

# Patton SmartNode SIP Gateway

## About Smartnodes

Patton Smartnodes are used by many in the sipXecs community. While not supported directly by sipX, they offer a feature rich solution as an unmanaged gateway. The primary configuration interface for smartnodes is CLI and the routing core is built upon a very flexible modular structure. Unfortunately, the learning curve for configuring these devices can be quite steep.

This document will provide a basic understanding of the configuration for a typical sipX installation. The following sections will guide you through each step. Rather than cut-and-paste your first configuration, you may find it more beneficial to configure your first device by following the steps below to gain an understanding of how all the pieces connect to make a functional and flexible gateway solution.

## Setup Networking

### Setup your DNS SERVER

```
dns-client server DNS.IPA.DDR.ESS
dns-relay
```

### Setup NTP services (Be kind to the net and use pool servers <http://www.pool.ntp.org/>)

```
sntp-client
sntp-client server primary 0.north-america.pool.ntp.org port 123 version 4
sntp-client server secondary 1.north-america.pool.ntp.org port 123 version 4
sntp-client poll-interval 36000
sntp-client local-clock-offset
```

### Create NAPT profiles (If using the smartnode as a router/firewall)

```
profile napt NAPT_WAN
profile napt NAPT
```

### Set the Hostname

```
system hostname SIP-GW.YOURDOMAIN.COM
```

### Set Default Gateway

```
context ip router
route 0.0.0.0 0.0.0.0 GATEWAY.IP.ADDRESS 0
```

### Setup WAN and LAN profiles (Some models only have one ethernet port)

```
context ip router
interface WAN
ipaddress dhcp
use profile napt NAPT_WAN
tcp adjust-mss rx mtu
tcp adjust-mss tx mtu
```

```
context ip router
```

```
interface LAN
ipaddress LAN.IPA.DDR.ESS 255.255.255.0
tcp adjust-mss rx mtu
tcp adjust-mss tx mtu
```

### Bind the interfaces to your profiles

```
port ethernet 0 0
medium auto
encapsulation ip
bind interface WAN router
no shutdown
```

```
port ethernet 0 1
```

```
medium auto
encapsulation ip
bind interface LAN router
no shutdown
```

## Setup ISDN (T1/E1/BRI)

### Setup US Tone Profile

```
profile tone-set US
map call-progress-tone dial-tone US_Dialtone
map call-progress-tone ringback-tone US_Alertingtone
map call-progress-tone busy-tone US_Busytone
map call-progress-tone release-tone US_Busytone
map call-progress-tone congestion-tone US_Busytone
```

### Build a routing table

```
context cs switch
routing-table called-e164 PSTN_TO_SIP
route .%T dest-interface IF_SIPX
```

### Create the ISDN interface profile

```
context cs switch
interface isdn IF_PRI_1
route call dest-table PSTN_TO_SIP
use profile tone-set US
caller-name send-information-following
user-side-ringback-tone
```

### Bind the interface to the T1 Port

```
port e1t1 0 0
port-type t1
clock slave
linecode b8zs
framing esf
encapsulation q921
```

```
q921
uni-side user
encapsulation q931
```

```
q931
protocol ni2
uni-side user
bchan-number-order ascending-cyclic
encapsulation cc-isdn
bind interface IF_PRI_1 switch
```

## Setup FXO

Enter FXO setup here

## Setup FXS

Enter FXS setup here

## Setup SIP (5.x Method)

### Build a routing table

```
context cs switch
service hunt-group OUTBOUND
drop-cause normal-unspecified
drop-cause no-circuit-channel-available
drop-cause network-out-of-order
drop-cause temporary-failure
drop-cause switching-equipment-congestion
drop-cause access-info-discarded
drop-cause circuit-channel-not-available
drop-cause resources-unavailable
route call 1 dest-interface IF_PRI_1
```

context cs switch

```
routing-table called-e164 SIP_TO_PSTN
route default dest-service OUTBOUND
```

### Build a location service

```
context cs switch
location-service SIPX_SERVER
domain sipx.yourdomain.com
```

### Build a sip gateway and bind it to your LAN

```
context sip-gateway GW-SIP
interface IF_SIPX
bind interface LAN context router port 5060
```

context sip-gateway GW-SIP

```
bind location-service SIPX_SERVER
no shutdown
```

### Create the sip interface and bind the gateway

```
context cs switch
interface sip IF_SIPX
bind context sip-gateway GW-SIP
route call dest-table SIP_TO_PSTN
remote sipx.yourdomain.com
```

## Example Configurations

### Tested

[Patton 4114 \(4 FXO\) - TESTED](#) - Config verified for simple setup with sipXecs.

[Patton 4524 - TESTED](#) - Config verified for simple setup with sipXecs.

### Contributed

Below are configurations for different types of Patton Smartnodes. Some configurations are 4.x and others are 5.x. The 5.x code release presented changes to the SIP configuration which prevents 4.x SIP configs from working with 5.x. Follow the "Setup SIP" Section above to make the necessary changes required for a working 5.x configuration.

[Patton 4114 \(4 FXO\) - 4.x Config](#)

[Patton 4118 \(4 FXO, 4 FXS\) - 4.x Config](#)

[Patton 4960 \(4 E1 T1\) - 4.x Config](#)

[Patton 4960 Firmware version 5.2 - 5.2 Routing inbound DID's to sipX](#)

[Patton 4524 \(4 FXO, 4 FXS\) - 4.x Day / night & weekend call routing in the Patton](#)

[Patton 4524 \(4 FXO, 4 FXS\) - 5.x To login to 4 extensions on the PBX](#)

Patton 4524 (4 FXO, 4 FXS) with SIP Trunk to voip.ms - 5.x SIP trunk to Concentric acting as B2BUA.

## Misc

### Setting Daylight Savings Time in Patton Gateways:

[http://www.patton.com/support/faqs\\_detail.asp?id=151](http://www.patton.com/support/faqs_detail.asp?id=151)

For EST 2008:

```
timer DaylightSavingsOn 02:00 mar 1st next sunday every year "sntp-client gmst-offset - 04:00:00"  
timer DaylightSavingsOff 02:00 nov 8th next sunday every year "sntp-client gmst-offset - 05:00:00"
```

### Patton SmartNode Tips and Tricks:

#### Get rid of hold tone

This simple method of getting rid of hold progress tones simply makes them silent.

```
profile call-progress-tone defaultHoldtone  
pause 2 50  
pause 4 50  
pause 6 3000
```