Pipeline 25-Px 4.6C Addendum

Number 1

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To install and configure your Pipeline, read the documentation that came with your product. Since your documentation was published, the Pipeline has been enhanced with new features. This Addendum contains these sections:

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A S C E N D

Names up to 72 characters long are now supported.

Interface support for MP call management

PPP connections are single-channel connections that connect to any other device running PPP. MP and MP+ are enhancements to PPP for supporting multi-channel links. In previous releases, if a connection was set up for "MPP," the Pipeline first requested MP+. If the other side of the connection didn't support MP+, the Pipeline would then request MP. If that protocol was also refused, PPP would be used instead.

In this release of the Ascend software, you can explicitly configure the RFC 1717 MP option. MP supports multi-channel links, but not DBA (dynamic bandwidth allocation). The base channel count is used to determine the number of calls to place, and the number of channels used for that connection does not change. In addition, MP requires that all channels in the connection share the same phone number (that is, the channels on the answering side of the connection must be in a hunt group).

These are the new parameters for configuring MP connections:

Location	Parameters
Ethernet→Connection→ <i>any profile</i> (Connection Profile)	Encaps=MP
Ethernet→Answer→Encaps (Answer Profile)	MP=Yes

Status display for voice calls

The 10-100 status window for the Pipeline or Pipeline 75 shows whether a voice call is on hold, as described in the following section.

Monitoring telephone connections

The status menu labeled 10-100 shows whether either or both of the B channels for your ISDN line is being used. An asterisk (*) to the right of B1 or B2 indicates that the channel used either for a voice or data call. The letter h indicates that a voice call is on hold. The letter D indicates that a call is being dialed.

In this example, B1—the first B channel—is in use.

10-100 1 Link D B1 * B2

In this example, B2—the second B channel—has one voice call on hold as well as an active voice call.

10-100	1				
Link	D				
B1					
в2	h	*			

Call conferencing

If your ISDN service includes the Call Conferencing feature, you can use the Pipeline to establish conference calls. Conference calls allow more than two callers to converse at the same time. If the Call Conferencing feature is available from your telephone company, it allows either three-way conference calls (which include you and up to two other callers) or six-way conference calls (which include you and up to five other callers).

Using call conferencing

To establish a conference call, follow these steps:

- 1 Call a person to include in the conference, or have that person call you.
- 2 Put the call on hold by quickly pressing and releasing your telephone's switchhook (the button that is depressed when you hang up the telephone).
- 3 Call another person to include in the conference, or have that person call you.
- 4 Add anyone on hold to the call by quickly pressing and releasing your telephone's switchhook twice.
- 5 To add more callers to the conference call, repeat steps 2-4.

A caller normally leaves a conference call by hanging up. You can also drop the most recently added caller to a conference call by following this step:

1 Quickly press and release your telephone's switchhook twice.

WAN LED lit for voice calls

The WAN LED on the front of the Pipeline and Pipeline 75 is lit when the ISDN line is being used for a voice or data call.

New parameters and default value for the Pipeline

Five new parameters, Data Svc, Idle, Link Comp, Max Ch Count, and Secondary Dial #, have been added to the Pipeline. Here is the new Setup menu for the Pipeline:

Edit
Configure
Setup
>Switch Type=AT&T/P-T-
D
My Num A=
$M_{\rm Y}$ Num $B=N/A$
SDID $A - N/A$
SPID A-N/A
Data Ugage-N/A
Data Usage-N/A
Phone 2 Usage=N/A
Phone 2 Usage=N/A
Phone Num Binding=N/A
My Name=
Dial #=
Secondary Dial
#=
Send Auth=PAP
Send PW=
My Addr=181.100.100.99/16
Plug and Play=No
Data Svc=64K
Link Comp=None
Idle=120
Max Ch Count=2

In addition, the default value of the My Addr parameter is now 181.100.100.99/16.

Parameter reference

Data Svc

Description: This parameter specifies the type and speed of the connection your Pipeline makes when it calls a network service provider. In most cases, this is either a 64Kbps or a 56Kbps data connection.

To make a 64Kbps data connection, all the telephone companies used for the connection must provide 64Kbps service. If any of them provide only 56Kbps service, you must specify a 56Kbps connection.

In a few cases, it is necessary to use a voice connection to carry digital data. This technique, known as Data over Voice (DOV), also can be used when voice calls are less expensive than data calls.

Usage: Press Enter to cycle through the choices.

- 64K specifies a 64Kbps data connection.
- Voice specifies a Data over Voice (DOV) connection, which uses a voice call to carry digital data.

- 56KR specifies a restricted 56Kbps data connection.
- 56K specifies a 56Kbps data connection.

Note: Although 56KR service carries data at the same rate as 56K service, 56KR and 56K are different types of service. If your network service provider requires 56KR service, Data Svc must be set to 56KR. 64K is the default. **Dependencies:** Data over Voice (DOV)—the data transmission technique used when the value of Data Svc is Voice—is often less reliable than a standard data connection. To avoid loss or corruption of data when using Data over Voice, do the following: Make sure that the connection carries only digital data. Make sure that the phone company is not using any intervening loss plans to economize on voice calls. Do not use echo cancellation; techniques for removing echoes from analog calls can corrupt data The speed of DOV connections is limited to 56Kbps. If the Pipeline requests a type of service that is unavailable, it cannot connect to the network service provider. The speed of a data connection is the speed, in kilobits per second, specified by this parameter (56Kbps if the value is Voice) multiplied by the number of B channels (either 1 or 2) used for the connection. Idle **Description:** This parameter specifies the number of seconds the Pipeline waits before ending a call when the ISDN line is not being used. **Usage:** Press Enter to open a text field and then type a number between 0 and 65535. If you specify 0 (zero), the does not enforce a limit; an idle connection stays open indefinitely. When you're done, press Enter to close the text field. 120 is the default. Link Comp **Description:** This parameter specifies whether to use data compression when connecting to the remote network. This parameter is N/A if the Pipeline does not have the optional data compression hardware module. **Usage:** Press Enter to cycle through the choices. Stac specifies the STACKER LZS data compression technique. MS-Stac specifies the Microsoft LZS Coherency Compression technique used by Windows95. Caution: Both ISDN devices must specify the same type of compression. If not, compression may not occur or, in some cases, data may not be received. None turns off data compression.

Stac is the default.

Dependencies: For compression to work, both the Pipeline and the ISDN device to which it connects must be configured for compression and must specify the same type of compression.

Max Ch Count Description: This specifies the maximum number of B channels to be used for a data call.

> Usage: Press Enter to open a text field, and then type 1 or 2. When you're done, press Enter to close the text field.

1 is the default.

My Addr **Description:** This parameter specifies the local IP address of the Pipeline. This is a private address that is visible only to the computer connected to the Pipeline, not to the network to which you connect.

> **Usage:** You do not need to change the default value of this parameter unless it is impossible to change the IP address of the computer connected to the Pipeline.

If you need to change the local IP address of the Pipeline, press Enter to open a text field and then type the address. The address must consist of four number between 100 and 255 that are separated by periods, as in this example:

100.222.111.101

When you're done entering the address, press Enter to close the text field.

Dependencies: When the Pipeline connects your computer to the network, the network service provider assigns an IP address to your computer. This address is different from the local IP address of the computer, and it is used only while you are connected to the network. When you receive data from the network, the Pipeline automatically converts this address to the local address of your computer. When you send data to the network, the Pipeline automatically converts the local address of your computer to the address assigned by the network service provider.

For the Pipeline and the computer to communicate, they must be on the same subnet. An easy way to ensure this is to make the last of the four numbers of their local addresses different by only one. For example, if the local IP address of the computer is

100.222.111.101

you can ensure that the Pipeline is on the same subnet by setting its local address to

100.222.111.102

Secondary Description: This parameter specifies a second telephone number for connecting to the network service provider. This number is dialed automatically if the Pipeline could not connect using the telephone number specified by the Dial # parameter.

> Usage: Press Enter to open a text field and then type the telephone number. When you're done, press Enter to close the text field.

See Also: Dial #

Dial #

Support for Plug and Play

Plug and Play is a feature of the Microsoft Windows 95 and Windows NT operating systems that makes it easier to add hardware components to a computer. The operating system detects when a hardware component that supports Plug and Play is added and automatically installs and configures the necessary drivers.

The Pipeline can support Plug and Play. If you are using Windows 95 or Windows NT, connecting to a remote site is simple: you configure the Pipeline for the site and then use a program that connects to the site. Windows and the Pipeline take care of the rest.

Using Plug and Play

To connect the Pipeline using Plug and Play, follow these steps:

- 1 Install the Pipeline, which includes connecting its ISDN, Ethernet, and serial cables, as described in the *Pipeline 25-Px User's Guide*.
- 2 Using the Pipeline configuration software, enter the parameter values for the remote site.
- 3 Set the value of the Plug and Play parameter to Yes.
- 4 Use a program that connects to the remote site.

The Windows networking software is configured automatically the first time you try to connect to the remote site. For example, if your Pipeline is configured to connect to The Microsoft Network, the Windows networking software is configured for you when you double-click The Microsoft Network icon.

Parameter reference

Plug and PlayDescription: This parameter controls whether Plug and Play support for Microsoft Windows95 and Windows NT is enabled.

Usage: Press Enter to cycle through the choices.

Yes specifies that Plug and Play support is enabled.

When the value of Plug and Play is Yes, Windows 95 or Windows NT detects when the Pipeline is connected and automatically configures its networking software to connect to the remote site. If the other Pipeline parameter values are correct, little or no manual configuration of the Windows networking software is required.

• No specifies that Plug and Play support is disabled. No is the default.

Dependencies: When the Pipeline is connected to a computer running Microsoft Windows 95 or Windows NT and the value of the Plug and Play parameter is Yes, the following occurs:

• The computer is assigned an Internet Protocol (IP) address whose value is one greater than the IP address of the Pipeline.

For example, if the IP address of the Pipeline is 200.200.200.100, the IP address of the computer is 200.200.200.101.

- The computer is assigned the same subnet mask as the Pipeline.
- The Pipeline becomes the default IP gateway.

• The Pipeline becomes a proxy DNS (Domain Name Service) server.

This means that DNS requests are sent to the Pipeline, which forwards them to the domain name servers, if any, that it finds at the remote site, receives the results, and then passes the results to the computer.

Parameter Location: Configure profile

See Also: My Addr

Displaying the software load name

In this release of the Ascend software, the name of the software load is displayed in the Sys Options status window and in fatal error messages. The load name is an important aid to troubleshooting error conditions.

Ascend software releases are distributed in software *loads*, which vary according to the functionality and target platform for the binary. For example, these are some of the loads available for the current release:

Load name	Platform and functionality
m18bri.bin	Pipeline-1800 BRI
m18briip.bin	Pipeline-1800 BRI (IP only)
mhpt1.bin	Pipeline-HP T1
mhpt1ip.bin	Pipeline-HP T1 (IP only)
mhpt1bip.bin	Multiband MAX-HP (IP only)

Table 1:

and so forth ...

The load appears in the Sys Options status window, for example:

```
00-100 Sys Option
>Multiband MAX-HP
Load: mhptlbip
Switched
Installed v
```

The load name is also displayed in fatal error messages. For example:

```
> fat
WARNING: Index: 201 Load: mhptlbip Revision: 4.6cil
        Date: 06/03/1996. Time: 13:04:48
        Location: b0149048 b013f6c0 b014915c b0073450 0000000
b2807400
```

Ethernet setting

A new setting, Ethernet, lets you specify which of the two Ethernet jacks on the Pipeline you use to connect the Pipeline to the local-area network.

Specifying the Ethernet connection

The Ethernet setting specifies which of the two Ethernet jacks on the Pipeline you use to connect the Pipeline to the local-area network.

To set the value of Ethernet, follow these steps:

1 Move the marker to Ethernet if it isn't already there.

EDIT
Configure
Setup
My Addr=181.100.100.99/
16 ^
Plug and Play=No
Data Svc=56K
Link Comp=N/A
Idle=120
Max Ch Count=2
>Ethernet=UTP

The default value, UTP, specifies a connection to the UTP (unshielded twisted pair) jack. You use this jack to connect to a 10Base-T Ethernet network.

2 If the value shown is not correct, press Enter.

The other possible value, AUI, specifies a connection to the AUI jack. You use this jack for connecting to a Thicknet (10Base-5) Ethernet network or, with a Thicknet-to-Thinnet transceiver, to a Thinnet (10Base-2) Ethernet network.

Setting reference

Ethernet	Description: This setting specifies which of the two Ethernet jacks on the Pipeline you use to connect to the local-area network.
	Usage: Press Enter to cycle through the choices.
	• AUI specifies the AUI jack.

You use this jack for connecting to a Thicknet (10Base-5) Ethernet network or, with a Thicknet-to-Thinnet transceiver, to a Thinnet (10Base-2) Ethernet network.

UTP specifies the UTP jack. You use this jack to connect to a 10Base-T (unshielded twisted-pair) Ethernet network. UTP is the default.

Note: If you connect an Ethernet transceiver, such as a transceiver that converts Thick Ethernet to Thin Ethernet, choose the jack to which the transceiver is connected.

Location of the AUI jack

The Pipeline has these jacks on the back.



Figure 1. Back panel of the Pipeline

The following section explains how to connect Thinnet cables to the AUI jack.

Connecting to a Thinnet Ethernet network

To connect the Pipeline to a Thinnet (10Base-2) Ethernet network, follow these steps:

1 Connect a Thicknet-to-Thinnet transceiver to the AUI jack on the back of the Pipeline.



Figure 2. Connecting the Thicknet to Thinnet transceiver

2 Connect a T connector to the transceiver and, if the Pipeline is the last device on the network, connect a terminator to it.



Figure 3. Connecting the T connector and terminator to the transceiver

3 Connect the Thinnet coaxial cable to the T connector.



Figure 4. Connecting the Thinnet cable

Get a T connector for the other end of the cable.If the computer at the other end of the cable is the last device on that end of the network, connect a terminator to it.



Figure 5. Connecting a second T connector and terminator

5 Connect the other end of the cable to the T connector and connect the T connector to the computer's Ethernet interface.



Figure 6. Connecting the Thinnet cable to the T connector

Base Ch Count and Min Ch Count settings

There are two new settings in this release:

- Base Ch Count lets you specify the number of B channels to use at the beginning of a data call.
- Min Ch Count lets you specify the minimum number of B channels to use for a data call.

The following illustration shows where these new settings appear in the Pipeline Configure menu and the default values for the settings:

```
Configure...
Setup...
My Addr=181.100.100.99/
16 ^
Plug and Play=No
Data Svc=56K
Link Comp=N/A
Idle=120
Base Ch Count=1
Min Ch Count=1
Max Ch Count=2
>Ethernet=UTP
```

Setting reference

Base Ch Count Description: This setting specifies the number of B channels the Pipeline uses at the beginning of a data call.

Usage: Press Enter to open a text field, type the number of channels to use (either 1 or 2), and then press Enter again.

You can determine the initial speed of the data connection by multiplying the value of the Base Ch Count parameter by the value of the Data Svc parameter.

Dependencies: You can use both B channels for data only when the ISDN device to which you're connecting supports Multilink Protocol Plus (MP+) or Multilink Point-to-Point Protocol MP encapsulation. If the device supports only Point-to-Point Protocol (PPP), you can use only a single B channel, even if the values of the Base Ch Count, Max Ch Count, or Min Ch Count settings are 2.

The number of channels you specify cannot exceed the number specified by the Max Ch Count parameter.

See Also: Data Svc, Max Ch Count, Min Ch Count

Min Ch Count Description: This setting specifies the minimum number of B channels to use for a data call.

Usage: Press Enter to open a text field, type the number of channels to use (either 1 or 2), and then press Enter again.

Dependencies: You can use both B channels for data only when the ISDN device to which you're connecting supports Multilink Protocol Plus (MP+) or Multilink Point-to-Point Protocol (MP) encapsulation. If the device supports only Point-to-Point Protocol (PPP), you can use only a single B channel, even if the values of the Base Ch Count, Max Ch Count, or Min Ch Count settings are 2.

The number of channels you specify cannot exceed the number specified by the Max Ch Count parameter.

See Also: Base Ch Count, Max Ch Count

72-character user name support

The My Name= parameter can now contain long names up to 72 characters.