4 Patton SmartNode Configuration

The SmartNode can be configured primarily via the CLI. In section *4.1 SmartNode Configuration Parameters* you will find a sample configuration file that was used for the majority of the interoperability testing. You may upload the configuration file directly using the Trivial File Transfer Protocol (TFTP) via CLI command or you can upload via HTTP using the devices embedded webserver. The following examples describe how to set the parameters using a configuration file.

To issue a manual copy via TFTP/HTTP use the following commands:

```
copy tftp://x.x.x.x/filename.cfg startup-config
```

or

```
copy http://x.x.x.x/filename.cfg startup-config
```

This configuration description assumes SmartNode uses the Dynamic Host Configuration Protocol (DHCP) to obtain an IP address, TFTP server, and other network settings. The SmartNode is configured to load the configuration file each time it resets or re-synchronizes. For more information on automated provisioning, see the *SmartWare Configuration Guide* [1].

The SmartNode attempts to find a configuration in the following order:

1) Raw DHCP 66 Value
2) *<System MAC Address>.cfg* in the directory of the raw DHCP 66 Value
3) Prefixes the DHCP66 Value with “http://” and looks for a file named by DHCP 67
4) Prefixes the DHCP66 Value with “http://” and looks for a file named using the MAC address convention
5) Prefixes the DHCP66 Value with “tftp://” and looks for a file named by DHCP 67
6) Prefixes the DHCP66 Value with “tftp://” and looks for a file named by the MAC address convention

The capabilities of the SmartNode have been verified for use with BroadWorks based on the settings described in the following table. For more information on the meaning, purposes, and applicability of the individual configuration items, see the *SmartWare Configuration Guide* [1].

Configuration Files

A SmartNode’s configuration is an ordered list of commands (in a similar method of a Cisco Router). Specific command extension is not needed, .txt or .cfg are commonly used by Patton’s technicians.

4.1 SmartNode Configuration Parameters

This section describes system-wide configuration items that are generally required for each SmartNode to work with BroadWorks. Subscriber-specific settings are described in the next section. It is recommended you configure this box via TELNET or SSH as the command line is more optimized in the SmartNode.

What is a SmartNode?

SmartNode™ is a VoIP Gateway made by Patton Electronics. It is designed to be driven by the CLI, but for those who prefer a WebGUI it is available. The SmartNode can come in a variance of port densities and combinations.

BroadSoft Certified SmartNode densities ranges can be found in section *3.1 BroadWorks Device Profile Configuration*.

Configuration

The following figure is the complete configuration used for the interoperability testing with designated wildcards and explanations on the meaning of each section. Wild cards can be identified by a double hash such as, ##WILDCARD##.

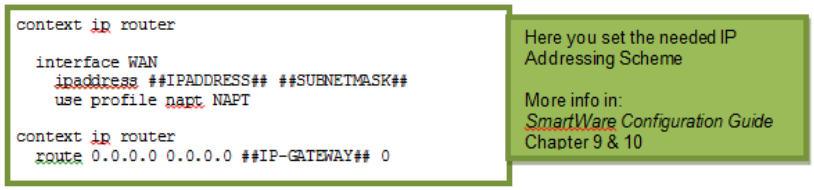

Figure 1 Configuration Breakdowns

It is not possible to include all instructions or parameters available here to set up the gateway for every situation. In every explanation is a reference chapter number to the *SmartWare Configuration Guide* [1]. Also, note that if any confusion is not answered by the guide provided, contact support@patton.com free of charge, or go to your valued reseller.

Key for understanding outlines and notes:

System Level Configuration: Outlined in Green

Call Level Configuration: Outlined in Orange

Registration/Subscription Configuration: Outlined in Blue

```
#-----------------------------------------------------------------#
#                                                                 #
# SN4526/4JS2JO/EUI                                               #
# R6.T 2012-07-18 H323 SIP FXS FXO                                #
# 1970-01-15T07:22:35                                             #
# SN/00A0BA0403AA                                                 #
# Generated configuration file                                    #
#                                                                 #
#-----------------------------------------------------------------#

cli version 3.20

clock local default-offset +00:00
dns-client server ##DNS-SERVER-IP##
sntp-client server primary ##NTP-SERVER-HOST##
```

DNS/NTP settings appear here.

```
profile napt NAPT
```

Static Port Forwarding Entries go here.

```
profile call-progress-tone defaultSItone
  play 1 330 950 -7
  play 2 330 1400 -7

profile call-progress-tone US_Dialtone
  play 1 1000 350 -13 440 -13

profile call-progress-tone US_Alertingtone
  play 1 1000 440 -19 480 -19
  pause 2 3000

profile call-progress-tone US_Busytone
  play 1 500 480 -24 620 -24
  pause 2 500

profile call-progress-tone US_Releasetone
  play 1 250 480 -24 620 -24
  pause 2 250

profile tone-set default
  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_Releasetone
  map call-progress-tone congestion-tone US_Busytone
```

This is where you set all *Call-Progress Tones* needed, the setup shown is for the *United States Tones*.
If you remove all text in this box completely, the SmartNode will revert to the default settings which are congruent with the *EU Progress-Tones*.
For more information see chapter 47 in the *SmartWare Configuration Guide* [1].

```
profile voip default
  codec 1 g711ulaw64k rx-length 20 tx-length 20
  dtmf-relay rtp
  fax transmission 1 relay t38-udp
```

This is where you set CODECs and Fax Behavior.
For more information see chapter 52 in the *SmartWare Configuration Guide* [1].

```
profile pstn default

profile ringing-cadence default
  play 1 1000
  pause 2 4000
```

```
profile sip default
  autonomous-transitioning

profile aaa default
  method 1 local
  method 2 none
```

```
context ip router

  interface WAN
    ipaddress ##IPADDRESS## ##SUBNETMASK##
    use profile napt NAPT

context ip router
  route 0.0.0.0 0.0.0.0 ##IP-GATEWAY## 0
```

This is where you set the *IP Addressing Scheme*.
For more information see chapters 9 and 10 in the *SmartWare Configuration Guide* [1].

```
context cs switch
```

```
  routing-table called-e164 RT_FROM_FXS00
    route .T dest-interface BroadSoft

  routing-table called-e164 RT_TO_FXS00
    route ##DID-NUMBER## dest-interface FXS00
```

This is where you set the *Call-Routing behavior*.
For more information see chapter 45 in the *SmartWare Configuration Guide* [1].

```
  interface sip BroadSoft
    bind context sip-gateway GW_BROADSOFT
    route call dest-table RT_TO_FXS00
    remote ##SIP-PROXY##
    local ##SIP-PROXY##
    early-connect
    early-disconnect
```

This is where you set the parameters that are used to generate SIP INVITE's. Also, header manipulation is available in the SIP Interface.
For more information see chapter 44 in the *SmartWare Configuration Guide* [1].

```
  interface fxs FXS00
    route call dest-table RT_FROM_FXS00
    message-waiting-indication stutter-dial-tone
    message-waiting-indication frequency-shift-keying
    call-transfer
    caller-id-presentation mid-ring
    subscriber-number ##PHONE-NUMBER##
```

This is where you set the parameters that are used on the FXS Port, you will need one interface for every Port
For more information see chapter 39 in the *SmartWare Configuration Guide* [1].

```
context cs switch
  no shutdown
```

```
authentication-service AUTH
  realm 1 ##AUTH-REALM##
  username ##USER1## password ##PASSWORD##
  username ##USER2## password ##PASSWORD##
  username ##USER3## password ##PASSWORD##
  username ##USER4## password ##PASSWORD##
  username ##USER5## password ##PASSWORD##
```

This is a Database for Username/Passwords (encrypted on view) if Realm is not needed, to match any, delete the line.
For more information see chapter 55 in the *SmartWare Configuration Guide* [1].

```
location-service locserv
  domain 1 ##PROXY-DOMAIN##
  match-any-domain
```

This is a Database for Registration info
For more information see chapter 57 in the *SmartWare Configuration Guide* [1].

```
  identity-group default

    registration outbound
      registrar ##REGISTRAR-NAME##
      preferred-transport-protocol ##TCP/UDP##
      proxy 1 ##REGISTRAR-HOST##
      lifetime 1200
      register auto
      retry-timeout on-system-error 10
      retry-timeout on-client-error 10
      retry-timeout on-server-error 10

    message inbound
      message-server ##SERVER-HOST## 5060
      lifetime 120
      subscribe implicit
      retry-timeout on-system-error 10
      retry-timeout on-client-error 10
      retry-timeout on-server-error 10

    call outbound
      proxy 1 ##CALL IP-De
      invite-transaction-timeout 3
      non-invite-transaction-timeout 32
```

Identity-group default is where you can set settings that apply globally to all usernames. Proxy information usually ends up here, along with retry timeouts. For more information see chapter 57 in the *SmartWare Configuration Guide* [1].

```
identity ##PHONE-NUMBER## inherits default

  authentication outbound
    authenticate 1 authentication-service AUTH username ##USER1##

  registration outbound
    proxy 1 redas.iop2.broadworks.net

  call outbound
    proxy 1 redas.iop2.broadworks.net
```

This is for user specific settings as the previous settings.
For more information see chapter 57 in the *SmartWare Configuration Guide* [1].

```
context sip-gateway GW_BROADSOFT

  interface sipgwint
    bind interface WAN context router port 5060

context sip-gateway GW_BROADSOFT
  bind location-service locserv
  no shutdown
```

This is where the SIP ties in with the IP.
For more information see chapter 51 in the *SmartWare Configuration Guide* [1].

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

port ethernet 0 1
  medium 10 half
  shutdown
```

This is where the physical setup of Ethernet Ports is done. For more information see chapter 51 in the *SmartWare Configuration Guide* [1].

```
port fxs 0 0
  use profile fxs us
  encapsulation cc-fxs
  bind interface FXS00 switch
  no shutdown

port fxs 0 1
  shutdown

port fxs 0 2
  shutdown

port fxs 0 3
  shutdown
```

This is where the physical setup of TDM Ports is done. For more information see chapter 16-20 in the *SmartWare Configuration Guide* [1].

4.2 Shared Call Appearance Configuration

SmartNode device does not support Shared Call Appearance.