
Default:	0
Options:	Any valid positive number; specify 0 to indicate an unlimited number of transmission groups (TGs).
Function:	Specifies the maximum number of TGs in the local topology database. A TG represents a single unidirectional connection (or link) to an adjacent link station.
Instructions:	Specify 0 to include all TGs.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.37

Parameter:	**Max Number of ISR Sessions**
Default:	1000
Options:	100 is the minimum value for this parameter; any valid positive number 100 or greater.
Function:	Specifies the maximum number of intermediate session routing (ISR) sessions that the local network node can support concurrently.
Instructions:	The Max Number of ISR Sessions parameter controls the maximum number of ISR sessions. Enter a value of 100 or greater.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.38

Parameter:	**ISR Congestion Threshold**
Default:	900
Options:	Any positive numeric value less than the Max Number of ISR Sessions parameter setting
Function:	Specifies the maximum number of ISR sessions before the node considers itself congested, causing new sessions to be directed away from this network node. A network node is no longer congested when the number of ISR sessions drops to the ISR Decongestion Threshold.
Instructions:	Enter any positive numeric value less than the setting for the Max Number of ISR Sessions parameter. In most cases, a value equal to 90% of the Max Number of ISR Sessions parameter is an acceptable value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.39

Parameter:	**ISR Decongestion Threshold**
Default:	800
Options:	Any positive numeric value less than the ISR Congestion Threshold setting
Function:	Specifies the number of active ISR sessions that the local network node must drop to before it is no longer considered congested. A network node is congested when the number of ISR sessions reaches the ISR Congestion Threshold.
Instructions:	Enter any positive numeric value that is less than the current ISR Congestion Threshold parameter setting. In most cases, a value equal to 80% of the Max Number of ISR Sessions parameter is an acceptable value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.40

Parameter:	**Max RU Size for ISR Sessions**
Default:	1024
Range:	256 to 4096 inclusive
Function:	Specifies the maximum request unit (RU) size for the segmentation and reassembly of session and nonsession traffic during ISR sessions.
Instructions:	Enter a positive number in range 256 to 4096. The lower value, 256, is the minimum value for an RU; 4096 is the maximum value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.41

Parameter:	**ISR Receive Pacing Window**
Default:	7
Range:	1 to 63 inclusive
Function:	Specifies the maximum number of messages that the network node can receive in one pacing window during an ISR session.
Instructions:	Enter a positive number in the range 1 to 63 inclusive. Entering higher values may improve performance, but will consume more memory.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.42

Parameter:	**ISR Session RSCV Storage**
Default:	Enable
Options:	Enable | Disable
Function:	Enables or disables the storage of route selection control vectors (RSCVs) during ISR sessions. The ISR Session RSCV Storage parameter is useful for debugging purposes. When enabled, the ISR Session RSCV Storage parameter will consume additional memory for each ISR session.
Function:	The intermediate network node uses RSCV information to obtain the next node and a transmission group (TG) to the node along a route. The maximum number of APPN nodes and TGs a session may traverse is limited to the size of the RSCV.
Instructions:	Select Enable to enable ISR Session RSCV Storage. Select Disable to disable ISR Session RSCV Storage.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.1.43

Editing APPN Interfaces and Ports

To edit APPN Interface parameters, begin at the Wellfleet Configuration Manager window (Figure 3-1) and proceed as follows:

1. Select the Protocols→APPN→ Interfaces option.

   The APPN Interface List window appears (Figure 3-4).
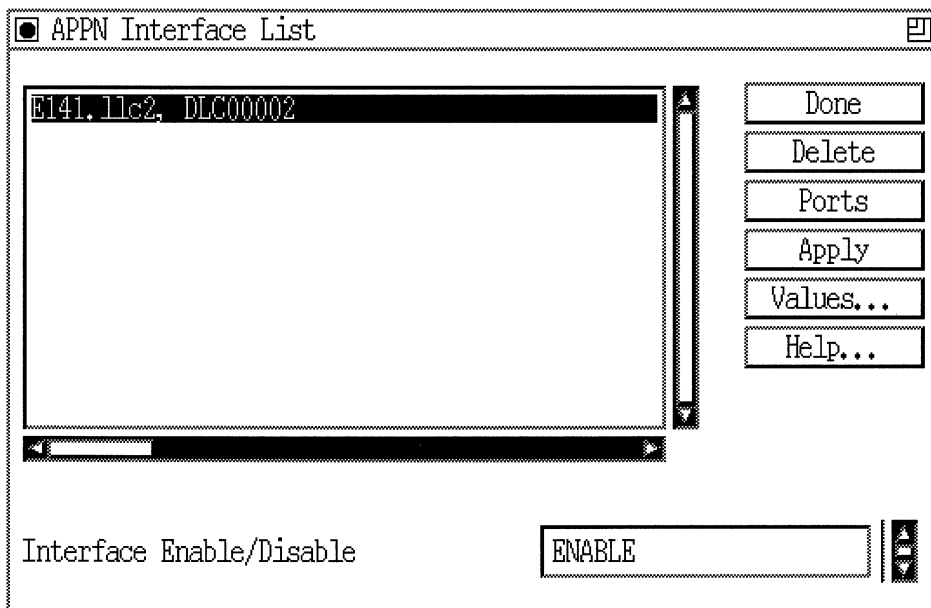
2. Edit those parameters you want to change.

```
┌──────────────────────────────────────────────────────────────────────┐
│ ● APPN Interface List                                              回  │
│                                                                        │
│  ┌────────────────────────────────────────┐▲  ┌──────────────────┐   │
│  │ E141.llc2, DLC00002                    ││  │      Done        │   │
│  │                                        ││  ├──────────────────┤   │
│  │                                        ││  │     Delete       │   │
│  │                                        ││  ├──────────────────┤   │
│  │                                        ││  │     Ports        │   │
│  │                                        ││  ├──────────────────┤   │
│  │                                        ││  │     Apply        │   │
│  │                                        ││  ├──────────────────┤   │
│  │                                        ││  │    Values...     │   │
│  │                                        ││  ├──────────────────┤   │
│  │                                        ││  │     Help...      │   │
│  │                                        ││▼ └──────────────────┘   │
│  └────────────────────────────────────────┘                          │
│  ◄                                        ►                           │
│                                                                        │
│  Interface Enable/Disable          ┌──────────────────┐  ▲           │
│                                     │ ENABLE           │  ▼           │
│                                     └──────────────────┘              │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 3-4. APPN Interface List Window

3. Click on the Apply button to save your changes.

4. Click on the Done button to exit the APPN Interface List window. If you want to delete an interface listed in this window, select/ highlight the interface that you want to delete and click on the Delete button (described in the next section).

   If you want to display and enable (or disable) the current port(s) on an interface, to add additional ports to the interface, to delete ports, or to edit advanced port parameters, click on the Ports button.

The parameters shown on the APPN Interface List window follow.

Parameter:	**Interface Enable/Disable**
Default:	Enable
Options:	Enable | Disable
Function:	Enables or disables APPN routing on this interface.
	Enable – Initializes the selected APPN interface. Use the Enable setting also to initialize an existing APPN interface earlier disabled. The actual up/down operating state of each interface at the time of initialization further depends on the current up/down state of the associated circuit.
	Disable – Forces the APPN interface into the "down" (inoperative) state.
Instructions:	Select Disable only if you want to disable APPN routing over this interface.
	Select Enable if you want to re-enable APPN routing over this interface.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.2.1.2

Deleting APPN Interfaces

If you want to delete an interface from the APPN Interface List
window (Figure 3-4), select the interface to highlight it, then click on
the Delete button. The system software deletes the interface entry
from the APPN configuration.

Editing APPN Ports

The APPN Interface List window (Figure 3-4) allows you to enable or
disable APPN ports, add and delete APPN ports on existing interfaces,
and edit advanced port parameters. From the APPN Interface List
window, proceed as follows:

1. Select the Ports option to display the APPN Port List window
   (Figure 3-5).

2. Highlight the port you want to modify. The parameter values
   associated with that interface appear (lower right) in the
   parameters window and change dynamically with each port that
   you select.

3. Click on the Apply button to save your changes.

```
┌─────────────────────────────────────────────────────────────────────┐
│ ● APPN Port List                                                   ⊡ │
│ ┌─────────────────────────────────────────────┐  ┌───────────────┐  │
│ │ PORT0002                                   ▲ │  │     Done      │  │
│ │                                              │  └───────────────┘  │
│ │                                              │  ┌───────────────┐  │
│ │                                              │  │     Add       │  │
│ │                                              │  └───────────────┘  │
│ │                                              │  ┌───────────────┐  │
│ │                                              │  │    Delete     │  │
│ │                                              │  └───────────────┘  │
│ │                                              │  ┌───────────────┐  │
│ │                                              │  │   Advanced    │  │
│ │                                              │  └───────────────┘  │
│ │                                              │  ┌───────────────┐  │
│ │                                            ▼ │  │    Apply      │  │
│ └─────────────────────────────────────────────┘  └───────────────┘  │
│ ◄─────────────                              ►                        │
│                                                  ┌───────────────┐  │
│                                                  │   Values...   │  │
│                                                  └───────────────┘  │
│                                                  ┌───────────────┐  │
│                                                  │    Help...    │  │
│                                                  └───────────────┘  │
│                                                                     │
│ Port Enable/Disable          ┌──────────────────────┐ ▲            │
│                              │ ENABLE               │              │
│                              └──────────────────────┘              │
│ Port Address (hex)           ┌──────────────────────┐              │
│                              │ 0x1234FF34FFEE04     │              │
│                              └──────────────────────┘              │
│ Local Link Station Role      ┌──────────────────────┐ ▼            │
│                              │ NEGOTIABLE           │              │
│                              └──────────────────────┘              │
└─────────────────────────────────────────────────────────────────────┘
```
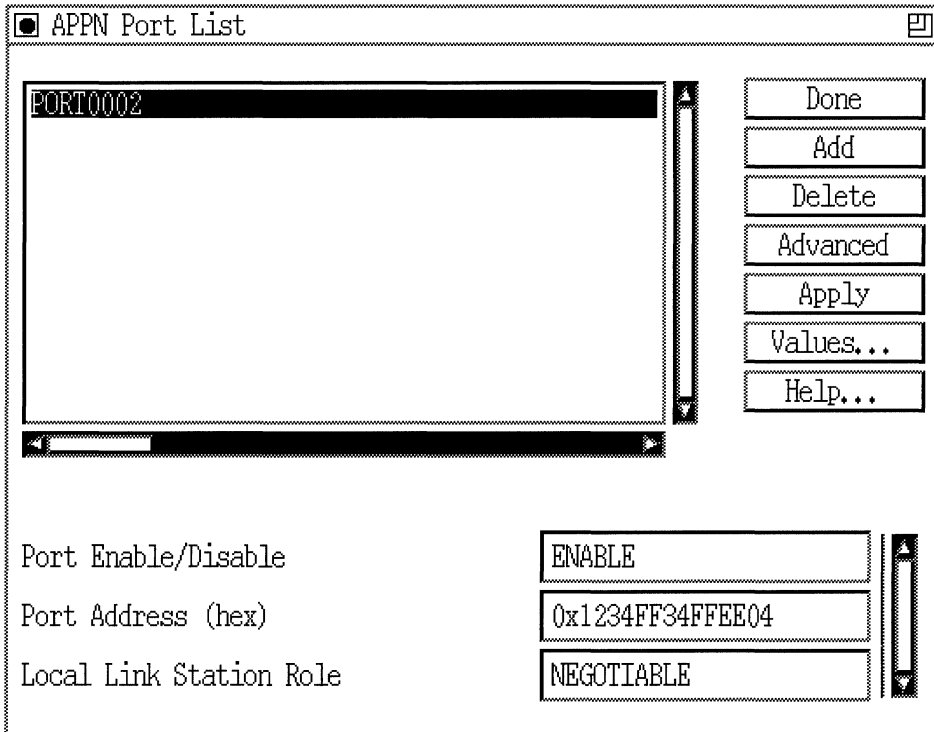
Figure 3-5. APPN Port List Window

4. Click on the Done button to exit the APPN Port List window. If you want to delete a port listed in this window, select/highlight the interface that you want to delete and click on the Delete button (described in the next section).

A description of the parameters shown on the APPN Port List window follows.

Parameter:	**Port Enable/Disable**
Default:	Enable
Options:	Enable | Disable
Function:	Enables or disables APPN routing on this port.

Enable – Initializes the selected APPN port. Use the Enable setting also to initialize an existing APPN port earlier disabled. The actual up/down operating state of each port at the time of initialization further depends on the current up/down state of the associated circuit.

Disable – Forces the APPN port into the "down" (inoperative) state.

Instructions:	Select Disable only if you want to disable APPN routing over this port.
	Select Enable if you want to re-enable APPN routing over this port.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.2

Parameter:	**Port Address**
Default:	None
Options:	None
Function:	Specifies the interface address to be used by this port.
Instructions:	This is the MAC address, SDLC address, or DLCI and SAP address that you specified when you added the original circuit to the interface. A MAC address starts with the 0x prefix, and ends with the SAP value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.38

Parameter: **Local Link Station Role**

Default: Negotiable

Options: Negotiable | Primary | Secondary

Function: Specifies the initial role of the local network node when activating adjacent link stations through this port. *Negotiable* means that the local network node can be either primary or secondary and the actual role is determined during link activation. A link between the two nodes may require that one link station takes the role of *primary* link station and one link station takes the role of *secondary* link station.

Instructions: Click on Values to display the Local Link Station Role options and select the parameter, either Negotiable, Primary, or Secondary

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.8

Deleting APPN Ports

If you want to delete a port from an interface on the APPN Port List window (Figure 3-5), select the port to highlight it, then click on the Delete button. The system software deletes the interface entry from the APPN configuration.

Adding Ports to an APPN Interface

To add a port to an APPN interface, display the APPN Port List window (Figure 3-5) and proceed as follows:

1. Click on the Add button. The Port Configuration window appears (Figure 3-6).

```
┌────────────────────────────────────────────────────────────────┐
│ ▣ Port Configuration                                         ▣  │
│ ┌──────────────────────────────────────────────────────────┐   │
│ │                                    ┌──────────────┐       │   │
│ │                                    │    Cancel    │       │   │
│ │   Configuration Mode: local        ├──────────────┤       │   │
│ │                                    │      OK      │       │   │
│ │          SNMP Agent: LOCAL FILE    ├──────────────┤       │   │
│ │                                    │   Values...  │       │   │
│ │                                    ├──────────────┤       │   │
│ │                                    │    Help...   │       │   │
│ │                                    └──────────────┘       │   │
│ │                                                           │   │
│ │   Port Name                     ┌──────────────────┐ ┌─┐  │   │
│ │                                 │ ▮                │ │▲│  │   │
│ │   Port Number                   ├──────────────────┤ ├─┤  │   │
│ │                                 │                  │ │ │  │   │
│ │   Port MAC Address (hex, msb)   ├──────────────────┤ │ │  │   │
│ │                                 │                  │ │ │  │   │
│ │   Port SAP (hex)                ├──────────────────┤ │ │  │   │
│ │                                 │                  │ │ │  │   │
│ │   Local Link Station Role       ├──────────────────┤ ├─┤  │   │
│ │                                 │ NEGOTIABLE       │ │▼│  │   │
│ │                                 └──────────────────┘ └─┘  │   │
│ └──────────────────────────────────────────────────────────┘   │
└────────────────────────────────────────────────────────────────┘
```
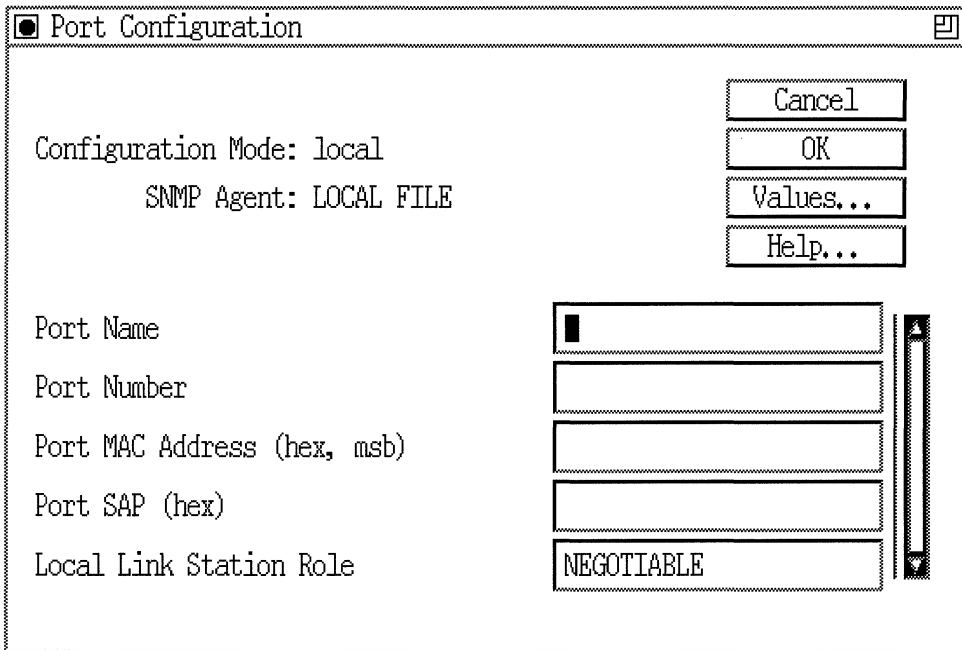
Figure 3-6. Port Configuration Window

2. Enter values for the Port Name, Port Number, Port MAC Address,
    Port SAP, and Local Link Station Role parameters. If you
    configuring SDLC, the SDLC Address parameter appears instead of
    the Port MAC address parameter. If you are configuring Frame
    Relay on an LLC2 interface, the DLCI parameter appears in the
    Port Configuration window.

3. Click on the OK button to save your entries to the configuration
    file.

    The APPN Port List window (Figure 3-5) reappears after you click
    on the OK button.

    A description of the parameters shown on the Port Configuration
    window follows.

Parameter: **Port Name**

Default: None

Options: Up to 8 alphanumeric uppercase characters

Function: Specifies the name of the newly added port.

Instructions: Enter up to 8 alphanumeric uppercase characters with no blank spaces (leading, trailing, or embedded).

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.15

Parameter: **Port Number**

Default: None

Options: Any unique 3-digit number

Function: Specifies a unique number to identify this port, if more that one port is configured on an interface.

Instructions: Enter any 3-digit value.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.16

Parameter: **Port MAC Address**

Default: None

Options: Any unique 48-bit 12-digit hexadecimal MAC-level address

Function: Specifies a unique MAC-level address, DLCI (for frame relay), or SDLC address.

Instructions: Enter a 12-digit MAC hexadecimal address in MSB non-canonical form (regardless of the media), a DLCI address, or SDLC address.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.38

Parameter:	**Port SAP (hex)**
Default:	None
Options:	Any unique service access point (SAP) 2-digit hexadecimal value, usually 04
Function:	Specifies a service access point (SAP) address that lets multiple applications and protocol entities in a single computer share a MAC address.
Instructions:	Enter a 2-digit hexadecimal value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.38

Parameter:	**Local Link Station Role**
Default:	Negotiable
Options:	Negotiable | Primary | Secondary
Function:	Specifies the initial role of the local network node when activating adjacent link stations through this port. *Negotiable* means that the local network node can be either primary or secondary and the actual role is determined during link activation. A link between the two nodes may require that one link station takes the role of *primary* link station and one link station takes the role of *secondary* link station.
Instructions:	Click on Values to display the Local Link Station Role options and select the parameter, Negotiable, Primary, or Secondary.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.8

Editing the APPN Advanced Port Parameters

To edit the APPN advanced port parameters, display the APPN Port List window (Figure 3-5) and proceed as follows:

1. Click on the Advanced button. The APPN Port window appears (Figure 3-7).

```
┌─────────────────────────────────────────────────────────────────┐
│ ■ APPN PORT                                                    凹 │
├─────────────────────────────────────────────────────────────────┤
│                                              ┌──────────────┐     │
│                                              │   Cancel     │     │
│     Configuration Mode: local               ├──────────────┤     │
│                                              │     OK       │     │
│             SNMP Agent: LOCAL FILE          ├──────────────┤     │
│                                              │  Values...   │     │
│                                              ├──────────────┤     │
│                                              │   Help...    │     │
│                                              └──────────────┘     │
│                                                                   │
│  Max Receive BTU Size          ┌─────────────────────┐  ┌──┐     │
│                                │ 2057                │  │▲ │      │
│  Max Send BTU Size             ├─────────────────────┤  ├──┤     │
│                                │ 2057                │  │  │      │
│  Max I-Frame Window            ├─────────────────────┤  │  │      │
│                                │ 7                   │  │  │      │
│  Total Link Activation Limits  ├─────────────────────┤  │  │      │
│                                │ 256                 │  │  │      │
│  Inbound Link Activation Limits├─────────────────────┤  │  │      │
│                                │ 128                 │  │  │      │
│  Outbound Link Activation Limits├────────────────────┤  │  │      │
│                                │ 128                 │  │  │      │
│  Implicit CP Sessions          ├─────────────────────┤  │  │      │
│                                │ YES                 │  │  │      │
│  Implicit Limited Resource     ├─────────────────────┤  │  │      │
│                                │ NO                  │  │  │      │
│  Implicit Effective Capacity   ├─────────────────────┤  │  │      │
│                                │ 133                 │  │▼ │      │
│  Implicit Connection Cost      ├─────────────────────┤  └──┘     │
│                                │ 128                 │            │
│                                └─────────────────────┘            │
└─────────────────────────────────────────────────────────────────┘
```

Figure 3-7. APPN Port Window

2. Click on each parameter value that you want to change, then enter a new value.

3. Click on the OK button to save your changes and return to the APPN Port List window (Figure 3-5).

A description of the parameters shown on the APPN Port window follows.

Parameter:	**Max Receive BTU Size**
Default:	2057
Range:	256 to 4105
Function:	Specifies the maximum Basic Transmission Unit (BTU) that this network node can receive. Each link station determines its own maximum BTU size. It is based on local node definitions and exchange identification (XID) information received from the interface and the adjacent link station.
Instructions:	Enter a number in the range 256 to 4105 that the node can handle.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.9

Parameter:	**Max Send BTU Size**
Default:	2057
Range:	256 to 4105
Function:	Specifies the maximum Basic Transmission Unit (BTU) that can be sent over this port. Each link station determines its own maximum send BTU size. It is based on local node definitions and exchange identification (XID) information received from the interface and the adjacent link station.
Instructions:	Enter a number in the range 256 to 4105.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.24

Parameter:	**Max I-Frame Window**
Default:	7
Range:	A numeric value not exceeding 127
Function:	Specifies the maximum number of information frames (I-frames) that the local network node can receive before an acknowledgment is sent.
Instructions:	Enter a number in the range 1 to 127.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.10

Parameter:	**Total Link Activation Limits**
Default:	256
Range:	0 to 256. See Table 3-1.
Function:	Specifies the maximum link activation limit for this port. The value is the maximum number of inbound and outbound link stations that the port will allow in this configuration. The maximum value depends on the Local Link Station Role and the type of port, as listed in Table 3-1.
Instructions:	Specify a value in the range 0 to 255. The value must be greater than or equal to the combined settings for the Inbound Link Activation Limits and Outbound Link Activation Limits parameters.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.17

Parameter:	**Inbound Link Activation Limits**
Default:	128
Range:	0 to 256. See Table 3-1.
Function:	Specifies the maximum inbound link activation limit for this port.The value is the maximum number of inbound link stations that the port will allow in this configuration.
Instructions:	Specify a value in the range 0 to 255. This value plus the current setting for the Outbound Link Activation Limits parameter must be less than or equal to the current Total Link Activation Limits parameter setting.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.18

Parameter: **Outbound Link Activation Limits**

Default: 128

Range: 0 to 256. See Table 3-1.

Function: Specifies the maximum outbound link activation limit for this port. The value is the maximum number of outbound link stations that the port will allow in this configuration.

Instructions: Specify a value in the range 0 to 255. This value plus the current setting for the Inbound Link Activation Limits parameter must be less than or equal to the Total Link Activation Limits parameter setting.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.19

Table 3-1. Link Activation Limit Default Values

Port Type	Local Link Station Role	Total Activation Limit	Inbound Link Activation Limits	Outbound Link Activation Limits
Leased	Secondary	1	1	0
Leased	Negotiable	1	0	0
Leased	Primary	256	0	256
SATF	any	256(x+y)	128(x)	128(y)

Parameter: **Implicit CP Sessions**

Default: Yes

Options: Yes | No

Function: Specifies whether CP-to-CP sessions are permitted for dynamic link stations. Dynamic link stations are those link stations that are not defined on this port, but are those that are activated by the adjacent node.

Instructions: Click on Values and select Yes or No.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.25

Parameter: **Implicit Limited Resource**

Default: Yes

Options: Yes | No

Function: Specifies whether dynamic link stations on this port should be defined as limited resources. A link station defined as *limited resource* is deactivated after the number of sessions using the port drops to zero.

Instructions: Click on Values and select Yes or No.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.26

Parameter:	**Implicit Effective Capacity**
Default:	133
Options:	24 (Capacity: 1200)
	32 (Capacity: 2400)
	40 (Capacity: 4800)
	44 (Capacity: 7200)
	48 (Capacity: 9600)
	52 (Capacity: 14400)
	56 (Capacity: 19200)
	66 (Capacity: 48000)
	67 (Capacity: 56000)
	69 (Capacity: 64000)
	117 (Capacity: 4M)
	128 (Capacity: 10M)
	133 (Capacity: 16M)
	255 (Capacity: Maximum)
Function:	The Effective Capacity is the highest bit-transmission rate that the transmission group (TG) can obtain before being considered overloaded. The link bandwidth and maximum load factor determine this value. TGs to dynamic link stations on this port use this value.
Instructions:	Click on Values and select a number from the list.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.27

Parameter:	**Implicit Connection Cost**
Default:	128
Range:	0 to 255 inclusive
Function:	Specifies the relative cost (per connect time) of using a transmission group (TG) to dynamic link stations on this port. A value of 0 indicates no cost, and a value of 255 indicates maximum cost. The cost per connect time is typically based on the applicable tariffs for the transmission facility this TG uses. An X.25 network, for example, may have a high connection cost for dynamic link stations.
Instructions:	Enter a number in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.28

Parameter:	**Implicit Byte Cost**
Default:	128
Range:	0 to 255 inclusive
Function:	Specifies the relative cost of transmitting a byte over this transmission group (TG) to an dynamic link station on this port. A value of 0 indicates no cost, and a value of 255 indicates maximum cost. An X.25 network, for example, may have a high byte cost for dynamic link stations.
Instructions:	Enter a number in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.29

Parameter:	**Implicit Security**
Default:	1
Range:	1 to 255
Options:	1 (Non-secure)
	32 (Public-Switched)
	64 (Underground)
	128 (Conduit)
	160 (Encrypted)
	192 (Guarded radiation)
	255 (Maximum)
Function:	Specifies the security level of the transmission group (TG) to the dynamic link stations on this port.
Instructions:	Enter a value in the range 1 to 255; use the common definitions indicated under Options.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.30

Parameter:	**Implicit Delay**
Default:	0
Range:	0 to 255
Options:	76 (Negligible)
	113 (Terrestrial)
	145 (Packet)
	153 (Long)
	255 (Maximum)
Function:	Specifies the propagation delay or the relative amount of time that it takes for a signal to travel the length of a transmission group (TG) to dynamic link stations on this port.
Instructions:	Enter a value in the range 0 to 255; use the common definitions indicated under Options.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.3.1.31

Parameter: **Implicit User-Defined 1**

Default: 128

Range: 0 to 255

Function: Specifies the first user-defined transmission group characteristic to a dynamic link station on this port.

Instructions: Enter a value in the range 0 to 255.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.32

Parameter: **Implicit User-Defined 2**

Default: 128

Range: 0 to 255

Function: Specifies the second user-defined transmission group characteristic to a dynamic link station on this port.

Instructions: Enter a value in the range 0 to 255.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.33

Parameter: **Implicit User-Defined 3**

Default: 128

Range: 0 to 255

Function: Specifies the third user-defined transmission group characteristic to a dynamic link station on this port.

Instructions: Enter a value in the range 0 to 255.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.3.1.34

Editing APPN Adjacent Link Stations

To edit APPN Adjacent Link Station parameters, begin at the Wellfleet Configuration Manager window (Figure 3-1) and proceed as follows:

1. Select the Protocols→APPN→ Adjacent Link Stations option.

   The APPN Adjacent Link Station List window appears (Figure 3-8).
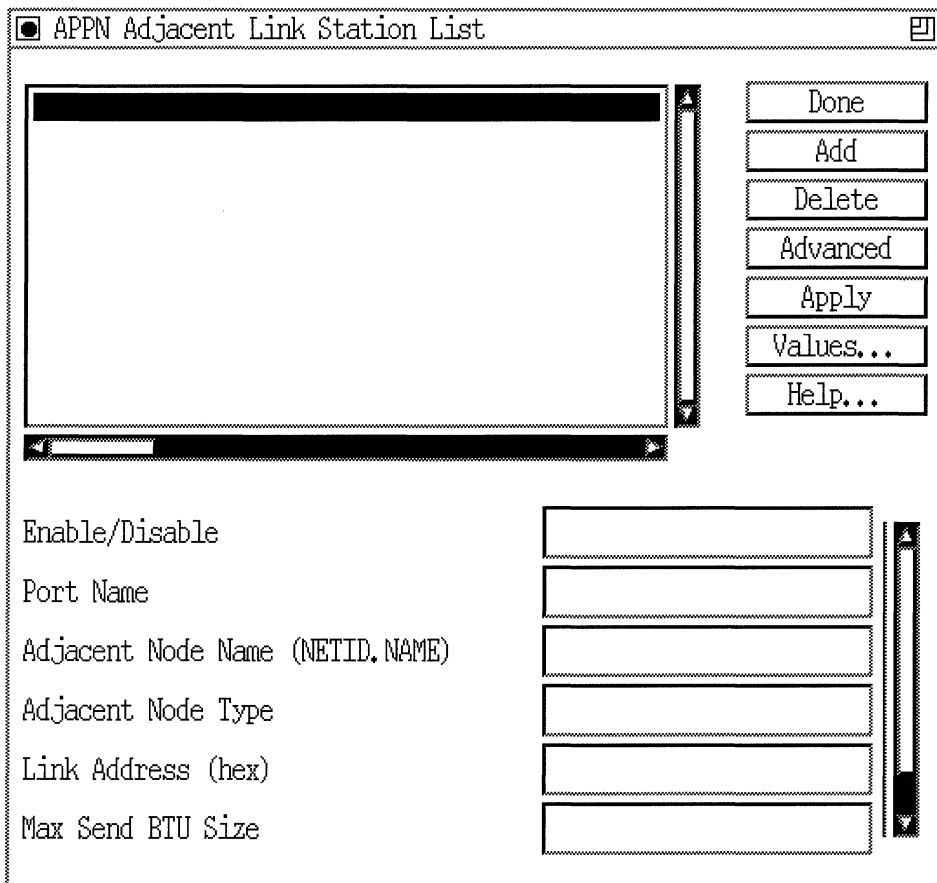
Figure 3-8. APPN Adjacent Link Station List Window

2. Edit those parameters you want to change. If the window appears without any adjacent link stations in the list, go to the section "Adding Adjacent Link Stations."

3. Click on the Apply button to save your changes.

4. Click on the Done button to exit the APPN Interface List window. If you want to delete an adjacent link station listed in this window, select/highlight the adjacent link station name that you want to delete and click on the Delete button (described in the next section). If you want to edit the advanced adjacent link station parameters, click on the Advanced button and go to the section "Editing the Advanced Adjacent Link Station Parameters."

A description of the parameters shown on the APPN Adjacent Link Station List window follows.

Parameter:	**Enable/Disable**
Default:	Enable
Options:	Enable | Disable
Function:	Enable or disables the adjacent link station highlighted in the APPN Adjacent Link Station List window.
	Enable – Initializes the selected adjacent link station. Use the Enable setting also to initialize an existing adjacent link station port earlier disabled. The actual up/down operating state of each adjacent link station port at the time of initialization further depends on the current up or down state of the associated circuit.
	Disable – Forces the adjacent link station into the "down" (inoperative) state.
Instructions:	Click on Values and select Enable or Disable. Select Disable only if you want to disable the adjacent link station.
	Select Enable if you want to re-enable the adjacent link station.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.2

Parameter:	**Port Name**
Default:	None
Options:	Up to 8 alphanumeric uppercase characters.
Function:	Specifies the name of the port supporting the adjacent link station.
Instructions:	Enter up to 8 alphanumeric uppercase characters with no blank spaces (leading, trailing, or embedded).
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.4

Parameter:	**Adjacent Node Name**
Default:	None
Options:	Any valid name with up to 17 characters in the format <NETID.CPNAME>, where NETID is the unique network name with up to 8 characters followed by a period, and CPNAME is the control point name with up to 8 characters
Function:	The Adjacent Node Name parameter identifies the name of the network and the adjacent node name.
Instructions:	Enter the adjacent node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only and must start with an alphabetic character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, APPNNODE.CPONE is a valid entry for the Adjacent Node Name parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.6

Parameter:	**Adjacent Node Type**
Default:	Learned
Options:	Network Node (NN) | End Node (EN) | Low-entry Networking Node (LEN) | Learned.
Function:	Specifies the type of adjacent link station node.
Instructions:	Click on Values and select NN, EN, LEN, or Learned. If you specify Learned, APPN automatically learns the type of adjacent link station.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.23

Parameter:	**Link Address (hex)**
Default:	None
Options:	None
Function:	Specifies the MAC/SAP, DLCI/SAP (for frame relay), or SDLC address that this adjacent link station will use. This field displays the address that you specified when you added the adjacent link station. The MAC address starts with the 0x prefix and ends with the service access point (SAP) value.
Instructions:	If you choose to specify a new link data address, specify the MAC address in MSB non-canonical format with the 0x prefix, and end the address with the SAP value. For frame relay, specify a valid DLCI and SAP value. For SDLC, specify a valid SDLC address.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.27

Parameter:	**Max Send BTU Size**
Default:	2057
Range:	256 to 4105
Function:	Specifies the maximum Basic Transmission Unit (BTU) that can be sent over this transmission group to an adjacent link station. Each link station determines its own maximum send BTU size. It is based on local node definitions and exchange identification (XID) information received from the interface and the adjacent link station.
Instructions:	Enter a number in the range 256 to 4103.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.14

Parameter:	**Target Pacing Count**
Default:	4
Range:	0 to 32767
Function:	Specifies the pacing window size for session requests (BINDs) on this transmission group to the adjacent link station. This value is only used for fixed BIND pacing. Pacing windows control the number of session requests to prevent memory consumption at the adjacent link station.
Instructions:	Enter a value in the range 0 to 32767.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.13

Deleting Adjacent Link Stations

If you want to delete an adjacent link station from the APPN Adjacent Link Station List window (Figure 3-8), select the adjacent link station name to highlight it, then click on the Delete button. The system software deletes the interface entry from the APPN configuration.

Adding Adjacent Link Stations

To add a connection to an adjacent link station to an APPN interface, display the APPN Adjacent Link Station List window (Figure 3-8) and proceed as follows:

1. Click on the Add button. The Adjacent Link Station Port Configuration window appears (Figure 3-9).

```
┌─────────────────────────────────────────────────────────────┐
│ ▣ Adjacent Link Station Configuration                    囬  │
│                                                              │
│                                              ┌──────────┐    │
│                                              │  Cancel  │    │
│       Configuration Mode: local             ├──────────┤    │
│                                              │    OK    │    │
│              SNMP Agent: LOCAL FILE          ├──────────┤    │
│                                              │ Values...│    │
│                                              ├──────────┤    │
│                                              │  Help... │    │
│                                              └──────────┘    │
│                                                              │
│       Port Name                   ┌█─────────────────┐ ┌─┐  │
│                                   └──────────────────┘ └─┘  │
│                                                              │
└─────────────────────────────────────────────────────────────┘
```
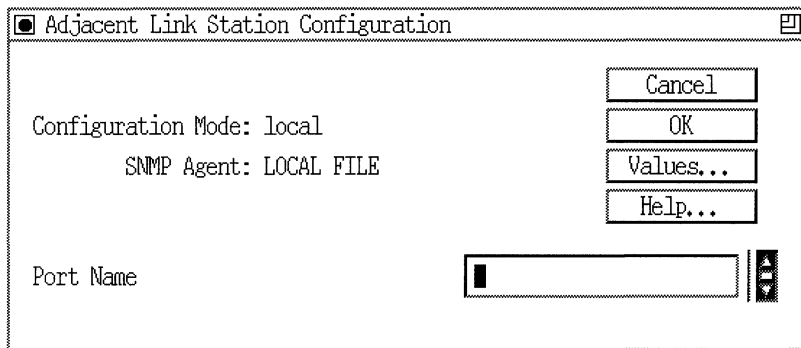
Figure 3-9. Adjacent Link Station Port Configuration Window

2. Specify the Port Name parameter, as follows:

Parameter:	**Port Name**
Default:	None
Options:	Up to 8 alphanumeric uppercase characters.
Function:	Specifies the name of the port supporting the adjacent link station.
Instructions:	Enter up to 8 alphanumeric uppercase characters with no blank spaces (leading, trailing, or embedded).
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.4

3. When you specify the Port Name parameter, click on the OK button to proceed to the next Adjacent Link Station Configuration window (Figure 3-10).

```
┌──────────────────────────────────────────────────────────────────┐
│ ● Adjacent Link Station Configuration                          ▣ │
│                                                                    │
│                                          ┌──────────────┐          │
│                                          │    Cancel    │          │
│  Configuration Mode: local               ├──────────────┤          │
│           SNMP Agent: LOCAL FILE         │      OK      │          │
│                                          ├──────────────┤          │
│                                          │   Values...  │          │
│                                          ├──────────────┤          │
│                                          │    Help...   │          │
│                                          └──────────────┘          │
│                                                                    │
│  Adjacent Link Station Name      ┌─────────────────────┐  ┌─┐     │
│                                  │ ▮                   │  │▲│     │
│  Adjacent Node Name (NETID.NAME) ├─────────────────────┤  │ │     │
│                                  │ BAYNET.             │  │ │     │
│  MAC Address (hex, msb)          ├─────────────────────┤  │ │     │
│                                  │                     │  │ │     │
│  SAP (hex)                       ├─────────────────────┤  │ │     │
│                                  │                     │  │▼│     │
│                                  └─────────────────────┘  └─┘     │
│                                                                    │
└──────────────────────────────────────────────────────────────────┘
```
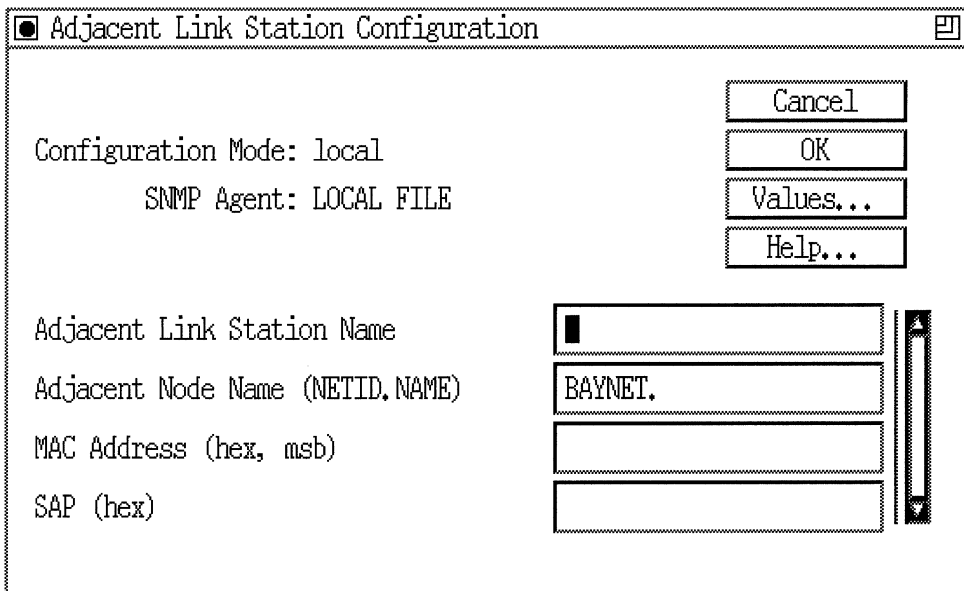
Figure 3-10. Adjacent Link Station Configuration Window

4. Enter the Adjacent Link Station Name, Adjacent Node Name, MAC Address, and SAP parameters. If you configuring SDLC, the SDLC Address parameter appears instead of the Port MAC address parameter. If you are configuring Frame Relay on an LLC2 interface, the DLCI parameter appears in the Port Configuration window.

5. Click on the OK button to save your entries to the configuration file.

   The APPN Adjacent Link Station List window (Figure 3-8) reappears immediately after you click on the OK button.

A description of the parameters shown on the Adjacent Link Station Configuration window follows.

Parameter:	**Adjacent Link Station Name**
Default:	None
Options:	Any name with up to 8 uppercase alphabetic characters
Function:	Specifies a unique name for the link station (control point) in the adjacent node. This name differentiates this link station from other defined link stations.
Instructions:	Specify the link station name with up to 8 uppercase characters. Do not specify numbers in the name.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.3

Parameter: **Adjacent Node Name**

Default: Configuration Manager uses the local NETID for the NETID portion of the Adjacent Node Name parameter. You can change the name if the adjacent node had a different NETID.

Options: Any valid name with up to 17 characters in the format <NETID.CPNAME>, where NETID is the unique network name with up to 8 characters followed by a period, and CPNAME is the control point name with up to 8 characters.

Function: The Adjacent Node Name parameter identifies the user-specified name of the network and the adjacent node name.

Instructions: Enter the adjacent node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only, starting with an alphabetic characters. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, APPNNODE.CPONE is a valid entry for the Adjacent Node Name parameter.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.4.1.6

Parameter: **MAC Address**

Default: None

Options: Any unique 48-bit 12-digit hexadecimal MAC-level address

Function: Specifies a unique MAC-level address for this port connecting the adjacent link station.

Instructions: Enter a 12-digit hexadecimal MAC-level address in MSB non-canonical format.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.4.1.27

Parameter: **SAP (hex)**

Default: None

Options: Any unique service access point (SAP) 2-digit hexadecimal value

Function: Specifies a service access point (SAP) address that lets multiple applications and protocol entities in a single computer share a MAC address.

Instructions: Enter a 2-digit hexadecimal value.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.4.1.27

Editing the Advanced Adjacent Link Station Parameters

To edit the APPN Advanced Adjacent Link Station parameters, display the APPN Adjacent Link Station List window (Figure 3-8) and proceed as follows:

1. Click on the Advanced button. The APPN Adjacent Link Station window appears (Figure 3-11).

```
┌─────────────────────────────────────────────────────────────────┐
│ ● APPN Adjacent Link Station                                  ▣  │
│                                                                   │
│                                        ┌──────────────┐           │
│                                        │    Cancel    │           │
│   Configuration Mode: local            ├──────────────┤           │
│             SNMP Agent: LOCAL FILE     │      OK      │           │
│                                        ├──────────────┤           │
│                                        │   Values...  │           │
│                                        ├──────────────┤           │
│                                        │    Help...   │           │
│                                        └──────────────┘           │
│                                                                   │
│   Limited Resource TG             ┌──────────────────────┐ ▲     │
│                                   │ NO                   │ █     │
│   Down-level Adjacent Node        ┌──────────────────────┐ █     │
│                                   │ NO                   │ █     │
│   Adjacent Node Block Number      ┌──────────────────────┐ █     │
│                                   │                      │ █     │
│   Adjacent Node ID Number         ┌──────────────────────┐ █     │
│                                   │                      │ █     │
│   CP-CP Session Support           ┌──────────────────────┐ █     │
│                                   │ YES                  │ █     │
│   Automatic Activation            ┌──────────────────────┐ █     │
│                                   │                      │ █     │
│   Use Default TG characteristics  ┌──────────────────────┐ █     │
│                                   │ YES                  │ █     │
│   Effective Capacity              ┌──────────────────────┐ █     │
│                                   │                      │ █     │
│   Connection Cost                 ┌──────────────────────┐ █     │
│                                   │                      │ █     │
│   Byte Cost                       ┌──────────────────────┐ ▼     │
│                                   │                      │       │
└─────────────────────────────────────────────────────────────────┘
```
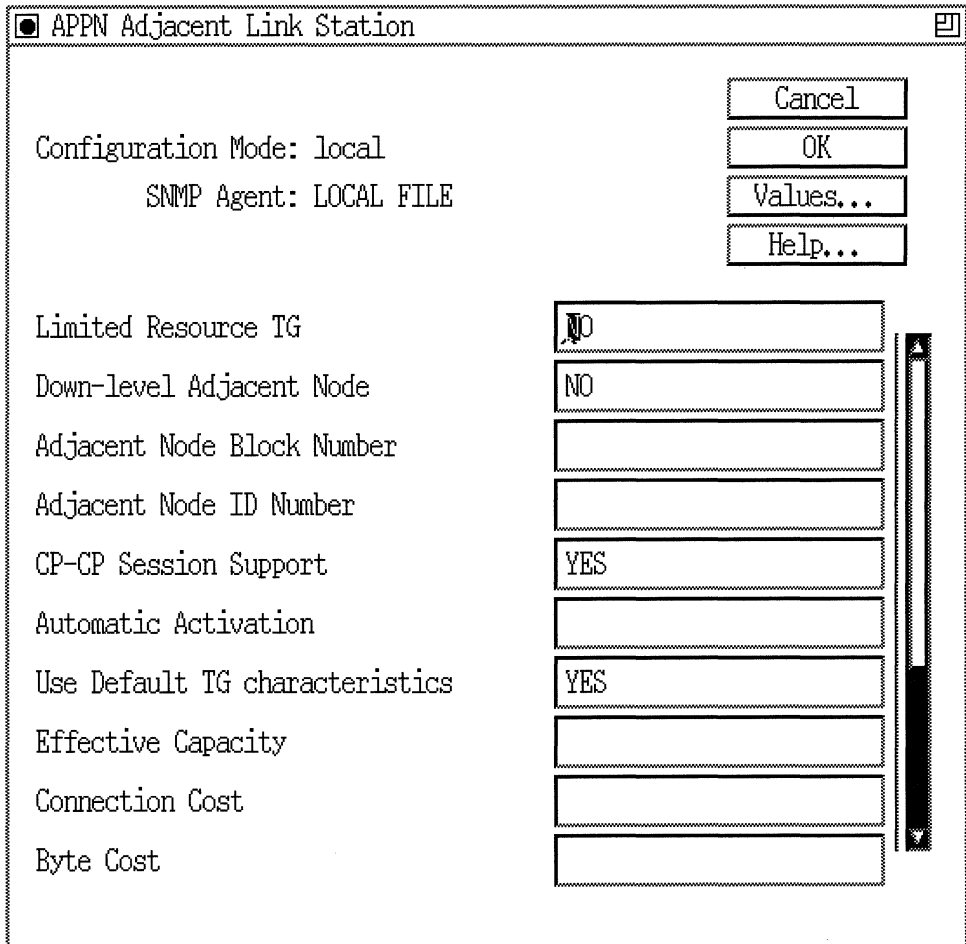
Figure 3-11. APPN Adjacent Link Station Window

2. Click on each parameter value that you want to change, then enter a new value.

3. Click on the OK button to save your changes and exit the APPN Connection window.

A description of the parameters shown on the APPN Adjacent Link Station window follows.

Parameter:	**Limited Resource TG**
Default:	No
Options:	Yes | No
Function:	Specifies whether the adjacent link station is classified as limited resources. If you specify Yes, the transmission group to the adjacent link station is deactivated when the number of active sessions drops to zero.
Instructions:	Click on Values and specify Yes or No.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.8

Parameter:	**Down-level Adjacent Node**
Default:	No
Options:	Yes | No
Function:	Specifies whether the adjacent link station will be used for connections to down-level partners.
Instructions:	Click on Values and specify Yes or No.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.9

Parameter:	**Adjacent Node Block Number**
Default:	None
Options:	None
Function:	The Adjacent Node Block Number parameter is a unique hexadecimal value that identifies the APPN product in this adjacent node The number is the first three digits of the node ID.
Instructions:	Accept the default value.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.10

Parameter:	**Adjacent Node ID Number**
Default:	None
Options:	Optional: if specified, a valid string of 5 hexadecimal digits (0 to 9, A,B,C,D,E,F)
Function:	The local ID number identifies the local APPN adjacent node and is included in APPN alerts and exchange identifications (XIDs). These five digits are combined with the 3-digit block number to form a unique XID node identification for the adjacent node. Node identifications are exchanged between the APPN network node and the adjacent node when the nodes are establishing a connection.
Instructions:	Enter 5 hexadecimal digits.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.11

Parameter:	**CP-CP Session Support**
Default:	Yes
Options:	Yes | No
Function:	Specifies whether the adjacent link station supports control point sessions (CP-CP). APPN nodes (network nodes and end nodes) that support control points can communicate, register, and share network resources. The CP-CP Session Support parameter can reduce traffic (if you specify No) across the TG.
Instructions:	Click on Values and select Yes or No.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.12

Parameter:	**Automatic Activation**
Default:	Disable
Options:	Enable | Disable
Function:	Specifies whether APNN should automatically activate the link to the adjacent link station when a session is established.
Instructions:	If the CP-CP Session Support parameter is Yes, then this parameter is not modifiable. Otherwise, specify Enable to automatically activate the link when there is a session to the adjacent link station.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.24

Parameter:	**Use Default TG Characteristics**
Default:	No
Options:	Yes | No
Function:	Specifies whether the default transmission group (TG) characteristics should be used on the port connecting the adjacent link station, or if the configured TG characteristics should be used. The configurable TG characteristics are: Effective Capacity, Connection Cost, Byte Cost, Security, Delay, User 1, User 2, and User 3.
Instructions:	Click on Values and specify Yes or No.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.26

Parameter:	**Effective Capacity**
Default:	133
Options:	24 (Capacity: 1200)
	32 (Capacity: 2400)
	40 (Capacity: 4800)
	44 (Capacity: 7200)
	48 (Capacity: 9600)
	52 (Capacity: 14400)
	56 (Capacity: 19200)
	66 (Capacity: 48000)
	67 (Capacity: 56000)
	69 (Capacity: 64000)
	117 (Capacity: 4M)
	128 (Capacity: 10M)
	133 (Capacity: 16M)
	255 (Capacity: Maximum)
Function:	The Effective Capacity represents the highest bit-transmission rate allowed on the TG to adjacent link stations on this port. The effective capacity is derived from the link bandwidth.
Instructions:	Click on Values and select a number that reflects the link bandwidth.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.15

Parameter:	**Connection Cost**
Default:	128
Range:	0 to 255
Function:	Specifies the relative cost (per connect time) of using a transmission group (TG) to the adjacent link station on this port. A value of 0 indicates no cost, and a value of 255 indicates maximum cost. The cost per connect time is typically based on the applicable tariffs for the transmission facility that this TG uses.
Instructions:	Enter a number in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.16

Parameter:	**Byte Cost**
Default:	128
Range:	0 to 255 inclusive
Function:	Specifies the relative cost of transmitting a byte over this transmission group (TG) to an adjacent link station on this port. A value of 0 indicates no cost, and a value of 255 indicates maximum cost.
Instructions:	Enter a number in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.17

Parameter: **Security**

Default: 1

Options: 1 (Non-secure)
32 (Public-Switched)
64 (Underground)
128 (Conduit)
160 (Encrypted)
192 (Guarded radiation)
255 (Maximum)

Function: Specifies the security level of the transmission group (TG) to the adjacent link station on this port.

Instructions: Enter a value in the range 1 to 255; use the common definitions indicated under Options.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.4.1.18

Parameter: **Delay**

Default: 0

Options: 76 (Negligible)
113 (Terrestrial)
145 (Packet)
153 (Long)
255 (Maximum)

Function: Indicates the propagation delay or the relative amount of time that it takes for a signal to travel the length of a transmission group (TG) to the adjacent link station on this port.

Instructions: Enter a value in the range 0 to 255; use the common definitions indicated under Options.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.4.1.19

Parameter:	**Implicit User-Defined 1**
Default:	128
Range:	0 to 255
Function:	Specifies the first user-defined transmission group characteristic using this link station.
Instructions:	Enter a value in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.20

Parameter:	**Implicit User-Defined 2**
Default:	128
Range:	0 to 255
Function:	Specifies the second user-defined transmission group characteristic using this link station.
Instructions:	Enter a value in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.21

Parameter:	**Implicit User-Defined 3**
Default:	128
Range:	0 to 255
Function:	Specifies the third user-defined transmission group characteristic using this link station.
Instructions:	Enter a value in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.4.1.22

Editing APPN Connection Networks

An APPN connection network allows direct connectivity between any pair of link stations. Direct connectivity avoids session traffic being routed through intermediate network nodes. Connection networks require link definitions at a network node for any nodes with a direct connection.

To edit APPN Connections Networks parameters, begin at the Wellfleet Configuration Manager window (Figure 3-1) and proceed as follows:

1. Select the Protocols→APPN→ Connection Networks option.

   The APPN Connection Networks window appears (Figure 3-12).
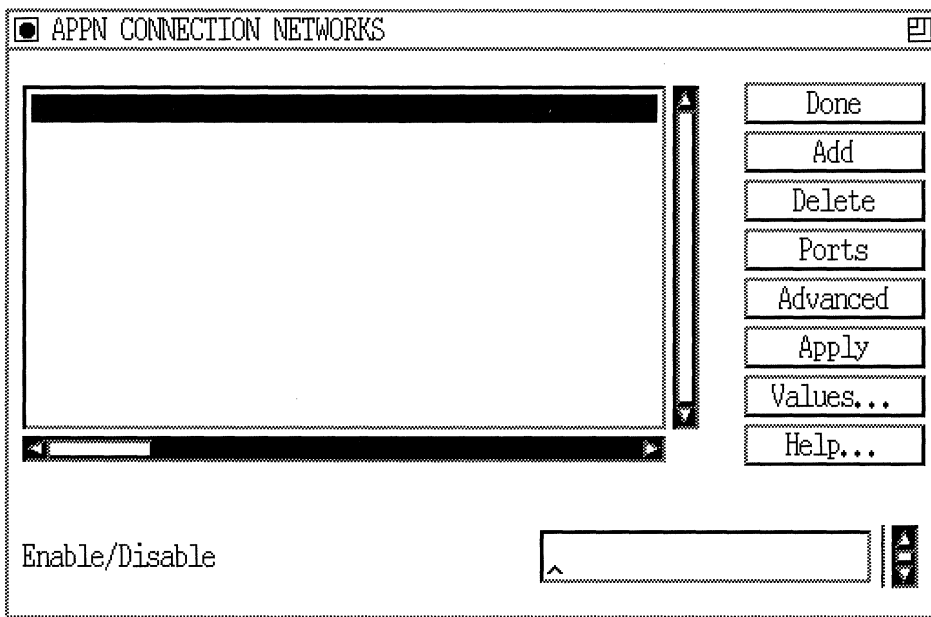
Figure 3-12. APPN Connection Networks Window

2. If the window appears without any connection networks in the list, click on Add and go to the section "Adding APPN Connection Networks" to define one or more new connection networks. If the window displays one or more connection networks, you can change the setting of the Enable/Disable parameter to activate or deactivate an existing connection network.

   If you want to delete a connection network listed in this window, select/highlight the connection network name that you want to delete and click on the Delete button (described in the next section).

   If you want to add and configure the ports associated with the connection networks listed in the window, click on Ports and go to the section, "Editing the APPN Connection Networks Ports." To edit the advanced connection networks parameters, click on the Advanced button and go the section, "Editing the Advanced Adjacent Link Station Parameters."

3. Click on the Apply button to save your changes.

4. Click on the Done button to exit the APPN Connection Networks window.

The APPN Connection Networks window contains the following parameter.

Parameter: **Enable/Disable**

Default: Enable

Options: Enable | Disable

Function: Enables or disables APPN routing on the selected connection network.

Enable – Initializes routing on the selected APPN connection network. Use the Enable setting also to initialize routing on an existing connection networks earlier disabled.

Disable – Brings down routing on the APPN connection network.

Instructions: Select Disable only if you want to disable APPN routing over this connection network.

Select Enable if you want to re-enable APPN routing over this connection network.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.6.1.2

Deleting APPN Connection Networks

If you want to delete a connection network from the APPN Connection Networks window (Figure 3-12), select the network name to highlight it, then click on the Delete button. The system software deletes the interface entry from the APPN configuration.

Adding APPN Connection Networks

To add a connection network to an APPN configuration, display the APPN Connection Networks window (Figure 3-12) and proceed as follows:

1. Click on the Add button. The Connection Network Parameters window appears (Figure 3-13).

2. Enter the Connection Network Name and the Connection Network Port Name parameters.

3. Click on the OK button to save your entries to the configuration file.

   The APPN Connection Networks window (Figure 3-12) reappears immediately after you click on the OK button.

```
┌──────────────────────────────────────────────────────────────┐
│ ◉ Connection Network Parameters ▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨    🖳 │
├──────────────────────────────────────────────────────────────┤
│                                            ┌──────────────┐    │
│                                            │    Cancel    │    │
│    Configuration Mode: local               ├──────────────┤    │
│                                            │      OK      │    │
│           SNMP Agent: LOCAL FILE           ├──────────────┤    │
│                                            │   Values...  │    │
│                                            ├──────────────┤    │
│                                            │    Help...   │    │
│                                            └──────────────┘    │
│                                                                │
│  Connection Network Name (NETID.NAME)  ┌─────────────────┐ ┌─┐│
│                                        │ BAYNET.         │ │▲││
│                                        └─────────────────┘ │ ││
│  Connection Network Port Name          ┌─────────────────┐ │ ││
│                                        │                 │ │▼││
│                                        └─────────────────┘ └─┘│
│                                                                │
└──────────────────────────────────────────────────────────────┘
```
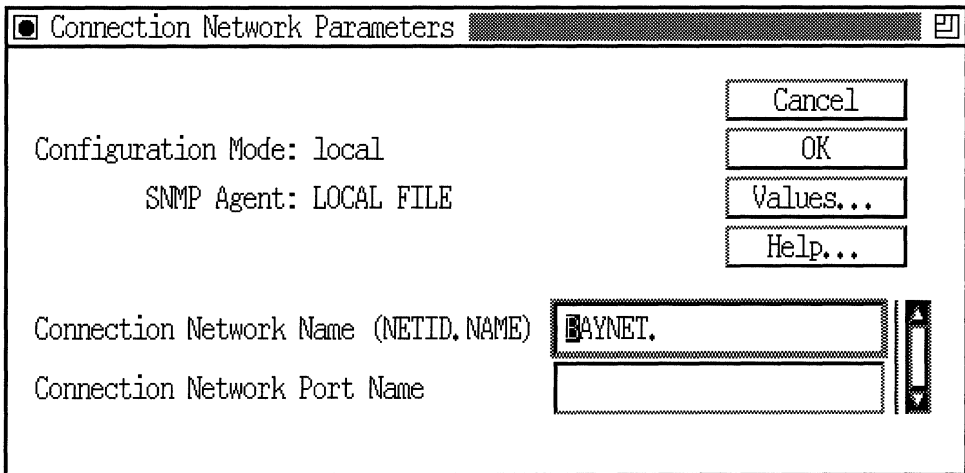
Figure 3-13. Connection Network Parameters Window

A description of the parameters shown on the Connection Network Parameters window follows.

Parameter:	**Connection Network Name**
Default:	None
Options:	Any valid name with up to 17 characters in the format <NETID.CPNAME>, where NETID is the unique network name with up to 8 characters followed by a period, and CPNAME is any name with up to 8 characters
Function:	The Connection Network Name parameter identifies the arbitrary user-specified name of the connection network. By default, the NETID portion of the network name is the previously configured Local Node Name NETID parameter, as specified on the Edit APPN Global Parameters window (Figure 3-2).
Instructions:	Following the default NETID name and the period(.), enter any name with up to 8 characters. Names must be specified in uppercase characters only, starting with an alphabetic character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, APPNNODE.THREE is a valid entry for the Connection Network Name parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.3

Parameter:	**Connection Network Port Name**
Default:	None
Options:	Up to 8 alphanumeric uppercase characters
Function:	Specifies the name of the port for the connection network.
Instructions:	Enter up to 8 alphanumeric uppercase characters with no blank spaces (leading, trailing, or embedded).
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.7.1.4

Editing APPN Connection Network Ports

The APPN Connection Networks window (Figure 3-12) allows you to enable or disable connection network ports, add and delete ports on existing connection networks, and edit advanced connection network parameters. From the APPN Connection Networks window, proceed as follows:

1. Select the Ports option to display the APPN Connection Network Ports window (Figure 3-14).
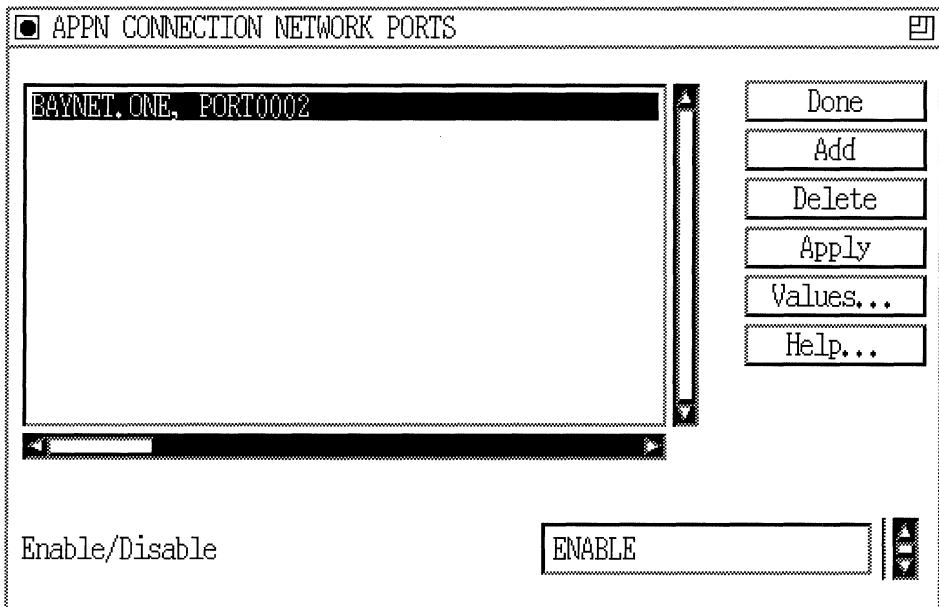
Figure 3-14. APPN Connection Network Ports Window

2. Highlight the port you want to modify. Change the setting of the Enable/Disable parameter if necessary. (Refer to the Enable/Disable parameter described in this section.)

   If you want to delete a port listed in this window, select/highlight the port that you want to delete and click on the Delete button (described in the next section).

If you want to add additional ports to a connection network, click on the Add button and go to the section "Adding APPN Connection Network Ports."

3. If you are finished with this window, click on the Apply button to save your changes.

4. Click on the Done button to exit the APPN Connection Network Ports window.

Parameter:	**Enable/Disable**
Default:	Enable
Options:	Enable | Disable
Function:	Enables or disables APPN routing on this connection network port.
	Enable – Initializes the selected APPN connection network port. Use the Enable setting also to initialize an existing port earlier disabled.
	Disable – Forces the APPN connection network port into the "down" (inoperative) state.
Instructions:	Select Disable only if you want to disable APPN routing over this connection network port.
	Select Enable if you want to re-enable APPN routing over this connection network port.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.7.1.2

Deleting APPN Connection Network Ports

If you want to delete a port from a connection network on the APPN Connection Network Ports window (Figure 3-14), select the port to highlight it, then click on the Delete button. The system software deletes the entry from the APPN configuration.

Adding APPN Connection Network Ports

To add a port to an APPN connection network, display the APPN Connection Network Ports window (Figure 3-14) and proceed as follows:

1. Click on the Add button. The Connection Network Port Parameters window appears (Figure 3-15).

```
┌────────────────────────────────────────────────────────────────────┐
│ ◉ Connection Network Port Parameters                            ⊡  │
│ ┌──────────────────────────────────────────────────────────────┐   │
│ │                                            ┌──────────────┐    │
│ │                                            │   Cancel     │    │
│ │   Configuration Mode: local                ├──────────────┤    │
│ │          SNMP Agent: LOCAL FILE            │     OK       │    │
│ │                                            ├──────────────┤    │
│ │                                            │  Values...   │    │
│ │                                            ├──────────────┤    │
│ │                                            │   Help...    │    │
│ │                                            └──────────────┘    │
│ │                                                               │
│ │   Connection Network Port Name    ┌──────────────────┐  ┌─┐  │
│ │                                   │ PORT0003█        │  │▲│  │
│ │                                   └──────────────────┘  │▼│  │
│ └──────────────────────────────────────────────────────────────┘   │
└────────────────────────────────────────────────────────────────────┘
```
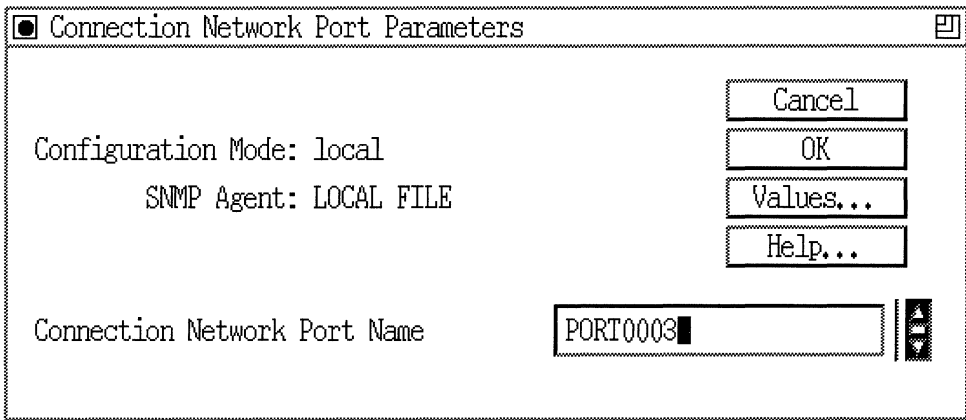
Figure 3-15. Connection Network Port Parameters Window

2. Enter a Connection Network Port Name.

3. Click on the OK button to save the port name to the configuration file.

   The APPN Connection Network Ports window (Figure 3-14) reappears immediately after you click on the OK button.

Parameter:	**Connection Network Port Name**
Default:	None
Options:	Up to 8 alphanumeric uppercase characters
Function:	Specifies the name of the new port for the connection network.
Instructions:	Enter up to 8 alphanumeric uppercase characters with no blank spaces (leading, trailing, or embedded).
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.7.1.4

Editing the APPN Advanced Connection Networks Parameters

To edit the APPN Advanced Connection Network parameters, display the APPN Connection Networks window (Figure 3-12) and proceed as follows:

1. Select/highlight the connection network that you want to edit and click on the Advanced button. The APPN Connection Network Advanced Parameters window appears (Figure 3-16). The connection network name that you selected appears in the title bar.

```
┌─────────────────────────────────────────────────────────────────────┐
│ ● BAYNET.ONE Advanced Parameters ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓  ⊟ │
│                                                                       │
│                                              ┌──────────────┐         │
│                                              │    Cancel     │         │
│   Configuration Mode: local                  ├──────────────┤         │
│                                              │     OK        │         │
│          SNMP Agent: LOCAL FILE              ├──────────────┤         │
│                                              │   Values...   │         │
│                                              ├──────────────┤         │
│                                              │    Help...    │         │
│                                              └──────────────┘         │
│                                                                       │
│   Effective Capacity              ┌─────────────────────────┐ ▲      │
│                                   │ ▌33                      │ █      │
│   Connection Cost                 ┌─────────────────────────┐ █      │
│                                   │ 128                      │ █      │
│   Byte Cost                       ┌─────────────────────────┐ █      │
│                                   │ 128                      │ █      │
│   Security                        ┌─────────────────────────┐ █      │
│                                   │ 1                        │ █      │
│   Delay                           ┌─────────────────────────┐ █      │
│                                   │ 0                        │ █      │
│   User-Defined 1                  ┌─────────────────────────┐ █      │
│                                   │ 128                      │ █      │
│   User-Defined 2                  ┌─────────────────────────┐ █      │
│                                   │ 128                      │ █      │
│   User-Defined 3                  ┌─────────────────────────┐ ▼      │
│                                   │ 128                      │        │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```
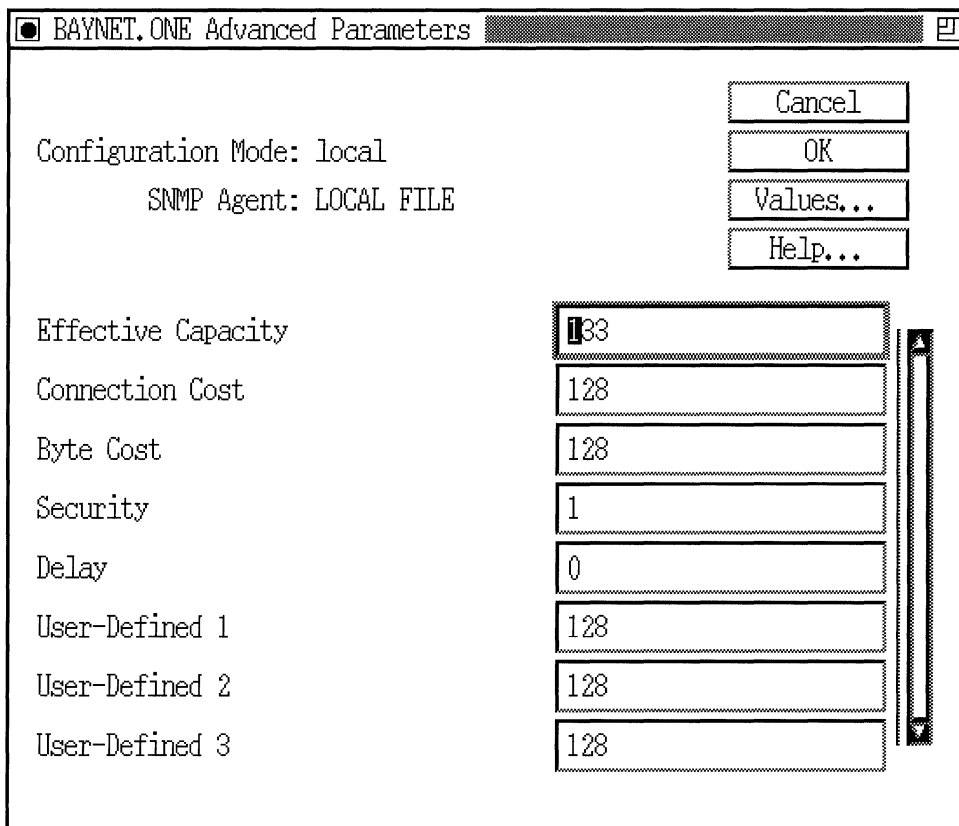
Figure 3-16. APPN Connection Network Advanced Parameters Window

2. Click on each parameter value that you want to change, then enter a new value.

3. Click on the OK button to save your changes and exit the Connection Network Advanced Parameters window.

Parameter: **Effective Capacity**

Default: 133

Options: 24 (Capacity: 1200)
32 (Capacity: 2400)
40 (Capacity: 4800)
44 (Capacity: 7200)
48 (Capacity: 9600)
52 (Capacity: 14400)
56 (Capacity: 19200)
66 (Capacity: 48000)
67 (Capacity: 56000)
69 (Capacity: 64000)
117 (Capacity: 4M)
128 (Capacity: 10M)
133 (Capacity: 16M)
255 (Capacity: Maximum)

Function: The Effective Capacity represents the highest bit transmission rate value allowed on connection network transmission groups (TGs) over configured connection network ports. The Effective Capacity is derived from the link bandwidth.

Instructions: Click on Values and select a number that reflects the link bandwidth.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.1.6.1.5

Parameter:	**Connection Cost**
Default:	128
Range:	0 to 255
Function:	Specifies the relative cost (per connect time) of using a connection network transmission group (TG) over configured connection network ports. A value of 0 indicates no cost, and a value of 255 indicates maximum cost. The cost per connect time is typically based on the applicable tariffs for the transmission facility that this TG uses.
Instructions:	Enter a number in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.6

Parameter:	**Byte Cost**
Default:	128
Range:	0 to 255
Function:	Specifies the relative cost of transmitting a byte over this connection network transmission group (TG) using configured connection network ports. A value of 0 indicates no cost, and a value of 255 indicates maximum cost.
Instructions:	Enter a number in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.7

Parameter:	**Security**
Default:	1
Options:	1 (Non-secure)
	32 (Public-Switched)
	64 (Underground)
	128 (Conduit)
	160 (Encrypted)
	192 (Guarded radiation)
	255 (Maximum)
Function:	Specifies the security level of the connection network transmission group (TG) over configured connection network ports.
Instructions:	Enter a value in the range 1 to 255; use the common definitions indicated under Options.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.8

Parameter:	**Delay**
Default:	0
Options:	76 (Negligible)
	113 (Terrestrial)
	145 (Packet)
	153 (Long)
	255 (Maximum
Function:	Represents the propagation delay or the relative amount of time that it takes for a signal to travel the length of a connection network transmission group (TG) over configured connection network ports.
Instructions:	Enter a value in the range 0 to 255; use the common definitions indicated under Options.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.9

Parameter:	**Implicit User-Defined 1**
Default:	128
Range:	0 to 255
Function:	Specifies the first user-defined transmission group characteristic for this connection network.
Instructions:	Enter a value in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.10

Parameter:	**Implicit User-Defined 2**
Default:	128
Range:	0 to 255
Function:	Specifies the second user-defined transmission group characteristic for this connection network.
Instructions:	Enter a value in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.11

Parameter:	**Implicit User-Defined 3**
Default:	128
Range:	0 to 255
Function:	Specifies the third user-defined transmission group characteristic for this connection network.
Instructions:	Enter a value in the range 0 to 255.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.1.6.1.12

Editing APPN Directory Entries Parameters

APPN directory entries are defined for resources in the network the cannot be dynamically located, such as LUs or a LEN node. Directory entries can be defined so that network searches for commonly used resources are avoided. The directory is hierarchical in structure. For example, to configure directory entries for LUs on an adjacent LEN node, the LEN is first configured as an end node control point (ENCP) with the local NN as the parent. LUs can then be defined with the LEN as the parent.

Directory entries can specify the full name of the resource, or can include an asterisk (*) to indicate a wildcard entry. Wildcard entries can simplify the definition of many similarly-named resources. For example, if a node contains LUs named APPN.LUX1, APPN.LUX2, and so on, a single wildcard entry APPN.LUX* can be used.

To edit APPN directory entry parameters, begin at the Wellfleet Configuration Manager window (Figure 3-1) and proceed as follows:

1. Select the Protocols→APPN→ Directory Entries option.

   The APPN Directory Entries window appears (Figure 3-17). The window displays the qualified LU name(s) of any APPN nodes currently configured for directory services in the local directory database.
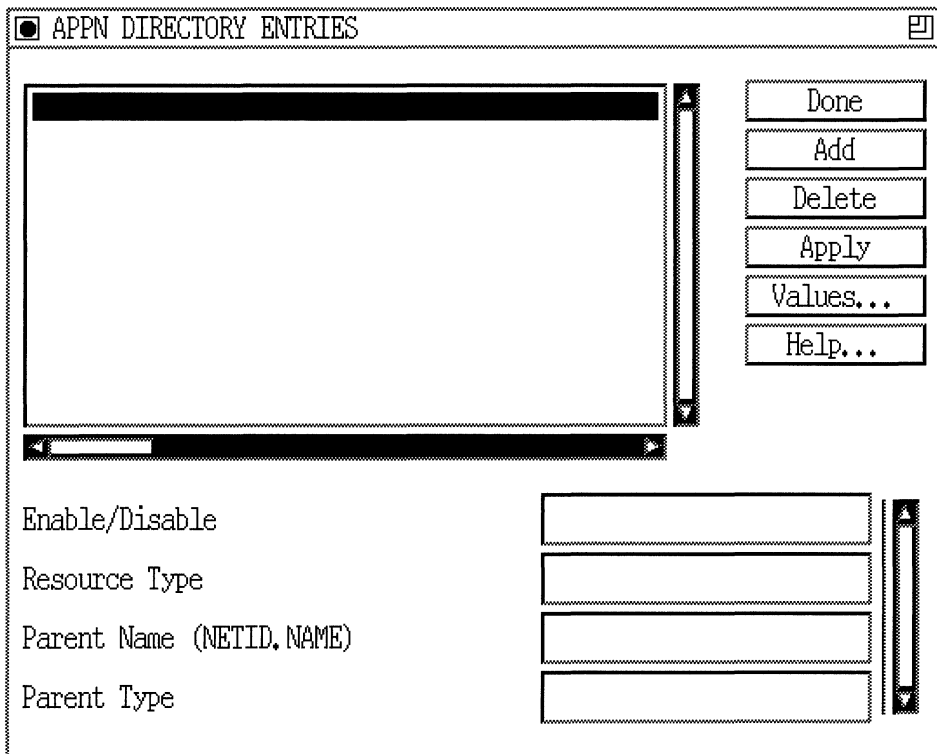
Figure 3-17. APPN Directory Entries Window

2. If the window appears without any APPN resource names, click on Add and refer to "Adding APPN LU Names to Directory Services."

3. If the window contains one or more directory services LU names, you can edit the Enable/Disable, Resource Type, Parent Name, and Parent Type parameters.

    If you want to delete a directory services LU name listed in this window, select/highlight the resource name that you want to delete and click on the Delete button (described in the next section).

4. Click on the Apply button to save your changes.

5. Click on the Done button to exit the APPN Connection Networks window.

A description of the parameters shown on the APPN Directory Entries window follows.

Parameter:	**Enable/Disable**
Default:	Enable
Options:	Enable | Disable
Function:	Enables or disables APPN directory services on the selected LU name.
Instructions:	Select Disable only if you want to disable APPN directory services on this LU.
	Select Enable if you want to re-enable APPN directory services on this LU.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.2

Parameter:	**Resource Type**
Default:	LU (logical unit)
Options:	LU (logical unit) ENCP (end node control point) NNCP (network node control point) Wildcard (*)
Function:	Specifies the type of resource for this directory services entry. With a resource type of LU, the local directory services database contains pointers to the CP name of the node owning the LU and the CP name of the network node server.
Instructions:	Click on Values and select LU, ENCP, NNCP or Wildcard (*). Specify Wildcard to instruct APPN that the entry uses the asterisk (*) wildcard. Refer to the beginning of this section for information on using the wildcard with directory entries.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.4

Parameter:	**Parent Name**
Default:	None
Options:	None
Function:	Specifies the fully qualified APPN node name (NETID.CPNAME) that owns the selected LU name from the list. By default, the NETID portion of the parent name is the previously configured Local Node Name NETID parameter, as specified on the Edit APPN Global Parameters window (Figure 3-2).
Instructions:	Enter the fully qualified APPN node name in the format (NETID.CPNAME). Enter the node name by first specifying up to 8 characters in the unique network name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only, starting with an alphabetic character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, NETWORKA.SYSTEMA is a valid entry for the Parent Name parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.5

Parameter:	**Parent Type**
Default:	ENCP (END Node Control Point)
Options:	NNCP (Network Node Control Point) ENCP (End Node Control Point)
Function:	Specifies the node type of the parent.
Instructions:	Click on Values and specify NNCP or ENCP.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.6

Adding APPN LU Names to Directory Services

To add a qualified LU name to the directory services list, display the APPN Directory Entries window (Figure 3-17) and proceed as follows:

1. Click on the Add button. The Directory Entry Parameters window appears (Figure 3-18).

```
┌─────────────────────────────────────────────────────────────────┐
│ ● Directory Entry Parameters                                 ▣  │
├─────────────────────────────────────────────────────────────────┤
│                                        ┌──────────────┐          │
│                                        │    Cancel    │          │
│   Configuration Mode: local            ├──────────────┤          │
│                                        │      OK      │          │
│         SNMP Agent: LOCAL FILE         ├──────────────┤          │
│                                        │   Values...  │          │
│                                        ├──────────────┤          │
│                                        │    Help...   │          │
│                                        └──────────────┘          │
│                                                                  │
│   Resource Name (NETID.NAME)      ┌──────────────────────┐ ┌─┐  │
│                                   │ BAYNET.              │ │▲│  │
│   Resource Type                   ├──────────────────────┤ ├─┤  │
│                                   │ LU                   │ │ │  │
│   Parent Name (NETID.NAME)        ├──────────────────────┤ │ │  │
│                                   │ BAYNET.              │ │ │  │
│   Parent Type                     ├──────────────────────┤ ├─┤  │
│                                   │                      │ │▼│  │
│                                   └──────────────────────┘ └─┘  │
└─────────────────────────────────────────────────────────────────┘
```

Figure 3-18. Directory Entry Parameters Window

2. Edit the Resource Name and Parent Name parameters.

3. Click on OK to return to the APPN Directory Services window.

Parameter: **Resource Name**

Default: None

Options: None

Function: Specifies the fully qualified name (NETID.CPNAME) of the resource to be added to the local directory. By default, the NETID portion of the name is the previously configured Local Node Name NETID parameter, as specified on the Edit APPN Global Parameters window (Figure 3-2).

Instructions: Enter the fully qualified APPN resource (node or LU) name in the format (NETID.CPNAME). Enter the node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in uppercase characters only, starting with an alphabetic character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, NETWORKA.SYSTEMA is a valid entry for the Parent Name parameter.

Use the asterisk (*) wildcard to indicate a wildcard entry. Refer to beginning of this section for information on using the wildcard with directory entries.

MIB Object ID: 1.3.6.1.4.1.18.3.5.14.4.3.1.3

Parameter:	**Resource Type**
Default:	LU (logical unit)
Options:	LU (logical unit) ENCP (end node control point) NNCP (network node control point) Wildcard (*)
Function:	Specifies the type of resource that this directory entry describes.
Instructions:	Click on Values and select LU, ENCP, NNCP or Wildcard (*). Specify Wildcard to instruct APPN that the entry uses the asterisk (*) wildcard. Refer to the beginning of this section for information on using the wildcard with directory entries.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.4

Parameter:	**Parent Name**
Default:	None
Options:	None
Function:	Specifies the fully qualified APPN node name (NETID.CPNAME) that owns the resource being defined. By default, the NETID portion of the name is the previously configured Local Node Name NETID parameter, as specified on the Edit APPN Global Parameters window (Figure 3-2).
Instructions:	Enter the fully qualified APPN node name in the format (NETID.CPNAME). Enter the node name by first specifying up to 8 characters in the network ID name, type a period, then enter a control point name with up to 8 characters. Names must be specified in upper case characters only, starting with an alphabetic character. Blank spaces (leading, trailing, and embedded) are not allowed in the node name. For example, NETWORKA.SYSTEMA is a valid entry for the Parent Name parameter.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.5

Parameter:	**Parent Type**
Default:	ENCP (END Node Control Point)
Options:	NNCP (Network Node Control Point) ENCP (End Node Control Point)
Function:	Specifies the parent node type owning this resource.
Instructions:	Click on Values and specify NNCP or ENCP.
MIB Object ID:	1.3.6.1.4.1.18.3.5.14.4.3.1.6

Index

T

Target Pacing Count parameter, 3-40

Token Ring, 1-2

Topology and route services, 1-10
  overview, 1-11 to 1-12

Total Link Activation Limits parameter,
  3-28

TRS Route Tree Cache Size parameter,
  3-11

TRS Route Tree Cache Usage Limit
  parameter, 3-11

U

Use Default TG Characteristics parameter,
  3-49

V

Virtual Ring Number parameter, 2-15

W

Wellfleet Configuration Manager window,
  2-2, 3-2

wildcards
  using with directory entries, 3-68

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