# Enterprise trunking Primary Rate Interface (PRI)

Spectrum Enterprise PRI trunks are designed to provide a cost-effective and reliable voice service for your ISDN PRI-enabled PBX equipment. Below are some key considerations and interface requirements for a successful implementation for the PBX administrator and IT/network team.

## Spectrum Enterprise PRI interface to PBX

The Spectrum Enterprise-provided Voice Gateway (VGW) presents the DS-1 electrical interface(s) to the client PBX. Each PRI is constructed using a dedicated DS-1. Each PRI, whether full or fractional, has the D channel allocated to time slot 24. Additional fractional PRI configs will be supported

The Spectrum Enterprise PRI presented to the client PBX has the following characteristics:

- Voice only
- Bidirectional only
- Framing: Extended Super Frame (ESF)
- Line Coding: Binary 8 Zero Suppression (B8ZS)
- D Channel: Always channel 24 of each PRI trunk, unless NFAS (PRI bonding) is used
- B Channel: The B channel selection algorithm supported on the VGW is Low-Low; this channel selection algorithm selects the first available B channel, based on a search beginning with the lowest-numbered B channel on the lowest-numbered
- DS-1 facility
- Cable Type: Cat 5 or better
- Network Interface Device: RJ-48
- Cable Length from VGW to PBX: Maximum 650 feet

Spectrum Enterprise recommends that the VGW be installed in a collocated arrangement with the PBX, whenever possible, with a minimum DS-1 cable length.

A DS-1 cross-connect or Network Interface Device (NID) will be supplied and installed by Spectrum Enterprise between the client PBX equipment and the VGW. An RJ-48 crossover cable is run from the VGW to the NID. A client supplied straight RJ-48 should be connected from the NID to the PBX.

## Client premise equipment

Spectrum Enterprise will supply the following Spectrum Enterprise-owned and operated equipment at the client premise:

- VGW, NID and fiber/Ethernet switch for fiber access sites
- VGW, NID and Cable Modem for Hybrid Fiber Coaxial (HFC) access sites

## PRI configuration options

IP address space is included; more is available in accordance with ARIN IP allocation policies.

- PRI Switch Protocol Types Supported: NI-1, NI-2 (default), 5ESS and DMS-100
- Clock Synchronization Source: The VGW (default) or the PBX is the source of the network clock
- Called Party Number (aka DID) Digits: The length of inbound Called Party Number/DID numbers can be truncated to a final length of 1 to 10 digits, as requested by the PRI client; truncation occurs from the leftmost digits
- PRI Trunk Group: A PRI trunk group may contain one or more physical PRI interfaces, and each PRI trunk group references a minimum of one PRI port; each TN is assigned to a PRI trunk group for inbound call termination, and the client may choose to assign any number of TN/DID numbers to a PRI trunk group, up to the allowed maximum for the account

## Physical space requirements

- Rack Shelf to fit Gateway: 1U-2U in standard 19" rack mount

- 110V AC power outlets (3)

- Site temperature between 32°F and 104°F (0° to 40°C) with adequate air circulation

## Power

Client will provide three (3) outlets of unswitched 120V AC power. The client should provide an uninterruptible power supply (UPS). The PRI Trunking equipment will draw a maximum of 2.5 Amps.

## Outbound signaling

Spectrum Enterprise provides assistance in trouble reporting for any billing, technical or service-related issues.

**Redirecting Number Information Element (RNIE):** RNIE support may be enabled (default) or disabled in the Spectrum Enterprise network. Spectrum Enterprise recommends clients use RNIE to explicitly signal call redirection events such as call forwarding and call transfer.

**Calling Party Number (CPN) authentication:** Calls outbound from the customer PBX will be validated and routed by the Spectrum Enterprise network. The CPN (or Redirecting Number, in the case of a redirected call with RNIE support) must contain a valid telephone number.

**Called party number:** For Public Switched Telephone Network (PSTN) calls, the PBX should send a minimum of 10 digits, although 7-digit dialing is supported in those rate centers that support the practice. Short dial strings for special services codes such as 0, 411 and 911 are supported.

**Custom caller ID for trunks:** Other carriers' numbers, toll-free numbers and Spectrum Enterprise numbers from other accounts can be sent as the outbound Caller ID.

**Per-call privacy:** With Per-Call Privacy, the client PBX can be set to block (or unblock) the display of Caller ID on outbound calls. At service provisioning, the default value for CPN is Presentation Allowed. The client PBX can indicate Per-Call Privacy by specifying the Presentation Restricted code point in the Presentation Indicator field of the CPN information element in the ISDN SETUP message.

**Client care contact numbers**
Bright House Networks: 1-877-470-2023
Charter: 1-866-603-3199
Time Warner Cable - Hawaii: 1-808-643-8510
Time Warner Cable: 1-888-812-2591

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