Ordering ISDN BRI for the Ascend Pipeline 25

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What is in this document?

This document provides the information you need to order ISDN service from your telephone company and to provision (configure) the line so the Pipeline 25 can use it most effectively. This document applies only to ISDN BRI in North America.

Note: Replace the provisioning information in the Pipeline 25 manuals with the information in this document.

This document contains the following sections:

- Ordering ISDN
- Provisioning for an AT&T 5ESS switch
- Provisioning for a Northern Telecom DMS-100 switch
- Telephone numbers and SPIDs

Ordering ISDN

To your order your ISDN line, complete these steps:

1. Call your telephone company's ISDN Ordering Center and ask which type of switch your telephone company uses in your area—AT&T® 5ESS or Northern Telecom® DMS-100.
2. Refer to the section in this document that applies to the appropriate switch type.
3. Ask which type of ISDN service is available to you—National ISDN-1 (NI-1), AT&T Custom Multipoint, AT&T Custom Point-to-Point, or DMS-100 Custom.
4. Provide your telephone company with the proper provisioning information.
5. When the telephone company installs your ISDN line, obtain the following information:
   – ISDN switch type
   – ISDN telephone numbers (two telephone numbers are recommended for the Pipeline 25)
   – ISDN Service Profile Identifier (SPID) numbers (two SPIDs are recommended for the Pipeline 25)

Provisioning for an AT&T 5ESS switch

The AT&T switch supports the following operating services:

- National ISDN-1 (Bellcore "S1")
- Custom Multipoint
- Custom Point-to-Point

Due to an AT&T 5ESS switch limitation, Multipoint and Point-to-Point services do not support the Pipeline 25 incoming call preemption feature. Incoming call preemption allows the Pipeline 25 to accept a voice call, when both data channels are busy. This means the AT&T switch with Multipoint or Point-to-Point service returns a busy signal to an incoming voice caller, if both Pipeline 25 data channels are busy. For more information, refer to the section "Special issues for AT&T Multipoint and Point-to-Point."

The tables in this section provide the proper provisioning information for each ISDN service.

Note: Local rules may inhibit your local telephone company from allowing some or all of the provisioning parameters from being set as indicated.

National ISDN-1 service in an AT&T 5ESS switch

This section lists the provisioning for the AT&T 5ESS switch with National ISDN-1. Your local telephone company can use the information shown in the following table or the Bellcore "S1" translations settings. Some features are set "per Directory Number." You get two Directory Numbers (that is, phone numbers) with National ISDN-1 service.

Provisioning Feature	Setting
Term Type	A
Circuit Switched Voice (CSV)	1
CSV Additional Call Offering (ACO)	Unrestricted
CSV limit	2
CSV Notification Busy (NB) limit	1
Circuit Switched Data (CSD)	1
CSD Additional Call Offering (ACO)	Unrestricted
CSD limit	2
CSD Notification Busy (NB) limit	1
Electronic Key Telephone System (EKTS)	No
Additional Call Offering (ACO)	Yes

Multipoint service in an AT&T 5ESS switch

This section lists the provisioning for an AT&T 5ESS switch with Multipoint service. Some features are set "per Directory Number." You get two Directory Numbers (that is, phone numbers) with Multipoint service.

Provisioning Feature	Setting
Term Type	A or D
Call Appearances (CA)	1
CA Quantity	1
Circuit Switched Voice (CSV)	1 per Directory Number
CSV limit	2
Circuit Switched Data (CSD)	2 per Directory Number
CSD limit	2

Point-to-Point service in an AT&T 5ESS switch

This section lists the provisioning for an AT&T 5ESS switch with Point-to-Point service. Some features are set “per Directory Number.” You get one Directory Number (that is, phone number) with Point-to-Point service.

Provisioning Feature	Setting
Term Type	A
Call Appearances (CA)	1
CA Quantity	1
Circuit Switched Voice (CSV)	1
CSV limit	2
Circuit Switched Data (CSD)	1
CSD limit	2

Special issues for AT&T Multipoint and Point-to-Point

As mentioned previously, an AT&T 5ESS switch limitation prevents users of AT&T Multipoint or Point-to-Point service from receiving voice calls, when both data channels are in use. Outgoing calls are not affected by this switch limitation, because they are controlled locally at the Pipeline 25. If you pick up a phone device while a 2-channel data call is active, the Pipeline 25 drops one of its data links to service the voice call.

If you must use AT&T Multipoint or Point-to-Point service with the Pipeline 25 and you want to make sure that voice calls are received, you can set the maximum channel count for data calls to 1. However, this limits the Pipeline 25 to 1-channel data calls, so each data call can handle a maximum of 64 kbps.

Note: Regardless of the type of BRI provisioning, if two single-channel data calls are active at one time, an incoming voice call still gets the busy signal. (For example, you might have two active single-channel data calls each to a different router.)

Provisioning for a Northern Telecom DMS-100 switch

This section provides provisioning information for the Northern Telecom DMS-100 switch.

Note: Local rules may prevent your local telephone company from provisioning some or all of the features as indicated.

National ISDN-1 service in a Northern Telecom DMS-100 switch

This section provides the provisioning for the Northern Telecom DMS-100 switch with National ISDN-1 service. Your local telephone company can use the information shown in the following table or the Bellcore “S1” translations settings.

Provisioning Feature	Setting
Signaling	Functional
Protocol version control (PVC)	2 (National ISDN-1)
TEI assignment	Dynamic
Maximum number of keys (maxkeys)	3 (although any number from 1 to 64 is OK)
Release key	No
Ringing indicator	No
Electronic Key Telephone System (EKTS)	No
Additional Call Offering (ACO)	Yes
Number of call appearances	2
Notification Busy Limit	3

Custom service in a Northern Telecom DMS-100 switch

Here is the provisioning for the Northern Telecom DMS-100 switch with Custom service.

Provisioning Feature	Setting
Signaling	Functional
Protocol version control (PVC)	1 (custom)
TEI assignment	Dynamic
Maximum number of keys (maxkeys)	3 (although any number from 1 to 64 is OK)
Release key	No
Ringing indicator	No
Electronic Key Telephone System (EKTS)	No
Additional Call Offering (ACO)	Yes
Number of call appearances	2

Telephone numbers and SPIDs

A SPID is a Service Profile Identifier number used at the central switch to identify services provisioned for your ISDN line. It is derived from a telephone number.

Note: Not all telephone companies include a suffix on their SPIDs. When receiving SPIDs from your telephone company, ask them to verify whether or not suffixes are included. The SPID formats shown in the next sections have been agreed upon by most telephone companies.

SPIDs for an AT&T 5ESS switch

If your ISDN line comes from an AT&T 5ESS switch operating in Point-to-Point mode, no SPIDs are used.

If your ISDN line comes from an AT&T 5ESS switch operating in Multipoint (MP) mode, SPIDs have this format:

`01nnnnnnn0`

`nnnnnnn` is a 7-digit phone number (not including the area code) of the BRI line. For example, if the phone number is `555-1212`, the SPID will be `0155512120`.

If your ISDN line comes from an AT&T 5ESS switch operating in National ISDN-1 (NI-1) mode, SPIDs have this format:

`01nnnnnnn0tt`

`nnnnnnn` is a 7-digit phone number (not including the area code) of the BRI line, and `tt` is a 2-digit code Terminal ID code (TID) from `00` to `62`, which you must assign. We recommend that you always use `00` for this 2-digit code.

For example, if the BRI provider assigns these two phone numbers (minus the area code): `769-6001` and `769-6002`, and you use `00` for the two-digit code for both numbers, the SPIDs will be `017696001000` and `017696002000`.

SPIDs for a Northern Telecom DMS-100 switch

If your ISDN line comes from a Northern Telecom® (NI-1 DMS-100) switch operating in NI-1 Custom mode, SPIDs have this format:

`aaannnnnnnss`

`aaa` is the 3-digit area code and `nnnnnn` is the 7-digit phone number of the ISDN BRI line.

`ss` is the SPID suffix, which can be optional or can be 1 or 2 digits:

`1` and `2` (one for each number used by the ISDN BRI line)

`01` and `02` (one for each number used by the ISDN BRI line)

For example, if the phone number is `415-555-1212`, the SPID will be `415555121201`.

If your ISDN line comes from a Northern Telecom® (NT1 DMS-100) switch operating in National ISDN-1 (NI-1) mode, SPIDs have this format:

`aaannnnnnnsstt`

`aaa` is the 3-digit area code and `nnnnnn` is the 7-digit phone number of the ISDN BRI line.

ss is the SPID suffix, which can be empty or can be 1 or 2 digits:

`1` and `2` (one for each number used by the ISDN BRI line)

`01` and `02` (one for each number used by the ISDN BRI line)

`tt` is a 2-digit code from `00` to `62`, which you must assign. We recommend that you always use `00` for this 2-digit code.

For example, if the phone numbers assigned to the ISDN line are `510-555-1212` and `510-555-1213`, the SPIDs will be `51055512120100` and `51055512130200`.