

PATTON

Product Line Overview

From the leading manufacturer of UC, connectivity, and All-IP communication solutions

SmartNode™

VoIP solutions that are **more than just talk**



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VoIP Starts with SmartNode...

SmartNode integrates IP and TDM communications for Enterprise and Carrier access networks, offering VoIP gateways combined with IP access routing, WAN transmission, and transcoding functionality. SmartNode scales from 1 to 32,768 VoIP or fax calls with various telephony interfaces including analog FXS/FXO and digital ISDN BRI, PRI, DS3 and STM-1.

Award-winning SmartNode™ equipment delivers state-of-the-art VoIP technology that integrates seamlessly with existing analog PSTN, digital ISDN, and IP infrastructures.

SmartNode provide any-to-any multipath switching, and supports simultaneous SIP, H.323, ISDN and PSTN calling—plus T.38 SuperG3 FAX and modem over IP.

SmartNode's proven interoperability with all major brands of softswitches and IP PBXs makes it easy for carriers and enterprises to deploy future-proof VoIP systems quickly and profitably. As VoIP Gateway pioneers since 1998, tens of thousands of SmartNode™ products are up and running in enterprise and carrier networks worldwide.

✓ **Telephony interfaces on Gateways include:**

- **1 to 32 FXS/FXO**
- **1 to 8 ISDN BRI**
- **1 to 1024 T1/E1/PRI**
- **1 to 48 DS3**
- **1 to 16 STM1**

✓ **1 to 32,768 VoIP or fax call capacity**

✓ **Optional internal IP router, WAN interface and transcoding functionality**

✓ **Supports simultaneous SIP, H.323, SS7, H.248/Megaco, ISDN, and POTS calling—plus T.38 faxing**

Why SmartNode?

- ✓ Patton Quality and Reliability
- ✓ Industry-Best Customer Support (FREE)
- ✓ Robust Enterprise Feature Sets and Functionality
- ✓ Proven Interoperability
- ✓ Swiss Engineered. Made in the USA.

SmartNode™ OpenScape Business Appliance

IP PBX | VoIP PBX Gateway Appliance Platform



Built on best-of-breed telephony hardware from Patton, the SmartNode OpenScape Business Appliance comes with the award winning OpenScape Business UCC software from Unify factory-installed and ready to run. The SN-OSB is an easy to deploy, state-of-the-art unified communications solution for SMBs in a single device.

- Quick, easy deployment: one-box appliance is fast and simple to install.
- Certified and tested for many Internet Telephony Service Providers (ITSP) globally.
- Integrated IP capability for users and (ITSP) combined with connectivity for FXS, FXO, BRI, and PRI.
 - Rich security features such as SRTP and TLS secure your communications.
 - Failover to alternative service provider trunk link or 3G/4G via USB back-up link will keep you connected 24/365.



UNIFY

SmartNode™ Product Line Overview

SmartNode Product Comparison

Depending on the model, SmartNode comes with four software packages developed for different applications:

- **Trinity™**—Small/medium enterprise feature sets (including nextgen features like TLS and SRTP, stateful firewall, TACACS+, etc.).
- **SmartLink™**—Basic SoHo feature sets.

- **SmartWare™**—Small/medium enterprise feature sets (SIP, PSTN, Routing, QoS, transcoding, etc.).
- **SmartMedia™**—Large enterprise and carrier network feature sets (SIP, PSTN, Call routing, QoS, transcoding, SS7, etc.).

(For more details, see https://www.patton.com/products/smartnode_software.asp)

FXS/FXO Gateways									
	M-ATA	SN100	SN4110	SN4140	SN4520	SN4830	SN4300	SN4400	SN4900*
Software	 SmartLink	 SmartLink	 SmartWare	 Trinity	 SmartWare	 SmartWare	 SmartWare	 SmartWare	 SmartWare
Telephony Interfaces	FXS	FXS & FXO	FXS & FXO	FXS	FXS & FXO	FXS & FXO	FXS or FXO	FXS or FXO	FXS or FXO
Number of Telephony Ports	1	1 or 2	2, 4, 6 or 8	2, 4 or 8	2, 4, 6 or 8	2, 4, 6 or 8	12, 16, 24 or 32	12, 16, 24 or 32	12, 16, 24 or 32
IP Router: IP Routing, QoS, VPN, etc.	No	Yes	No	No	Yes	Yes	No	Yes	Yes
Number of Ethernet Ports	1	2	1	1	2	2	1	2	2
WAN Access	No	No	No	No	No	G.SHDSL Serial X.21 Serial V.35 ADSL	No	No	(Optional) Serial X.21 Serial V.35

*The SN4900 differs from the SN4400 in that it has a redundant internal power supply, optional WAN access, and 0 to 50 °C operating temperature

ISDN BRI Gateways								
	SN-DTA	SN4120	SN4130	SN4150	SN4630	SN4650	SN4660	SN4670
Software	 SmartWare	 SmartWare	 Trinity	 Trinity	 SmartWare	 SmartWare	 SmartWare	 SmartWare
Telephony Interfaces	BRI (NT or NT+TE)	BRI (TE)	BRI	BRI with FXS	BRI	BRI	BRI with FXS/FXO	BRI with FXS/FXO
Number of Telephony Ports	1 or 2	1 or 2	2 or 4	4 or 8	3 or 5	3 or 5	Up to 12	Up to 12
Number of VoIP Channels	2 or 4	2 or 4	4 or 8	4 or 8	4 or 8	4 or 8	Up to 24	Up to 16
IP Router: IP Routing, QoS, VPN, etc.	No	No	No	No	Yes	Yes	Yes	Yes
Number of Ethernet Ports	1	1	1	1	2	1	4	4
WAN Access	No	No	No	No	No	ADSL, G.SHDSL Serial X.21 Serial V.35	No	Fiber, EFM ADSL G.SHDSL

SmartNode™ Product Line Overview

T1/E1/PRI Gateways				
	SN4170	SN4970	SN4980	SN4990
				
Software	Trinity	SmartWare/Trinity	SmartWare/Trinity	SmartWare/Trinity
Telephony Interfaces	PRI	T1/E1/PRI	T1/E1/PRI	T1/E1/PRI
Number of Telephony Ports	1	1 or 4	1 or 4	1 or 4
Number of VoIP Channels	15 to 30	15, 24, 30, 48, 60, 96 or 120	15, 24, 30, 48, 60, 96 or 120	15, 24, 30, 48, 60, 96 or 120
VoIP Gateway: Converts TDM to IP	Yes	Yes	Yes	Yes
IP Router: IP Routing, QoS, VPN, etc.	No	No	Yes	Yes
Number of Ethernet Ports	1	1	2	2
WAN Access	No	No	No	Fiber, ADSL, G.SHDSL, VDSL, Serial X.21, Serial V.35
Transcoding: Interconnect multiple VoIP networks	No	No	Optional	Optional

Enterprise Session Border Controllers (eSBC)									
	SN5200	SN5300	SN5480	SN5490	SN5500	SN5530	SN5540	SN5550	SN5570
									
Software	SmartWare	Trinity	SmartWare/Trinity	SmartWare/Trinity	Trinity	Trinity	Trinity	Trinity	Trinity
Telephony Interfaces	None	None	None	None	None	2 or 4 BRI	FXS	BRI with FXS	1 or 2 PRI
SIP Sessions	Up to 32	Up to 60	Up to 80	Up to 80	Up to 200	Up to 200	Up to 200	Up to 200	Up to 200
Transcoded Calls	N/A	N/A	Up to 64	Up to 64	Up to 16	2 or 4	1, 2 or 4	2 or 4	16
Transcoding: Interconnect multiple VoIP networks	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VoIP Gateway: Converts TDM to IP	No	No	No	No	No	Yes	Yes	Yes	Yes
IP Router: IP Routing, QoS, VPN, etc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Ethernet Ports	5	4	2	2	2	2	2	2	2
WAN Access	Optional X.21	G.SHDSL.bis (ATM or EFM)	No	Fiber, G.SHDSL EFM, X.21	Roadmap	VDSL/ADSL G.SHDSL.bis	VDSL/ADSL G.SHDSL.bis	VDSL/ADSL G.SHDSL.bis	VDSL/ADSL G.SHDSL.bis
SIP & RTP Security	No	Yes*	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* SIP TLS

VoIP Appliances

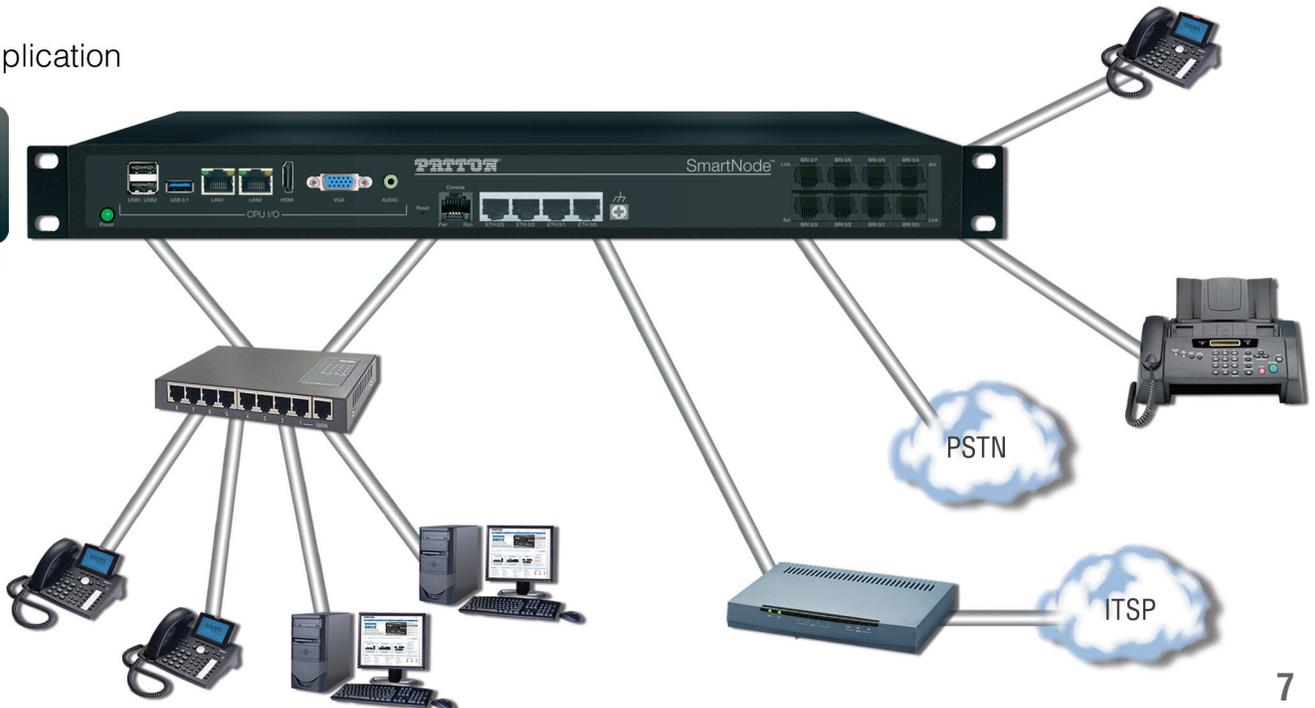
	SNBX64	SNBX-GW	SNOGA	SN-OSB
				
Operating System (OS)	Win 7	Win 7	None	SUSE - Linux
Software	3CX	3CX	N/A	Unify-OpenScape Business
Telephony Interfaces	None	BRI/PRI FXS/FXO	BRI/PRI FXS/FXO	BRI/PRI FXS/FXO
IP Router: IP Routing, QoS, VPN, etc.	No	Yes	Yes	Yes
Number of Ethernet Ports	2	4 up to 6	4 up to 6	4 up to 6
Transcoding: Interconnect multiple VoIP networks	No	Yes	Yes	Yes

VoIP Appliance with Embedded Windows

Patton's SmartNode Branch Exchange (SNBX-GW) with Integrated VoIP Gateway is a convenient "one box" solution. With the built-in VoIP Gateway, the SNBX-GW eliminates the interoperability obstacles for companies that want to keep their legacy equipment including PBXs, phones, fax equipment, and POTS lines.

- Windows Telephony Appliance:**
 - Standard: Intel Celeron J1900 Quad Core 2.0 GHz; DDR3L RAM 4GB; 250 GB HDD or SSD
 - Large: Intel i5 Quad Core 3.5 GHz; DDR3 16 GB; 250 GB HDD or SSD
- Fully Customizable:** Useful for a variety of communication software IP-PBXs, IVR solution, routers, session border controllers, call recording, or call accounting.

Typical Application



SmartNode™ Product Line Overview

Carrier-Grade TDM + VoIP SmartMedia Gateways



4–16 T1/E1s



16–64 T1/E1s



1–3 DS3s



1 OC3/STM-1

Up to
1,024 T1/E1s

Up to
48 DS3s

Up to
16 OC3/STM-1s



Connect your SS7 edge, core and peer zones with emerging H.323 and SIP networks. By supporting TDM-to-TDM, TDM-to-IP, and IP-to-IP architectures, the SmartNode 10K supports your Converged IP migration plan.

- SS7 Media & Signaling
- 1+1 & N+1 Redundancy
- Up to 48 Ethernet Ports
- Scriptable Call Routing

T1/E1/PRI Gateways for Carriers

	SN10100	SN10200			SN10300		
							
Software	SmartMedia	SmartMedia			SmartMedia		
Telephony Interfaces	T1/E1/PRI	T1/E1/PRI	DS3	STM-1	T1/E1/PRI	DS3	STM-1
Number of Telephony Ports	4 to 8	16 to 64	1, 2, or 3	1	16 to 1024	1, 2, or 3	1 to 15 +1
Number of VoIP Channels	up to 256	up to 2,048			up to 32,768		
VoIP Gateway: Converts TDM to IP	Yes	Yes			Yes		
IP Router: IP Routing, QoS, VPN, etc.	No	No			No		
Number of Ethernet Ports	2	2			up to 48		
WAN Access	No	No			No		
Transcoding: Interconnect multiple VoIP networks	No	No			No		

Enterprise Solutions

SIP Trunking with a Legacy PBX

An outbound long-distance call center has an Avaya legacy PBX system. Currently they have a 23-channel PRI with from a local Carrier and 2 PSTN lines for fax machines running them at \$1,200 to \$1,300 per month.

They were informed that they could cut their phone bill in half by a VoIP service provider while also adding next-generation IP features. However, moving to the VoIP service provider would mean throwing away their perfectly functional Avaya PBX and 100+ analog phones (a \$50,000 investment 4 years ago) and re-investing another \$50,000 in an IP PBX and IP

phones. Not to mention, they would have to re-wire the office for Ethernet.

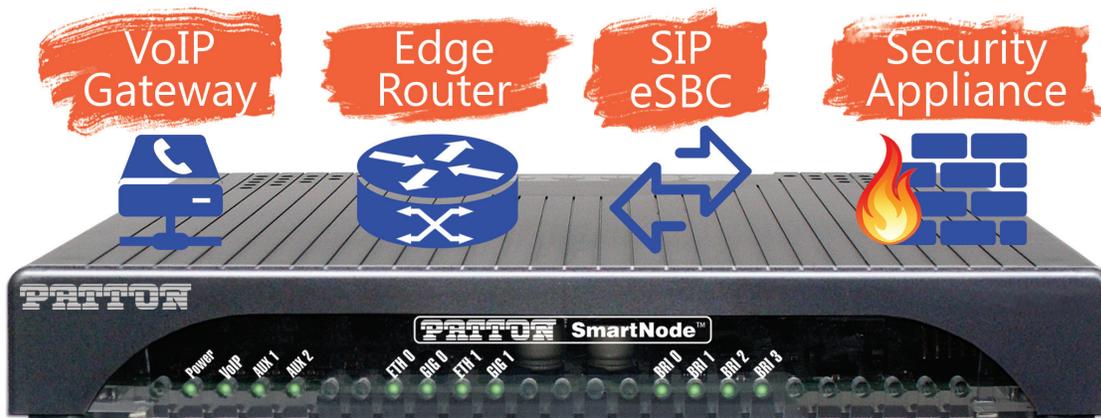
There's no justification for spending \$100,000 to save \$600 a month (ROI in 14 years).

But by installing a PRI SmartNode for roughly a few thousand dollars, this call center can connect their existing phone equipment to a VoIP service provider and achieve the \$600 per month savings after only 3 months when the hardware is paid off. Not only do they achieve \$7,200 in savings each year, they don't have to teach their employees how to use a new phone system.



Four Solutions • One Device • SmartNode eSBC

Now you can deliver SIP-interop, media-gateway, edge-router and security functions with a single enterprise session border controller: SmartNode from Patton.

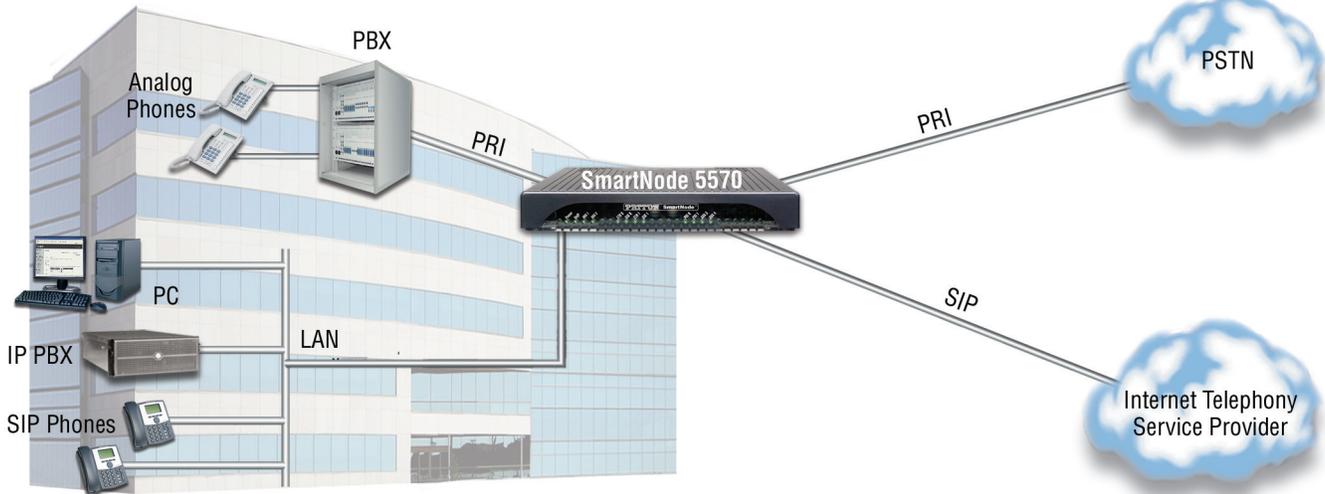


SmartNode™ Product Line Overview

Migration (Legacy PBX to IP PBX)

Why throw away perfectly functional phone equipment? A SmartNode can allow you to utilize your existing phone equipment while migrating to IP equipment at your own pace. As your business grows, start investing in next-generation IP telephones while at the same time utilizing your perfectly good analog/digital phone equipment until it needs to be replaced.

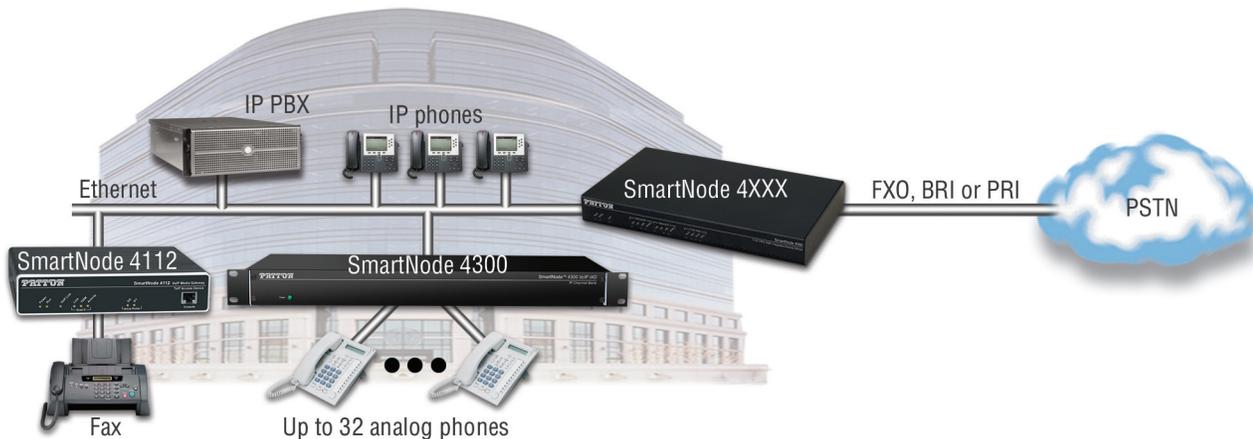
- Allow a smooth migration from old equipment to new equipment
- Stage your investments
- Preserve investment in existing infrastructure and extend useful-life of capital equipment
- Any-to-any flexible call routing between legacy PBX, IP PBX, PSTN and SIP Trunks.



Connecting Legacy Terminals

When migrating to a VoIP network, many businesses find it difficult to replace every legacy terminal with a brand new IP terminal all at once. The SmartNode Gateway gives SMBs and hotels the ability to connect this existing equipment to their IP phone system.

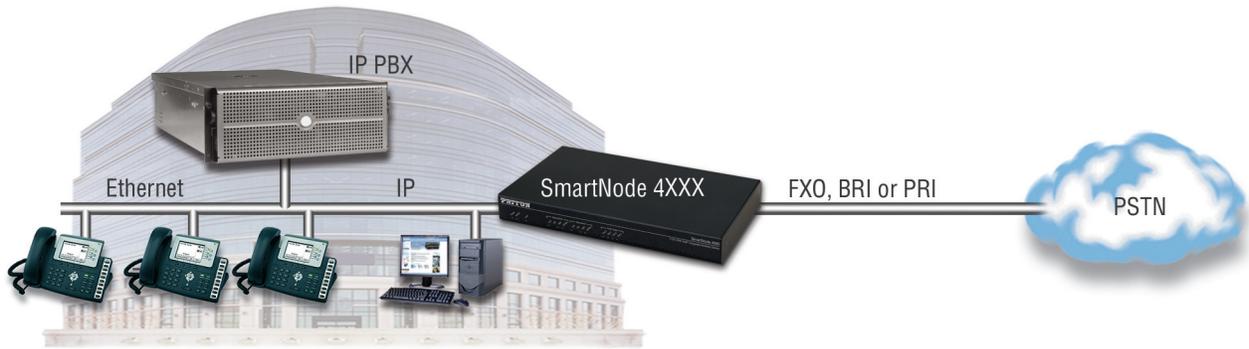
As the world transitions to All-IP, fax has become a particularly hot topic as it has proven to be an indispensable technology. When sending faxes over a VoIP network, even the slightest interruption in the data stream will drop a fax. Hence, to ensure reliable fax delivery, SmartNode offers T.38 and G.711 fax-over-IP.



Gateway to the PSTN for IP PBX

Many businesses are migrating to feature-rich IP PBX phone systems but wish to keep their existing traditional phone service provider because they are satisfied with their current service, stuck in a contract or possibly don't trust VoIP. In these cases, offering Patton's SmartNode Gateways in conjunction with an All-IP setup enable you to provide the benefits of SIP while allowing businesses to continue using their trusted PSTN lines and existing telephony service providers.

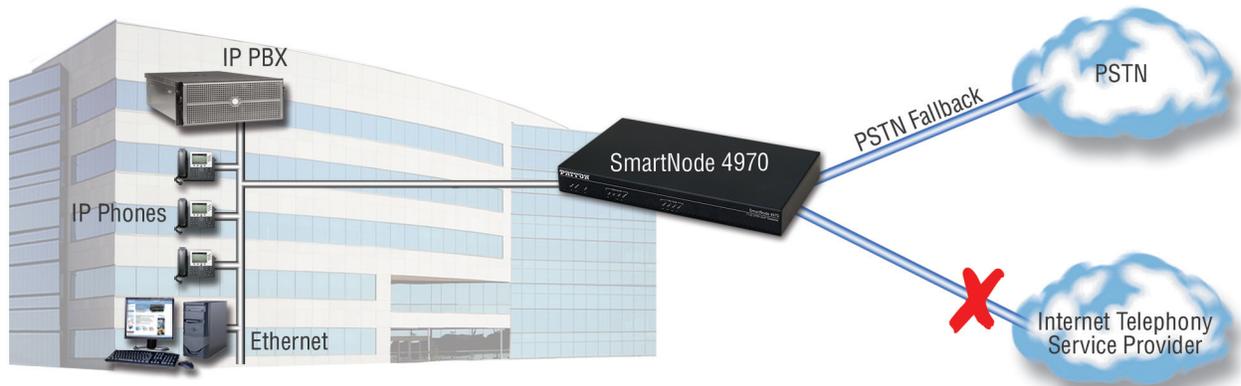
For businesses uneasy about switching to a VoIP service provider, you can use a SmartNode to reliably implement VoIP with a phased approach. First, install your IP setup with a SmartNode to use your existing POTS lines. Once passing calls successfully, you can add a basic VoIP account (some providers even offer a free month trial) to be used for outbound calls only. If the business is satisfied, you can switch them over completely to the VoIP provider and possibly keep one or two POTS lines as a fallback line using the SmartNode (see next section).



SIP Trunking with Fallback/Survivability

The best VoIP providers provide 99% reliability given the necessary bandwidth requirements. A SmartNode ensures businesses telephony continuity by setting their VoIP phone network up with

survivability. A SmartNode VoIP Gateway can be used to fallback to your PSTN lines (99.999% reliability) in cases where the Internet telephony service provider or Internet connection goes down.

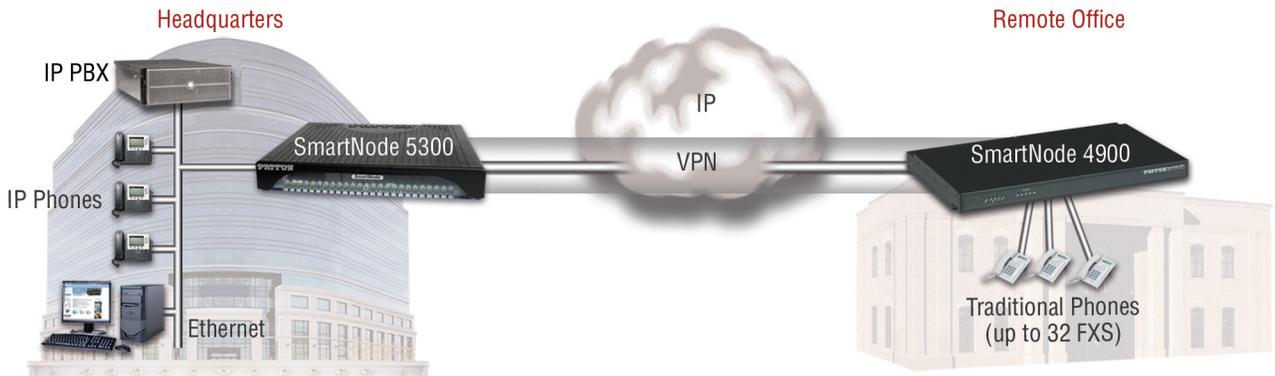


SmartNode™ Product Line Overview

Connecting Remote Offices

The SmartNode Gateway can be used to connect analog, ISDN and IP telephony from a remote office to your IP PBX phone system in your headquarters.

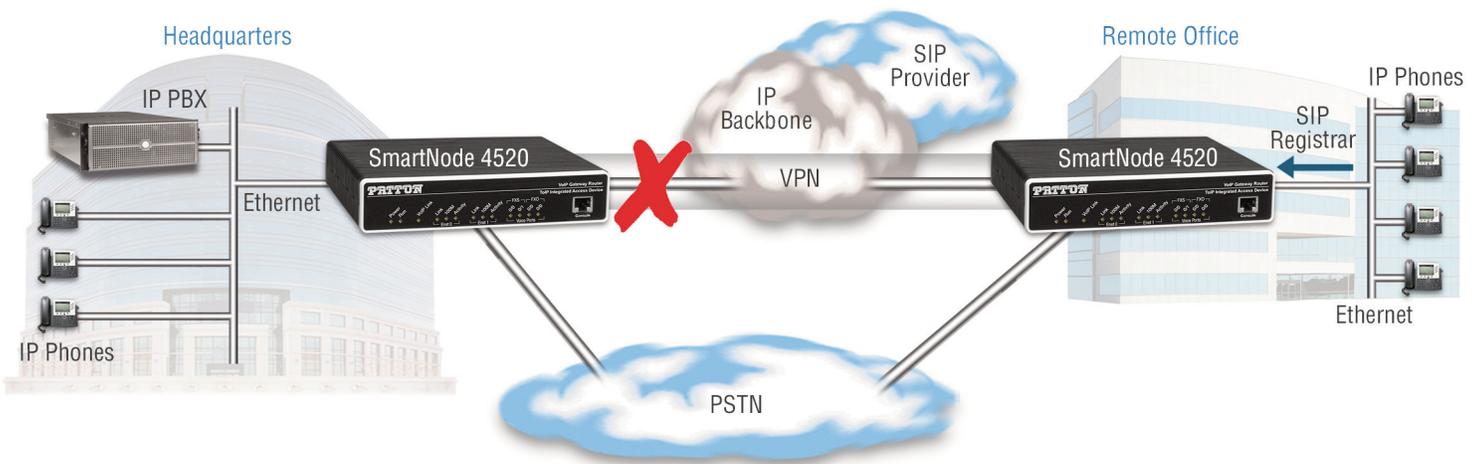
With integrated routing, QoS and VPN features, the SmartNode can ensure a secure connection and maximum voice quality between offices.



Remote Office Survivability

A SmartNode provides a SIP Registrar for your IP phones in your remote office to register with the SmartNode directly rather than just the IP PBX in your headquarters. This way, in the case where you lose

your connection to your headquarters, the remote office can act independently making and receiving calls over PSTN lines.



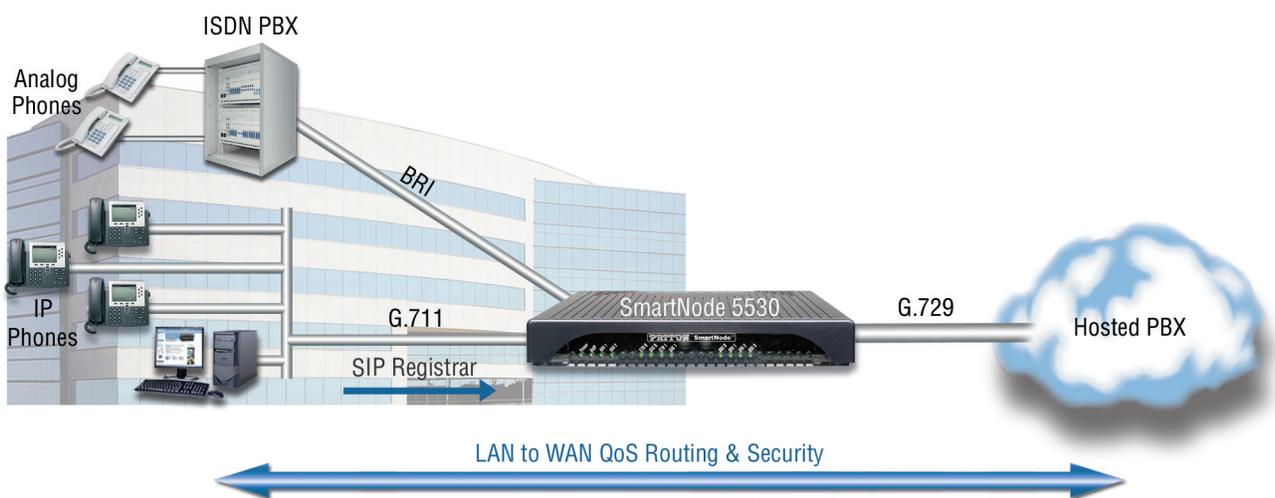
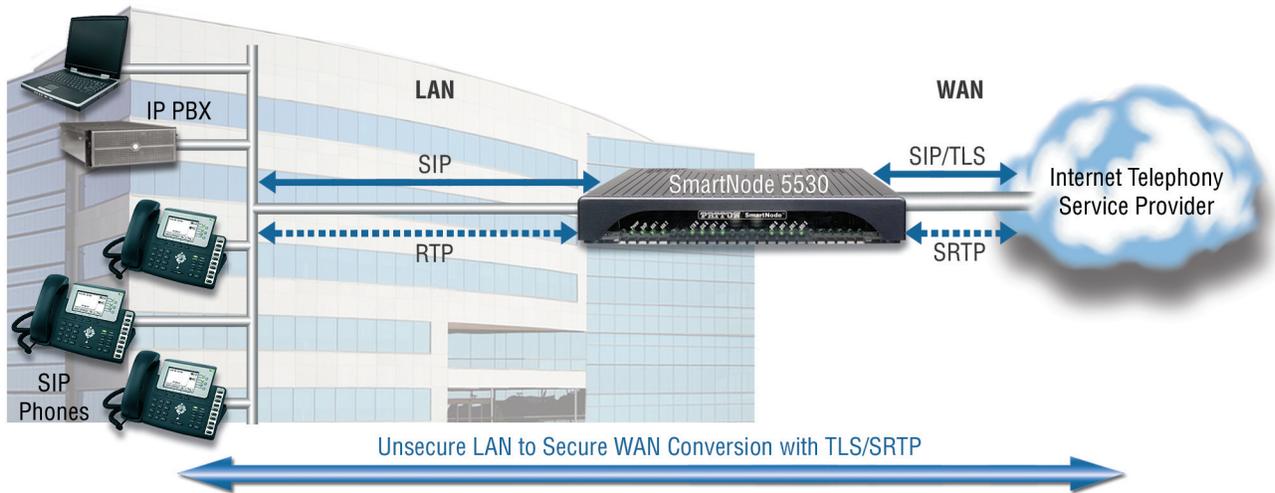
Enterprise Session Border Controllers

For All-IP environments, a SmartNode Enterprise Session Border Controller (eSBC) can be placed at the edge of your network to provide several key voice quality, survivability, and security features:

- **Back-to-back-user-agent (B2BUA):** Isolates your network from the outside world to hide your private addresses and network topology for security purposes.
- **Transcoding:** Provide any-to-any codec conversion allowing efficient use of bandwidth and improved voice quality. Reduce WAN-access bandwidth requirements by converting high bandwidth G.711 codec on your LAN to low bandwidth G.729 for

WAN transport. Transcoding also provides seamless integration between multiple VoIP providers using different VoIP codecs.

- **Quality-of-Service (QoS):** Ensures voice quality by managing data communications so that voice packets and other real-time data are prioritized.
- **SIP Registrar:** Enables any registration and authentication scenario between IP PBX on one side and SIP Trunk provider on the other.
- **Security:** Translates SIP and RTP to SIP/TLS and Secure RTP when traffic is leaving the LAN side of the network.



Patton's T1/E1 PRI VoIP Gateways and eSBCs are Smaller, Better, and Cost Less!



Patton's T1/E1 PRI SmartNode VoIP solutions come in a small form factor, at a very competitive price—with more high performance features that small and medium-sized companies want.

The SmartNode 5570 eSBC T1/E1 PRI Enterprise Session Border Controller Series and the SmartNode 4170 T1/E1 PRI VoIP Gateway Series offer G.722 high-density voice (HD Voice), TLS encrypted signaling, SRTP-encrypted voice, TR-069 provisioning, and a host of other advanced business-class features.



SmartNode 4170 Single-port T1/E1 PRI VoIP Gateway

- **From 15 to 30 VoIP calls**—Up to 30 G.722, T.38 or G.711 simultaneous calls. Optionally SRTP support for 30 calls.
- **Full Telephony Features**—SessionRouter allows flexible call routing and numbering plan adaptations, CLIP/CLIR, hold, transfer, 3-way conferencing (Roadmap) and much more.
- **Management & Provisioning**—Web-based management, WEB Wizard, SNMPv3, TR-069, command line interface, auto-provisioning, separate config domain support, secure provisioning for configuration & software upgrades.



SmartNode 5570 Enterprise Session Border Controller (eSBC)

- **30 VoIP calls**—1 or 2 ISDN E1/T1 PRI ports. 30 simultaneous G.722, T.38 or G.711 ISDN to VoIP calls. Includes SIP TLS and SRTP support for 30 calls or up to 16 SIP-to-SIP transcoded calls (e.g. G.711 to G.722 or RTP to SRTP).
- **Full VoIP protocol support**—SIPv2, SIPv2 over TLS, ISDN, DSS1, NI-2, QSIG, T.38, G.722 HD voice, RTP Security with SRTP, fax and modem bypass, DTMF relay. SIP to SIP transcoding for up to 16 calls, non transcoding up to 200 calls.
- **Full Telephony Features**—Same as SN4170.
- **SIP Registrar**—License included for all eSBC products.

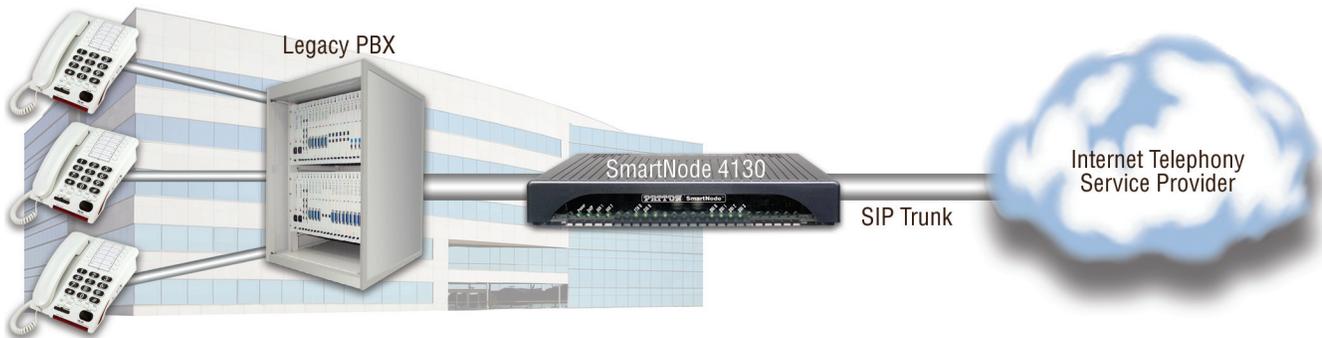
SmartNode™ Product Line Overview

Carrier Solutions

Carrier CPE: Legacy PBX

As a growing number of Service Providers are offering VoIP services, they face the challenge of connecting a wide array of legacy PBX systems. The SmartNode will always provide the same SIP to the service provider regardless of the type of legacy PBX attached to it.

Patton's SmartNode supports all varieties of legacy PBXs, regardless of the type of trunk supported. This includes Analog, BRI, PRI, DS3 or STM-1 connections.



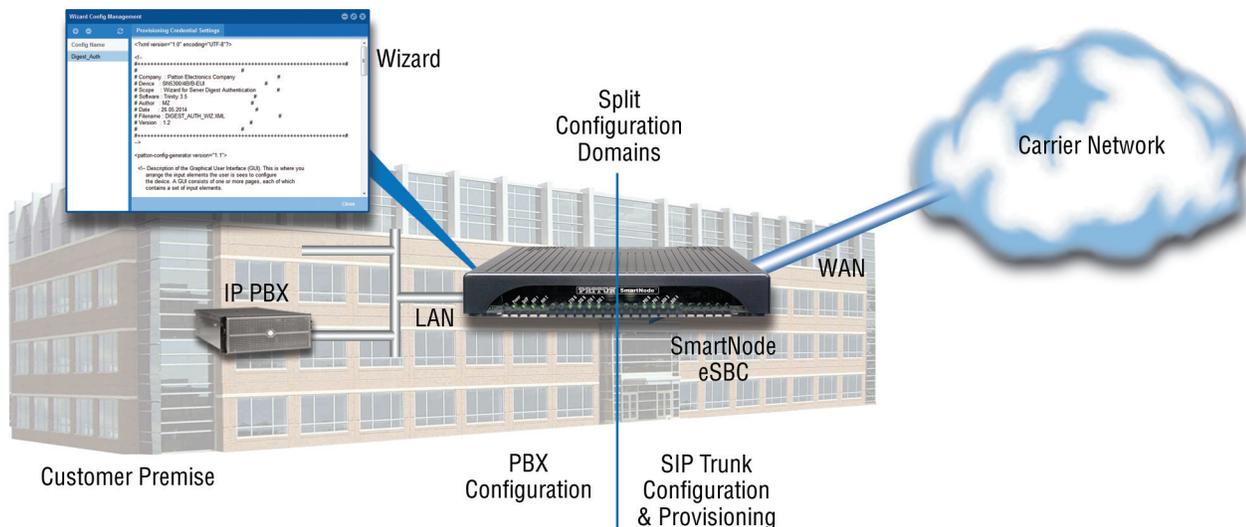
Carrier CPE: IP PBX

The major problem for carriers is the wide selection of IP PBXs available on the market today. Even though each IP PBX provider claims to be SIP standards based, each system does something different with the SIP protocol. This means the service provider must have a unique softswitch profile for each type of IP PBX system that ties directly to OAM (operations, administration and maintenance) costs.

This SIP normalization standardizes setup because no matter what vendor IP PBX is used at the customer premise, the SIP presented to the service provider is always the same—eliminating the need for individual service profiles for each vendor's IP PBX.

This device receives SIP requests from the customer premise equipment and reformats the SIP to meet the requirements for the service provider softswitch.

Also moving the typical SBC features of these VoIP Routers from the Carrier network to the customer premise provides the customer with QoS, transcoding and a security demarcation point.



*Any provisioning solution supporting ftp, http or https will work with the Patton SmartNode.

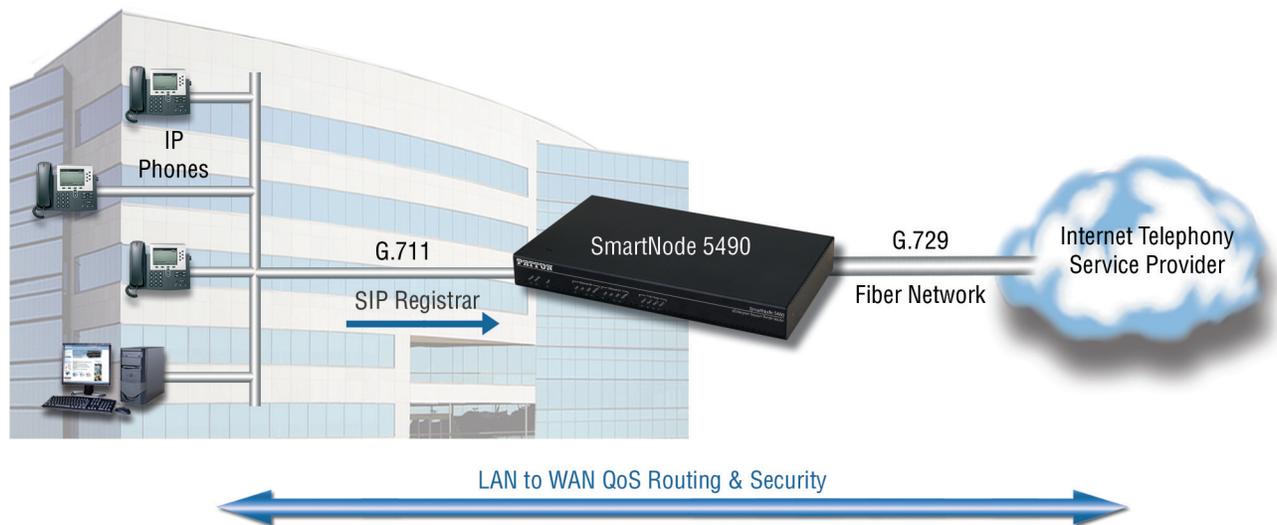
SmartNode™ Product Line Overview

Carrier CPE: Hosted PBX

With the wide variety of SIP phones available on the market today, the same number of softswitch SIP profiles is required to support each vendor's SIP phone. By utilizing the SmartNode Enterprise Session Border Controller with the SIP Back-to-Back user agent, a single softswitch profile can be used to support all varieties of SIP phones. This will allow control of OAM costs by not utilizing support personnel's valuable time to develop and implement multiple SIP phone profiles.

A second problem is that most SIP phones require registration to some type of softswitch or Session Border Controller to be able

to function. Most eSBCs on the market today support a SIP registrar function to allow SIP to continue operation in the case of a softswitch failure. But in the case of a broadband connection failure, the SIP phones will not be able to reach the SBC to registrar and will not function. The solution for this problem is to move that eSBC functionality to the customer premises. By complementing the SBC functionality with the SmartNode eSBC that supports SIP registration, all SIP phones will be able to operate locally without the broadband connection.



Carrier CPE: Connect Any Enterprise

The Patton SmartNode™ product line supports IP PBX and hosted PBX, as well as legacy PBX systems. The feature-rich capabilities of the Patton SmartNode VoIP CPE means the service provider can have a single vendor solution that supports all VoIP services to the

end user. By providing a single and consistent SIP interface for all three of the above services, Patton can help you simplify VoIP deployment while controlling your OAM costs.

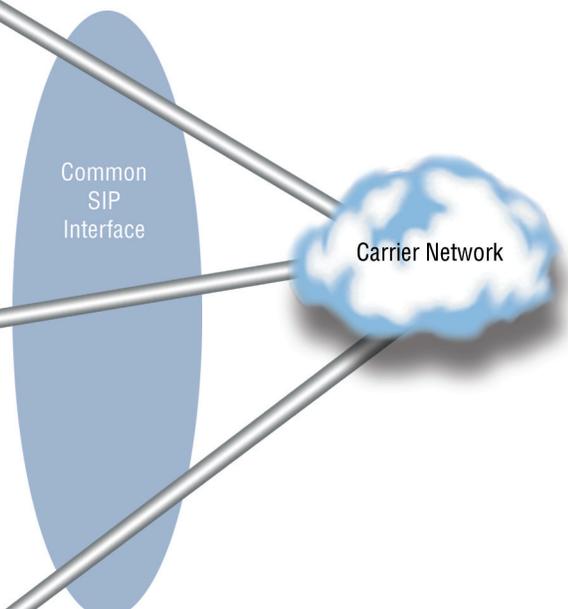
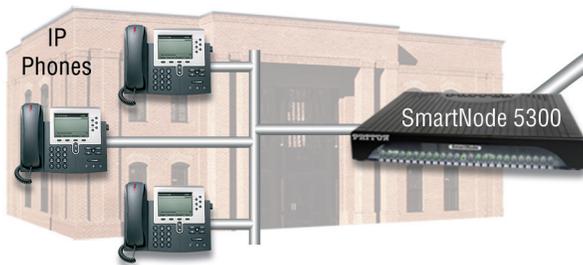
Customer 1: ISDN Ntba replacement



Customer 2: On-premise IP PBX



Customer 3: Hosted All-IP solution



The Patton SmartNode™ solution operates under a single software platform allowing ease of installation and configuration, regardless of the application being supported. And the specific features explained above are available on all SmartNode products. Other

vendors cannot support these features because of limited feature sets or by providing a gateway only solution that cannot support IP-to-IP applications.

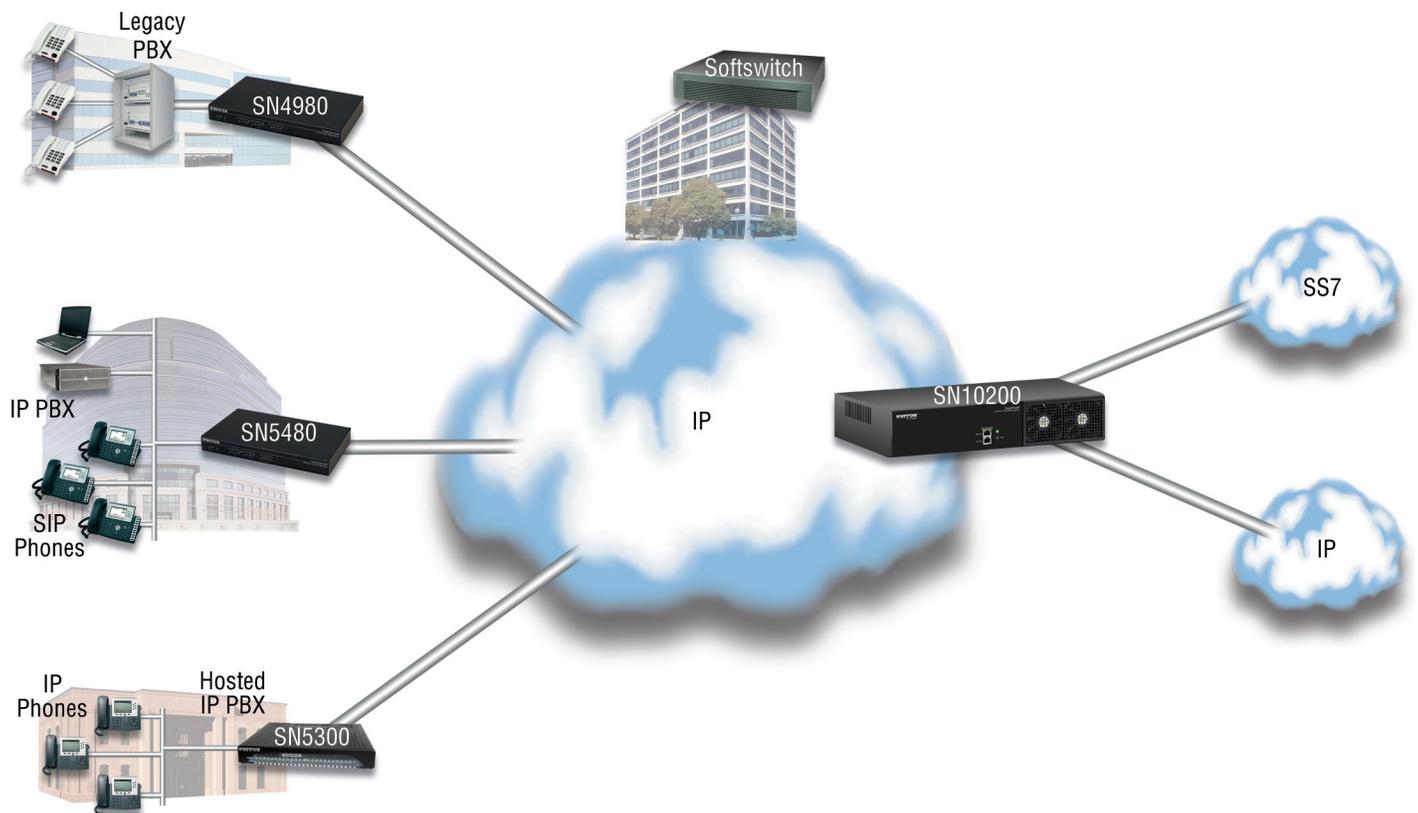
SmartNode™ Product Line Overview

Carrier Solutions

Carrier Network

Service providers are adding VoIP capabilities to their networks, whether to reduce costs when interconnecting with other carriers, to cost-effectively build out their network footprints, or simply to transport voice traffic across their IP backbones. This can be best accomplished using a SmartNode 10XXX Series media gateway, that enables the delivery of VoIP services by bridging voice traffic

between the public switched telephone network (PSTN)—based on time-division multiplexing (TDM)—and IP networks such as the Internet. Whether sitting at the network core or at the edge, SmartNode media gateways enable service providers to introduce VoIP into their networks while maintaining the quality and the reliability of traditional TDM networks.



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