

Application Note: Patton SmartNode VoIP Gateways for 3CX Phone System

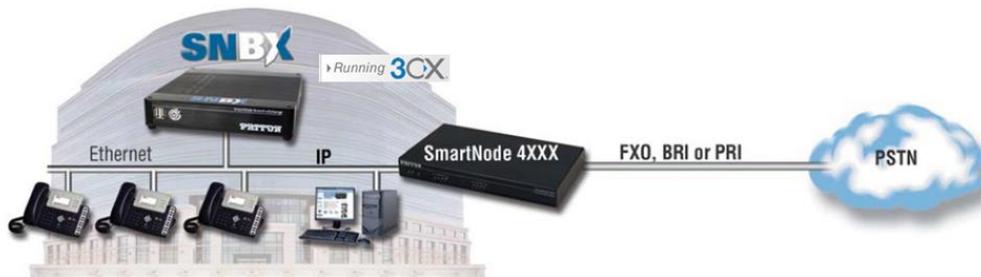
Introduction

In installing 3CX Phone System for Windows, you will likely need to integrate existing legacy telephony equipment, fax machines or phone lines. Patton offers a complete line of reliable, stand-alone SmartNode VoIP Gateway hardware which do exactly that. All SmartNode Gateways are tightly integrated with the 3CX phone system and, of course, extensively tested for interoperability—not to mention all SmartNode models are [recommended by 3CX](#).

This document helps you to identify the right SmartNode for your needs.

Choosing a PSTN Gateway

Many installations will require that you keep their PSTN telephone lines because of service contracts, VoIP reliability concerns and/or to ensure survivability. To connect your 3CX Phone System to physical PSTN telephony lines, you will need to consider the following models. They are ordered by interface type and call capacity, and connect through SIP over the IP network to 3CX phone system. A capacity of 4 calls means: 4 simultaneous calls can be made from 3CX Phone System to the PSTN. Each call can be a voice or fax call.



(Note: The SNBX, or SmartNode Branch eXchange, in the application image is a Patton appliance used to run 3CX Phone System.)

For Analog Lines

Patton SmartNode analog FXO Gateways have 2 to 32 physical analog interfaces. The number of interfaces is equal to the call capacity. For 8 and 12 lines, you can easily stack multiple 4-port models—this might be more cost-effective

FXO Ports	Call Capacity	Gateway	Gateway-Router*
2	2	SN4112/JO/EUI	SN4522/JO/EUI
4	4	SN4114/JO/EUI	SN4524/JO/EUI
16	16	SN4316/JO/EUI	SN4416/JO/EUI
24	24	SN4324/JO/EUI	SN4424/JO/EUI
32	32	SN4332/JO/EUI	SN4432/JO/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

For ISDN PRI or T1 Robbed-bit Lines in the US

Patton ISDN PRI gateways have 1 or 4 physical PRI interfaces, and there are different models to cover the whole range of capacity from 15 to 120 voice calls. You can pick the Gateway that comes closest to your required capacity and only pay the price for what you actually need. Call capacity is limited by software and can be increased through software licenses. All models can be also be used in Europe, as the physical interface can be software configured to E1 (Europe) or T1 (US).

PRI Ports	Call Capacity	Gateway	Gateway-Router*
1	15	SN4970/1E15/EUI	SN4980/1E15/EUI
1	24	SN4970/1E24/EUI	SN4980/1E24/EUI
4	15	SN4970/4E15/EUI	SN4980/4E15/EUI
4	24	SN4970/4E24/EUI	SN4980/4E24/EUI
4	48	SN4970/4E48/EUI	SN4980/4E48/EUI
4	96	SN4970/4E96/EUI	SN4980/4E96/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

For ISDN BRI Lines

SmartNode ISDN BRI gateways come in versions from 1 to 8 BRI interfaces. Corresponding call capacities are 2 to 16 simultaneous calls (each BRI interface carries 2 simultaneous calls). SmartNode BRI Gateways of all types can be stacked (registered separately to 3CX) in order to connect more than 8 lines.

BRI Ports	Call Capacity	Gateway	Gateway-Router*
1	2	SN4120/1BIS2V/EUI	
2	4	SN4120/2BIS4V/EUI	
2 (+1 for failover relay)	4		SN4634/3BIS/EUI
4 (+1 for failover relay)	8		SN4638/5BIS/EUI
8	16		SN4661/8BIS16V/EUI

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For ISDN PRI Lines in Europe

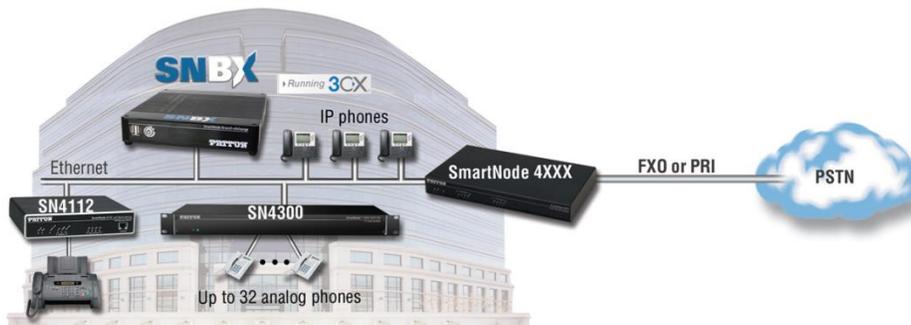
Patton ISDN PRI gateways have 1 or 4 physical PRI interfaces, and there are different models to cover the whole range of capacity from 15 to 120 voice calls. You can pick the model that comes closest to your required capacity and only pay the price for what you actually need. Call capacity is limited by software and can be increased through software licenses. All models can be also be used in the US, as the physical interface can be software configured to E1 (Europe) or T1 (US).

PRI Ports	Call Capacity	Gateway	Gateway-Router*
1	15	SN4970/1E15/EUI	SN4980/1E15/EUI
1	30	SN4970/1E30/EUI	SN4980/1E30/EUI
4	15	SN4970/4E15/EUI	SN4980/4E15/EUI
4	30	SN4970/4E30/EUI	SN4980/4E30/EUI
4	60	SN4970/4E60/EUI	SN4980/4E60/EUI
4	120	SN4970/4E120/EUI	SN4980/4E120/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

Choosing a Terminal Gateway

To integrate analog devices like fax machines, analog phones, modems or wireless DECT phones with your 3CX Phone System, you need a terminal gateway. Patton offers terminal gateways with support from a single up to 32 ports. All devices can easily be stacked.



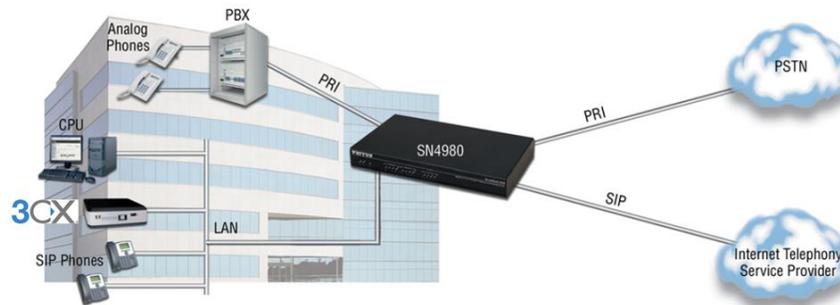
FXS Ports	Call Capacity	Gateway	Gateway-Router*
1	1	M-ATA-1A/EUI	
2	2	SN4112/JS/EUI	SN4522/JS/EUI
4	4	SN4114/JS/EUI	SN4524/JS/EUI
8	8	SN4118/JS/EUI	SN4528/JS/EUI
16	16	SN4316/JS/EUI	SN4416/JS/EUI
24	24	SN4324/JS/EUI	SN4424/JS/EUI
32	32	SN4332/JS/EUI	SN4432/JS/EUI

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Migrating Smoothly from Legacy to IP

You might want to keep your existing PBX, at least for a certain period of time. How do you interface the old PBX system with the new 3CX Phone System? Patton SmartNode Gateways can also answer this question.

- Still use your old PBX system as long as you want
- Immediately start the 3CX system without having to disrupt the PBX service
- Continue to use your PSTN lines as your phone service or fallback lines
- Both the old PBX and 3CX “share” the PSTN lines – they both can make outgoing calls
- Route incoming calls to 3CX or the old PBX depending on the called or calling party number
- Switch off your old PBX at your leisure



For Analog Lines

Analog interfaces that connect to the PSTN are called FXO. Analog interfaces that connect to the PBX are called FXS (see also the corresponding [tech note](#)). Some of the following SmartNode models have both FXS and FXO interfaces, so they are suited for the drop-and-insert application. For larger installations (more ports), SmartNode models can also be stacked to perform the same function.

FXS Ports (PBX)	FXO Ports (PSTN Lines)	Call Capacity	Gateway	Gateway-Router*
1	0	1	M-ATA-1A/EUI	
2	0	2	SN4112/JS/EUI	SN4522/JS/EUI
2	2	4	SN4114/2JS2JO/EUI	SN4524/2JS2JO/EUI
4	0	4	SN4114/JS/EUI	SN4524/JS/EUI
4	2	6	SN4116/4JS2JO/EUI	SN4526/4JS2JO/EUI
4	4	8	SN4118/4JS4JO/EUI	SN4528/4JS4JO/EUI
8	0	8	SN4118/JS/EUI	SN4528/JS/EUI
16	0	16	SN4316/JS/EUI	SN4416/JS/EUI
24	0	24	SN4324/JS/EUI	SN4424/JS/EUI
32	0	32	SN4332/JS/EUI	SN4432/JS/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

For ISDN PRI or T1 robbed-bit lines in the US

T1 interfaces that connect to the PSTN are called to be “user” side or “slave.” T1 interfaces that connect to a PBX are called “network” side or “master”. On the Patton SmartNode T1 devices, all interfaces can be software configured to be either “user” or “network” – so you can use any model with more than 1 interface in the drop-and-insert application.

PRI Ports	Call Capacity	Gateway	Gateway-Router*
1	15	SN4970/1E15/EUI	SN4980/1E15/EUI
1	24	SN4970/1E24/EUI	SN4980/1E24/EUI
4	15	SN4970/4E15/EUI	SN4980/4E15/EUI
4	24	SN4970/4E24/EUI	SN4980/4E24/EUI
4	48	SN4970/4E48/EUI	SN4980/4E48/EUI
4	96	SN4970/4E96/EUI	SN4980/4E96/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

For ISDN BRI lines

BRI interfaces that connect to the PSTN are called to be “user” side or “slave”. BRI interfaces that connect to a PBX are called “network” side or “master”. On several Patton SmartNode BRI devices, interfaces can be software configured to be either “user” or “network”.

Patton ISDN BRI gateways come in versions from 1 to 8 BRI interfaces. Corresponding call capacities are 2 to 16 simultaneous calls (each BRI interface carries 2 simultaneous calls). Patton BRI gateways of all types can be stacked (registered separately to 3CX) in order to connect more than 8 lines.

BRI Ports	Call Capacity	Gateway	Gateway-Router*
1	2	SN4120/1BIS2V/EUI	
2	4	SN4120/2BIS4V/EUI	
2 (+1 for failover relay)	4		SN4634/3BIS/EUI
4 (+1 for failover relay)	8		SN4638/5BIS/EUI
8	16		SN4661/8BIS16V/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

For ISDN PRI lines in Europe

E1 interfaces that connect to the PSTN are called to be “user” side or “slave”. E1 interfaces that connect to a PBX are called “network” side or “master”. On the Patton SmartNode E1 devices, all interfaces can be software configured to be either “user” or “network” – so you can use any model with more than 1 interface in the drop-and-insert application.

PRI Ports	Call Capacity	Gateway	Gateway-Router*
1	15	SN4970/1E15/EUI	SN4980/1E15/EUI
1	30	SN4970/1E30/EUI	SN4980/1E30/EUI
4	15	SN4970/4E15/EUI	SN4980/4E15/EUI
4	30	SN4970/4E30/EUI	SN4980/4E30/EUI
4	60	SN4970/4E60/EUI	SN4980/4E60/EUI
4	120	SN4970/4E120/EUI	SN4980/4E120/EUI

*SmartNode Gateways can come with a built-in IP router to manage both voice and data traffic, providing QoS and security features.

Additional Information

For additional help or any questions, please visit the [3CX forum](#) or contact Patton Technical Support:

- E-mail: support@patton.com
 - E-mails will be answered within 1 business day
- Telephone Support:
 - USA Office: +1 (301) 975-1007
 - Monday-Friday: 8:00 AM to 5:00 PM EST
 - Switzerland Office: +41 (31) 985 25 55
 - Monday-Friday: 9:00 to 12:00, 13:30 to 17:30 CET

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