3G Gateway Solution

AddPac Technology

2011, Sales and Marketing

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- 4-Port 3G Module (AP-N1-3G4)
- 3G Gateway Series
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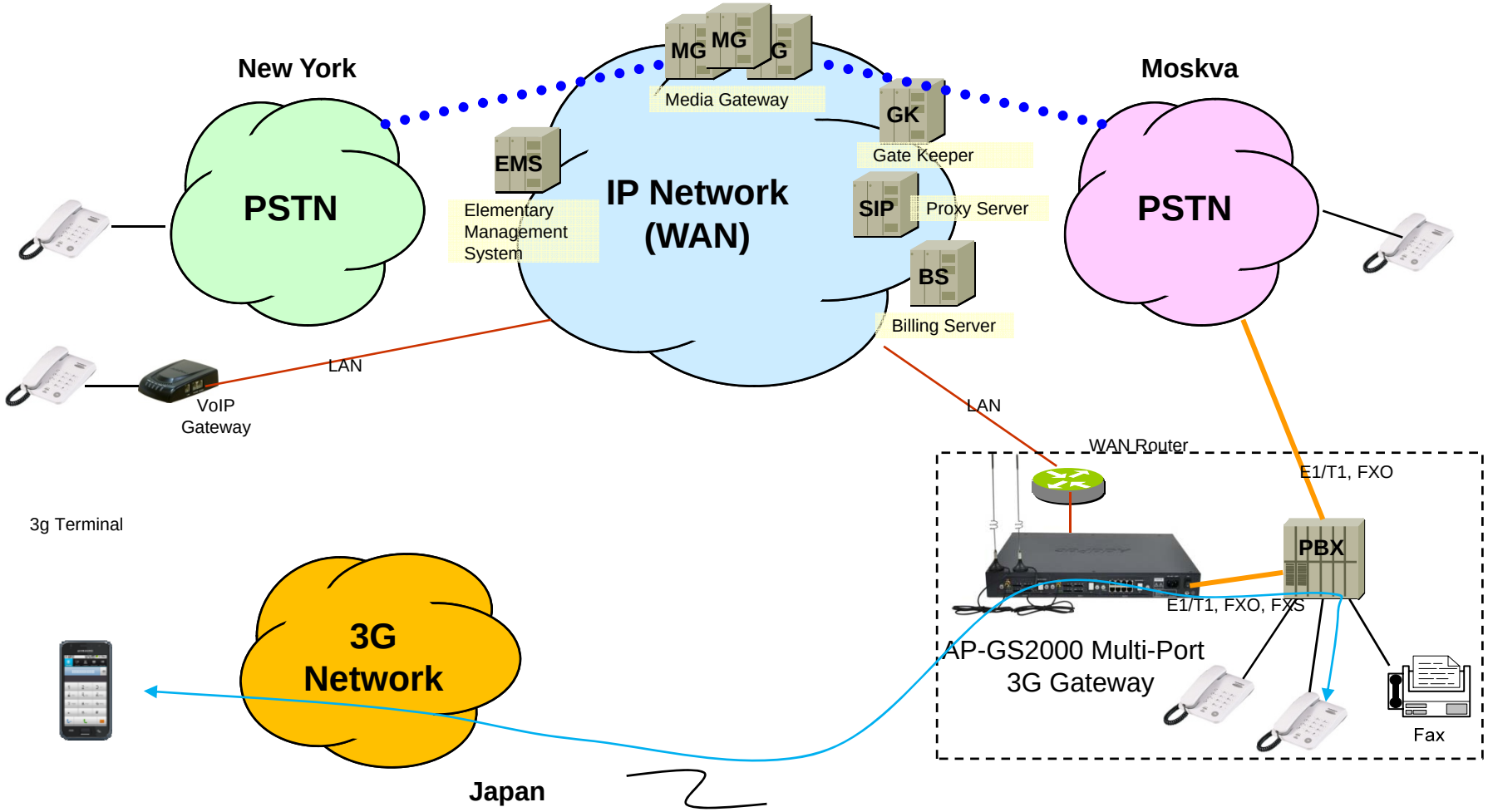
  - AP-GS3000(36ch)
  - AP-GS3500(36ch)
- Smart Web Manager for 3G Gateway
- Smart NMS for 3G Gateway

3G Gateway Service Diagram



4-Port 3G Module

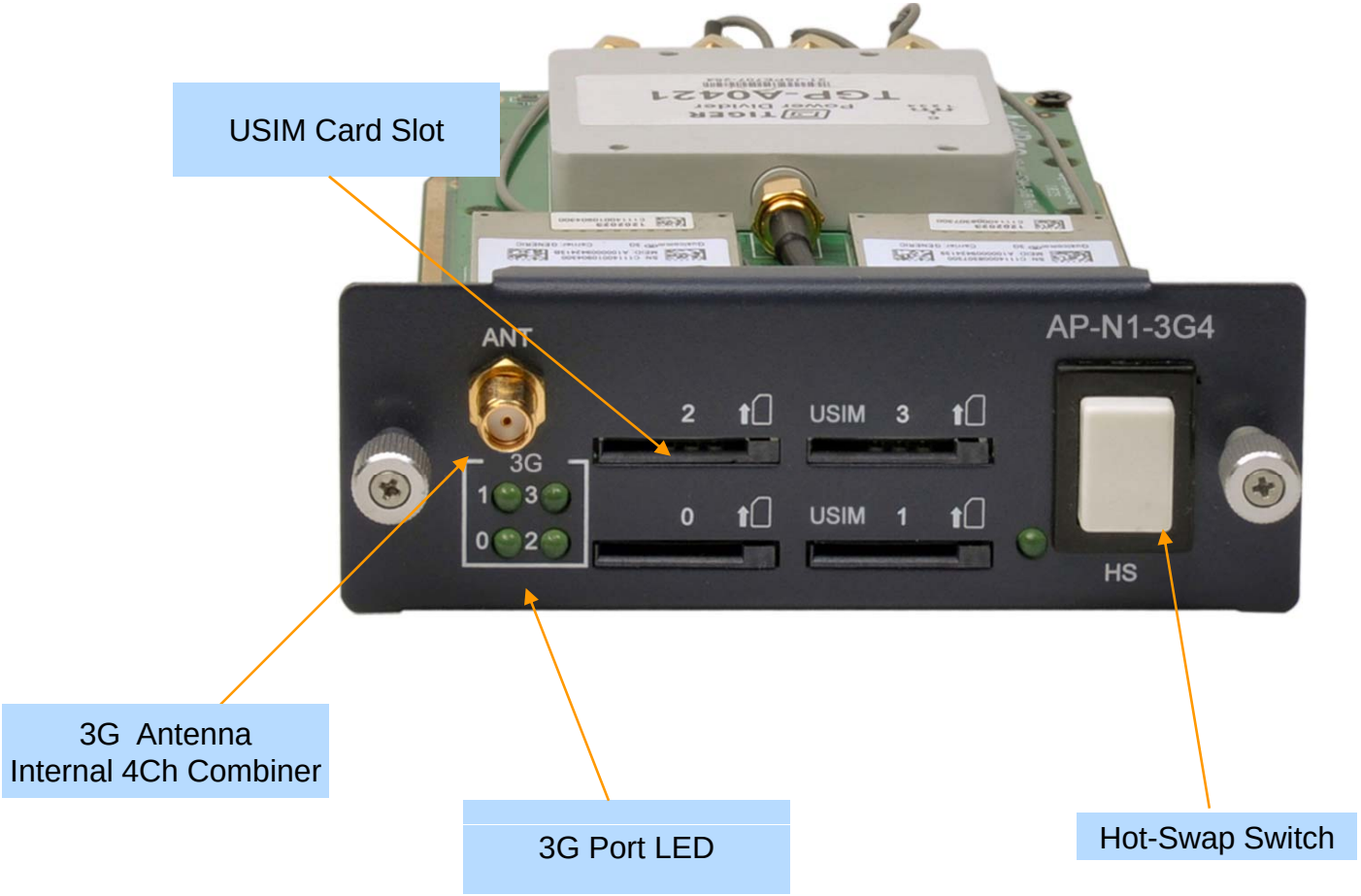
4-Port 3G Module

AP-N1-3G4 4-Port 3G Module

- WCDMA 2100MHz - Power Class 3 + 24dBm , etc
- GSM 900Mhz – Power Class 4 -2W
- GSM 1800MHz– Power Class 1-1W
- Network Backward Compatibility
- USIM Slot Interface
- Data Transfer Rate
  - HSUPA : Up to 7.2Mbps
  - HSDPA : Up to 3.6Mpbs
- 4-Port 3G Module(AP-N1-3G4)
  - 4-Port USIM Card Slot
  - Port LEDs for Link Activation Indication
  - One(1) 3G Antenna Interface (Internal 4 Channel Combiner)
  - Hot-Swap Button

Hardware Specification

AP-N1-CDMA4 4-Port CDMA Module



3G Gateway Series

3G Gateway Comparison Table

Model	AP-GS1500	AP-GS2000	AP-GS2500	AP-GS3000	AP-GS3500
Available Modules	AP-N1-3G4 AP-N1-GSM4 AP-N1-CDMA4 AP-N1-FXS8 AP-N1-FXO8 AP-N1-FXS4O4	AP-N1-3G4 AP-N1-GSM4 AP-N1-CDMA4 AP-N1-FXS8 AP-N1-FXO8 AP-N1-FXS4O4 AP-N1-E1	AP-N1-3G4 AP-N1-GSM4 AP-N1-CDMA4 AP-N1-FXS8 AP-N1-FXO8 AP-N1-FXS4O4 AP-N1-E1	AP-N1-3G4 AP-N1-GSM4 AP-N1-CDMA4 AP-N1-FXS8 AP-N1-FXO8 AP-N1-FXS4O4 AP-N1-E1	AP-N1-3G4 AP-N1-GSM4 AP-N1-CDMA4 AP-N1-FXS8 AP-N1-FXO8 AP-N1-FXS4O4 AP-N1-E1
3G Channel	Up to 8 Channel	Up to 12 Channel	Up to 16 Channel	Up to 36 Channel	Up to 36 Channel
3G Antenna	One(1) / 4 Channel 3G Module	One(1) / 4 Channel 3G Module	One(1) / 4 Channel 3G Module	One(1) / 4 Channel 3G Module	One(1) / 4 Channel 3G Module
Module Slot	Two(2) Module Slots for 3G	Three(3) Module Slots for 3G	Four(4) Module Slots for 3G	Nine(9) Module Slots for 3G, E1/T1 Module Slot	Nine(9) Module Slots for 3G, E1/T1 Module Slot
LAN Port	2	2	2	2	2
Console	1	1	1	1	1
Power	Single PSU	Single PSU	Single PSU	Single PSU	Dual PSU (module)

AP-GS1500
3G Gateway

3G Gateway

AP-GS1500 Multi-Port 3G Gateway

- Two(2) Module Slots for 4-Port 3G Module, 4-Port GSM Module, 4-Port CDMA Module 8FXS/8FXO Analog Interface (Up to 8-Port 3G, 4-Port 3G +8FXS/8FXO Module)
- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Two(2)10/100Mbps Fast Ethernet
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) & NMS for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Powerful Web based Management
- Rack Mountable Chassis with Internal Power Supply

3G Gateway

AP-GS1500 Multi-Port 3G Gateway

- RISC Microprocessor Computing Power
- Two(2) Module Slot for 3G, GSM, CDMA, Analog/Digital Interface
- 4-Port 3G Module(AP-N1-3G4), Hot-Swap
  - One(1) 3G Antenna Interface (4 Channel Combiner), 4-Port USIM Card Slot
- 4-Port GSM Module(AP-N1-GSM4), Hot-Swap
  - One(1) GSM Antenna Interface (4 Channel Combiner), 4-Port SIM Card Slot
- 4-Port CDMA Module(AP-N1-CDMA4), Hot-Swap
  - One(1) CDMA Antenna Interface (4 Channel Combiner), 4-Port RUIM Card Slot
- VoIP Interface Module, Hot-Swap
  - 8-Port FXS,8-Port FXO VoIP Module (AP-N1-FXS8, etc)
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Internal Power Supply

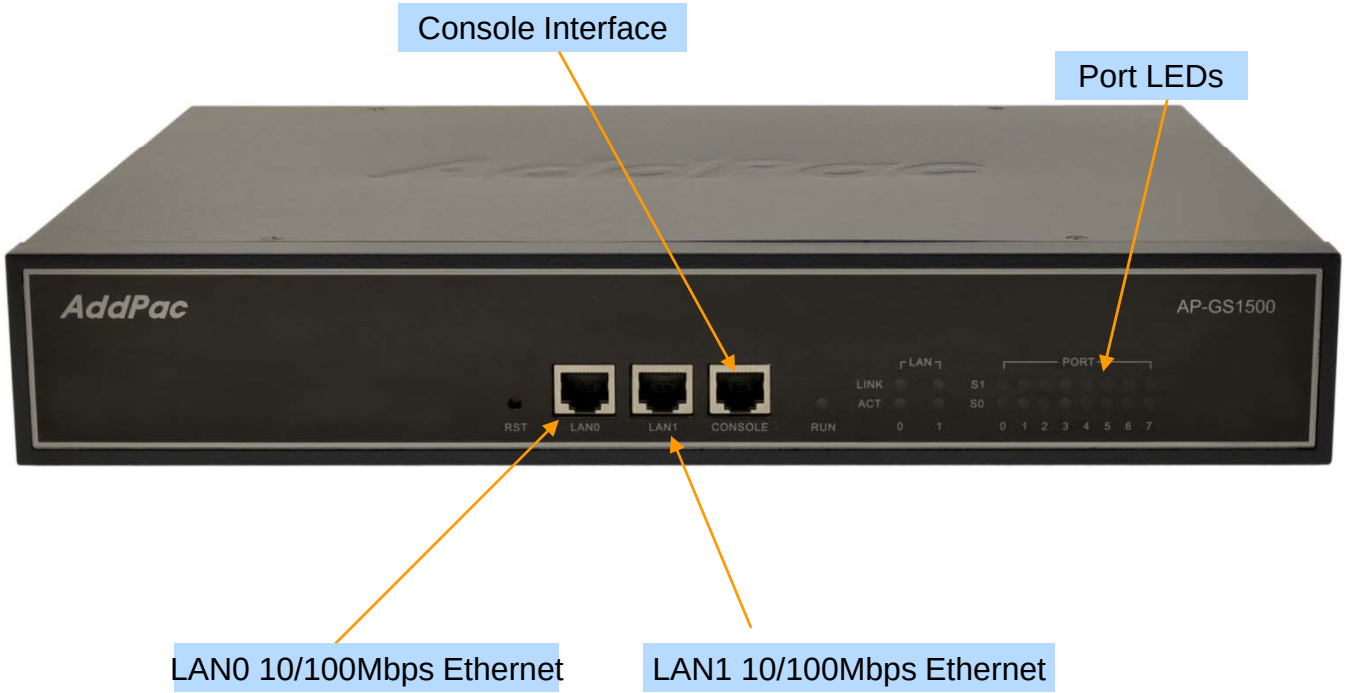
Hardware Specification

AP-GS1500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

Front Side View



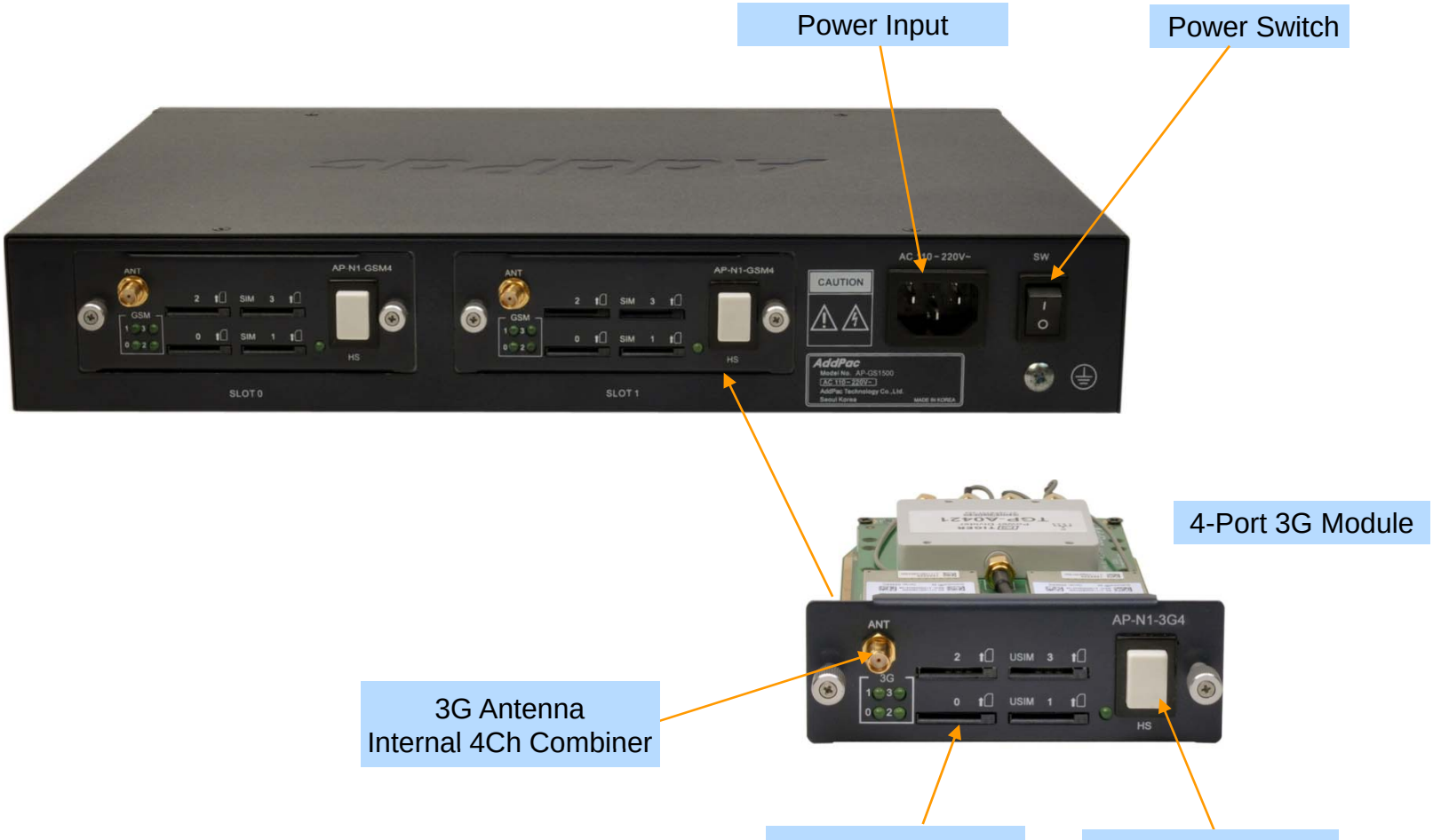
Hardware Specification

AP-GS1500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

Back Side View



Hardware Specification

AP-GS1500 Multi-Port 3G Gateway

RISC
CPU

High-end
DSP

Hardware Specification (Voice Module)

AP-GS1500 Multi-Port 3G Gateway

AP-N1-3G4 4-Port 3GModule	
AP-N1-GSM4 4-Port GSM Module	
AP-N1-CDMA4 4-Port CDMA Module	
AP-N1-FXS8 8-Port FXS Module	
AP-N1-FXO8 8-Port FXO Module	
AP-N1-FXS4O4 4-Port FXS&4-Port FXO Module	

AP-GS2000
3G Gateway

Main Features

AP-GS2000 Multi-Port 3G Gateway

- Three Module Slots for 4-Port 3G Module, GSM Module,4-Port CDMA Module 8FXS/8FXO Analog Interface (Up to 8-Port 3G +8FXS/8FXO Module, 12-Port 3G, etc)
- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Two(2)10/100Mbps Fast Ethernet
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Powerful Web based Management
- Rack Mountable Chassis with Internal Power Supply

Hardware Specification

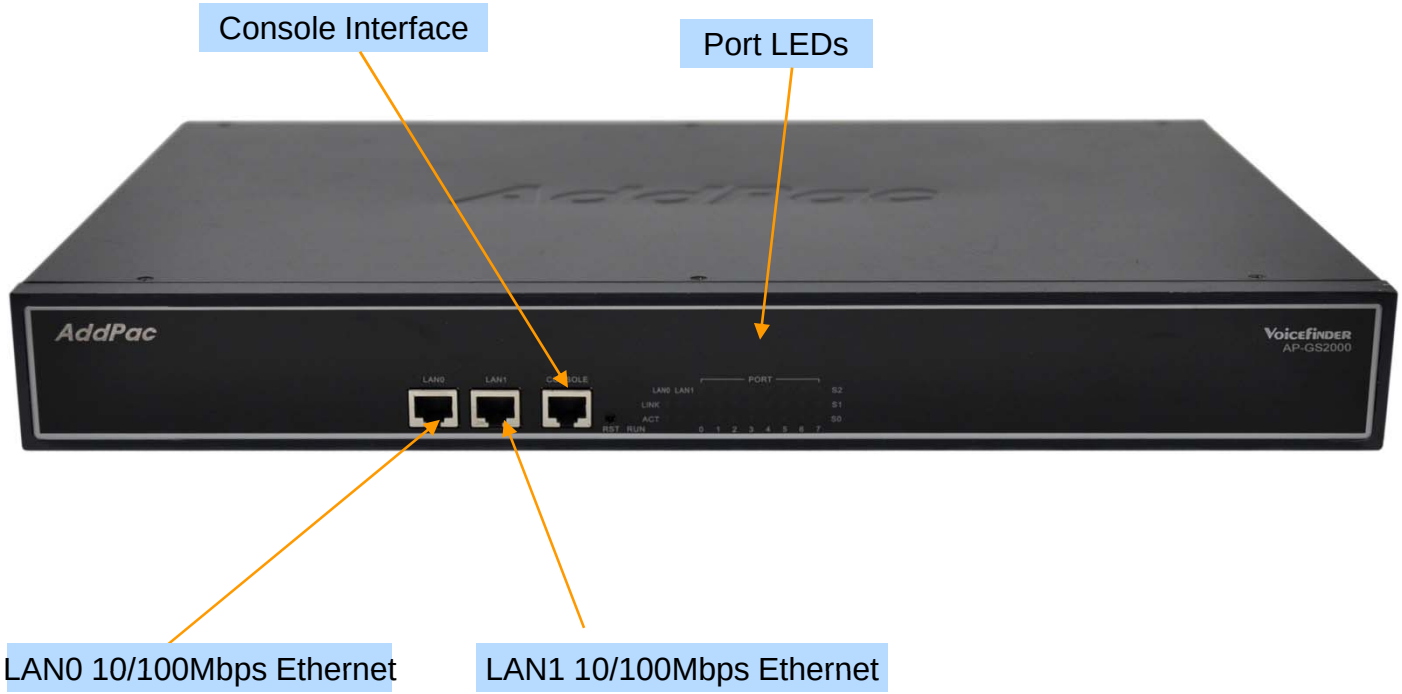
AP-GS2000 Multi-Port 3G Gateway

- RISC Microprocessor Computing Power
- Three Module Slot for 3G, GSM, CDMA, Analog/Digital Interface
- 4-Port 3G Module(AP-N1-3G4), Hot-Swap
  - One(1) 3G Antenna Interface (4 Channel Combiner), 4-Port USIM Card Slot
- 4-Port GSM Module(AP-N1-GSM4), Hot-Swap
  - One(1) GSM Antenna Interface (4 Channel Combiner), 4-Port SIM Card Slot
- 4-Port CDMA Module(AP-N1-CDMA4), Hot-Swap
  - One(1) CDMA Antenna Interface (4 Channel Combiner), 4-Port RUIM Card Slot
- VoIP Interface Module, Hot-Swap
  - 8-Port FXS Module, Digital E1/T1 Module (AP-N1-FXS8, AP-N1-FXO8, etc)
- Network Interface

  -Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Internal Power Supply

Hardware Specification

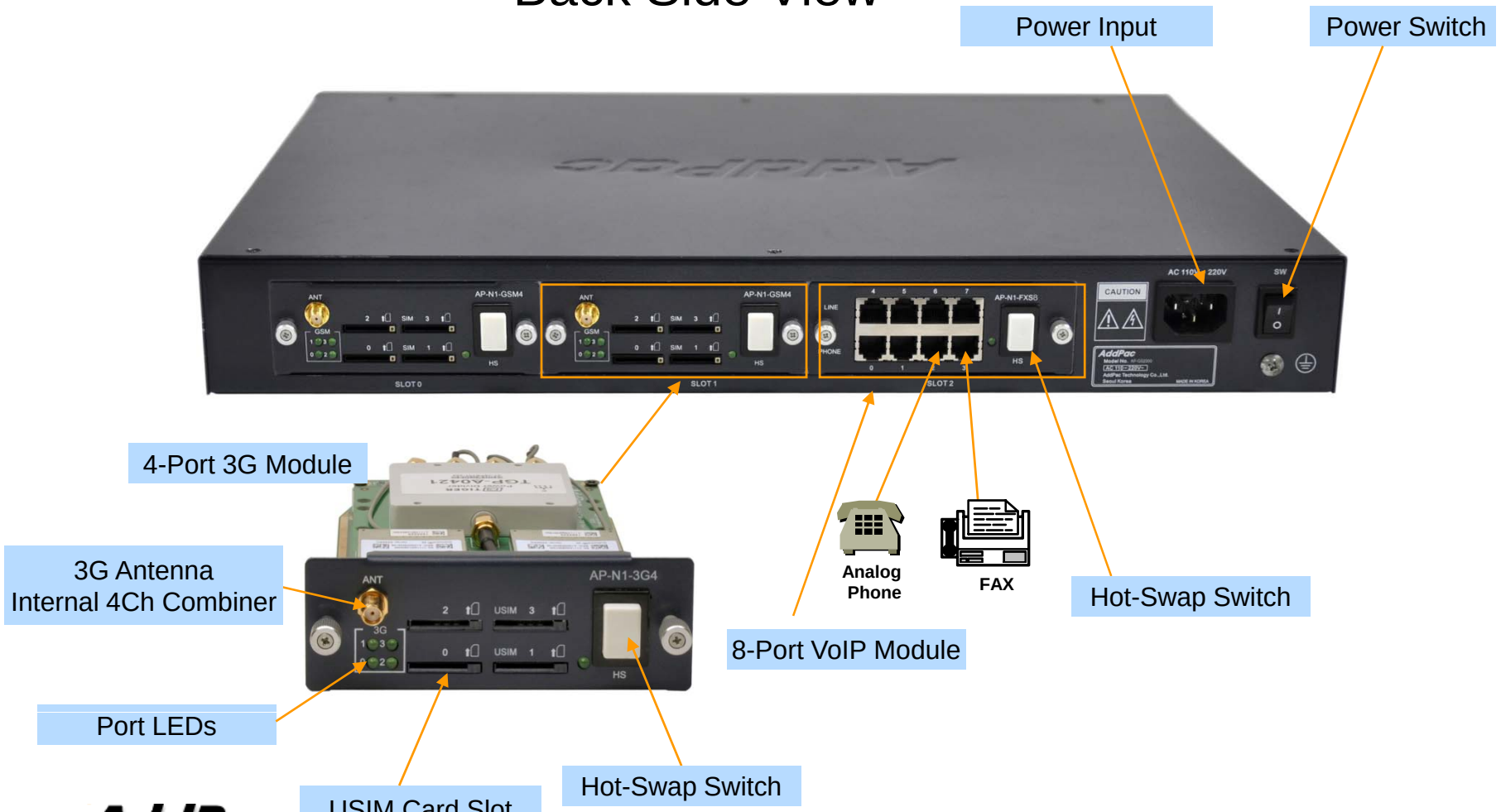
Front Side View



Hardware Specification

AP-GS2000 Multi-Port 3G Gateway

Back Side View



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Hardware Specification

AP-GS2000 Multi-Port 3G Gateway

Hardware Specification (Voice Module)

AP-GS2000 Multi-Port 3G Gateway

AP-N1-3G4 4-Port 3G Module	
AP-N1-GSM4 4-Port GSM Module	
AP-N1-CDMA4 4-Port CDMA Module	
AP-N1-FXS8 8-Port FXS Module	
AP-N1-FXO8 8-Port FXO Module	
AP-N1-FXS4O4 4-Port FXS&4-Port FXO Module	
AP-N1-E1 1-Port Digital E1/T1 Module	

AP-GS2500
3G Gateway

Main Features

AP-GS2500 Multi-Port 3G Gateway

- Four(4) Module Slots for 4-Port 3G Module, 4-Port GSM Module, 8FXS/8FXO Analog Interface (Up to 12-Port 3G +8FXS/8FXO Module, 16-Port 3G)
- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Two(2)10/100Mbps Fast Ethernet
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) & NMS for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Powerful Web based Management
- Rack Mountable Chassis with Internal Power Supply

Hardware Specification

AP-GS2500 Multi-Port 3G Gateway

- RISC Microprocessor Computing Power
- Four(4) Module Slot for 3G, GSM, CDMA, Analog/Digital Interface
- 4-Port 3G Module(AP-N1-3G4), Hot-Swap
  - One(1) 3G Antenna Interface (4 Channel Combiner), 4-Port USIM Card Slot
- 4-Port GSM Module(AP-N1-GSM4), Hot-Swap
  - One(1) GSM Antenna Interface (4 Channel Combiner), 4-Port SIM Card Slot
- 4-Port CDMA Module(AP-N1-CDMA4), Hot-Swap
  - One(1) CDMA Antenna Interface (4 Channel Combiner), 4-Port RUIM Card Slot
- VoIP Interface Module, Hot-Swap
  - 8-Port FXS Module, Digital E1/T1 Module (AP-N1-FXS8, AP-N1-FXO8, etc)
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Internal Power Supply

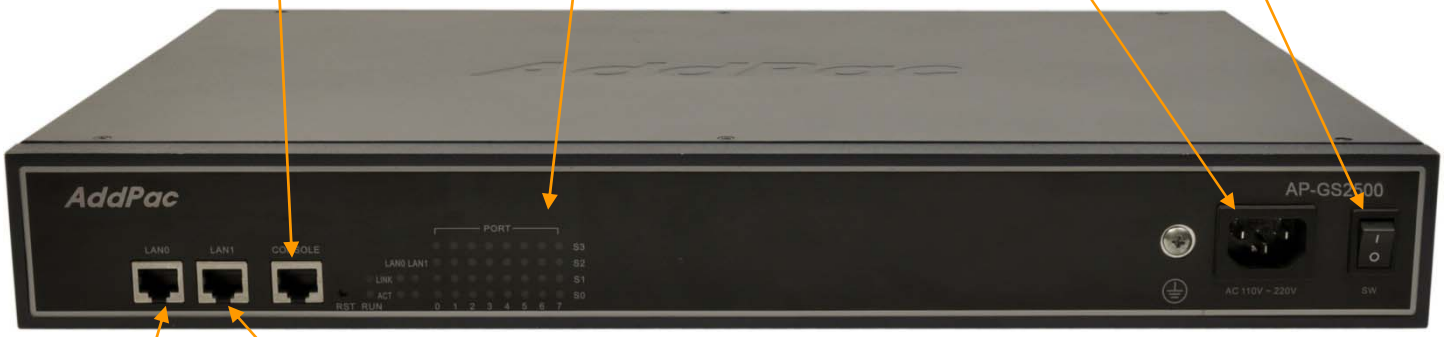
Hardware Specification

AP-GS2500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

Front Side View



Hardware Specification

AP-GS2500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

Back Side View

4-Port 3G Module

3G Antenna
Internal 4Ch Combiner

Port LEDs

USIM Card Slot

Hot-Swap Switch

Hardware Specification

AP-GS2500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

Back Side View

8-Port VoIP Module

Hardware Specification

AP-GS2500 Multi-Port 3G Gateway

RISC
CPU

High-end
DSP

Hardware Specification(Voice Module)

AP-GS2500 Multi-Port 3G Gateway

AP-N1-3G4 4-Port 3G Module	
AP-N1-GSM4 4-Port GSM Module	
AP-N1-CDMA4 4-Port CDMA Module	
AP-N1-FXS8 8-Port FXS Module	
AP-N1-FXO8 8-Port FXO Module	
AP-N1-FXS4O4 4-Port FXS&4-Port FXO Module	
AP-N1-E1 1-Port Digital E1/T1 Module	

AP-GS3000
3G Gateway

Main Features

AP-GS3000 Multi-Port 3G Gateway

- Ten(10) Module Slots for 4-Port 3G Module, 4-Port GSM Module, 8FXS/8FXO Analog Interface (Up to 36-Port 3G, Up to 36-Port GSM, Up to 36-Port CDMA, Digital E1/T1 Module, CPU Module)
- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Two(2)10/100Mbps Fast Ethernet
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) & NMS for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Powerful Web based Management
- Rack Mountable Chassis with Internal Power Supply

Hardware Specification

AP-GS3000 Multi-Port 3G Gateway

- RISC Microprocessor Computing Power
- Ten(10) Module Slot for 3G, GSM, CDMA, Analog/Digital Interface
- 4-Port 3G Module(AP-N1-3G4), Hot-Swap
  - One(1) 3G Antenna Interface (4 Channel Combiner), 4-Port USIM Card Slot
- 4-Port GSM Module(AP-N1-GSM4), Hot-Swap
  - One(1) GSM Antenna Interface (4 Channel Combiner), 4-Port SIM Card Slot
- 4-Port CDMA Module(AP-N1-CDMA4), Hot-Swap
  - One(1) CDMA Antenna Interface (4 Channel Combiner), 4-Port RUIM Card Slot
- VoIP Interface Module, Hot-Swap
  - 8-Port FXS Module, Digital E1/T1 Module (AP-N1-FXS8, AP-N1-FXO8, etc)
- Network Interface

  -Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Internal Power Supply

Hardware Specification

AP-GS3000 Multi-Port 3G Gateway

Front Side View

4-Port 3G Module

3G Antenna
Internal 4Ch Combiner

Port LEDs

USIM Card Slot

Hot-Swap Switch

CPU Module

VoIP Digital E1/T1 Module

Hardware Specification

AP-GS3000 Multi-Port 3G Gateway

Back Side View

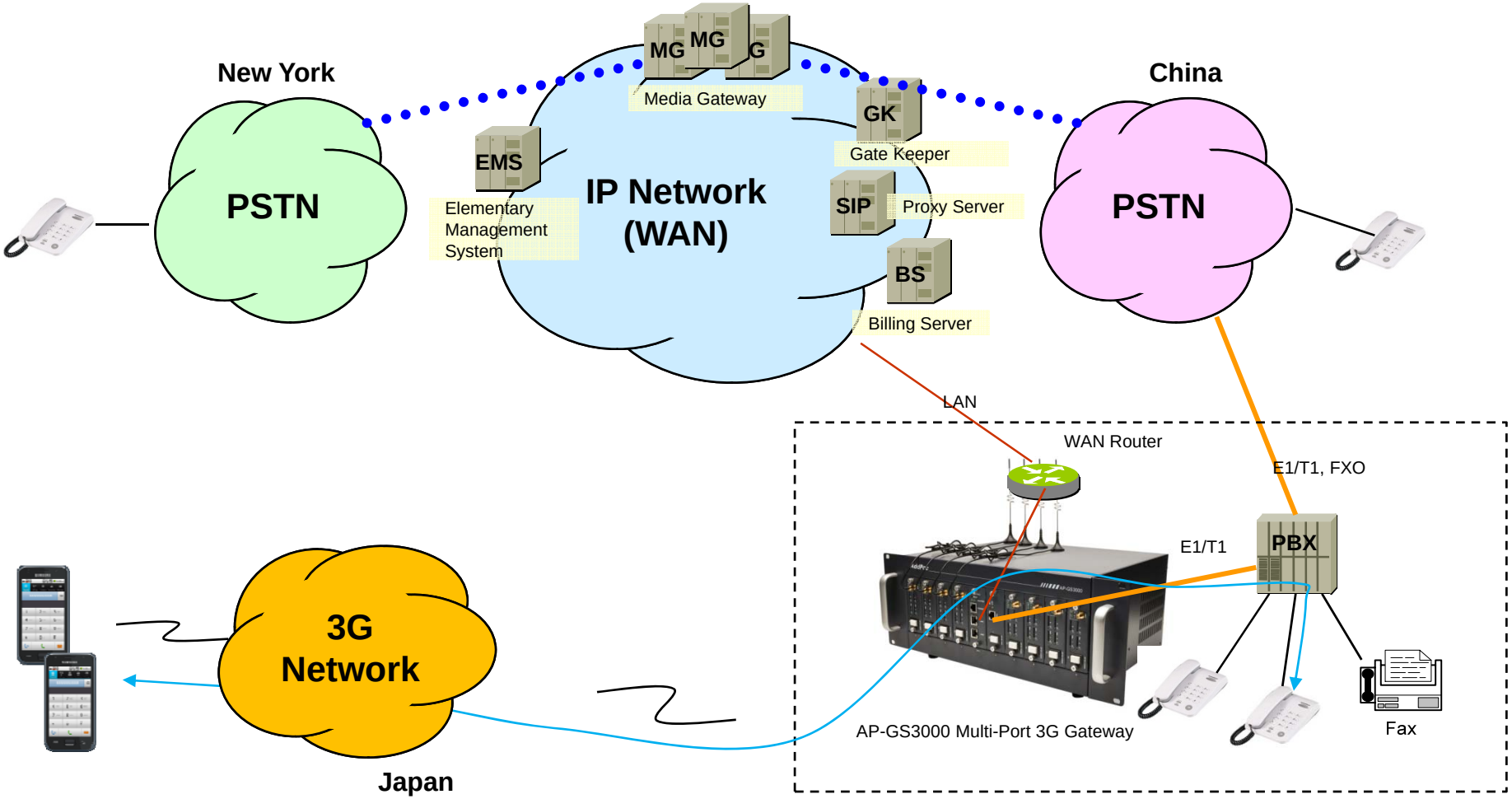
Hardware Specification(Voice Module)

AP-GS3000 Multi-Port 3G Gateway

AP-N1-3G4 4-Port 3G Module	
AP-N1-GSM4 4-Port GSM Module	
AP-N1-CDMA4 4-Port CDMA Module	
AP-N1-FXS8 8-Port FXS Module	
AP-N1-FXO8 8-Port FXO Module	
AP-N1-FXS4O4 4-Port FXS&4-Port FXO Module	
AP-N1-E1 1-Port Digital E1/T1 Module	

Network Service Diagram

AP-GS3000 Multi-Port 3G Gateway



AP-GS3500
3G Gateway

Main Features

AP-GS3500 Multi-Port 3G Gateway

- Ten(10) Module Slots for 4-Port 3G Module, 4-Port GSM Module, 8FXS/8FXO Analog Interface (Up to 36-Port 3G, 36-Port GSM, Up to 36-Port CDMA, Digital E1/T1 Module, CPU Module)
- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Two(2)10/100Mbps Fast Ethernet
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) & NMS for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Powerful Web based Management
- Rack Mountable Chassis with Dual Internal Power Supply

Hardware Specification

AP-GS3500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

- RISC Microprocessor Computing Power
- Ten(10) Module Slot for 3G, GSM, CDMA, Analog/Digital Interface
- 4-Port 3G Module(AP-N1-3G4), Hot-Swap
  - One(1) 3G Antenna Interface (4 Channel Combiner), 4-Port USIM Card Slot
- 4-Port GSM Module(AP-N1-GSM4), Hot-Swap
  - One(1) GSM Antenna Interface (4 Channel Combiner), 4-Port SIM Card Slot
- 4-Port CDMA Module(AP-N1-CDMA4), Hot-Swap
  - One(1) CDMA Antenna Interface (4 Channel Combiner), 4-Port RUIM Card Slot
- VoIP Interface Module, Hot-Swap
  - 8-Port FXS Module, Digital E1/T1 Module (AP-N1-FXS8, AP-N1-FXO8, etc)
- Network Interface

  -Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Dual Power Supply

Hardware Specification

AP-GS3500 Multi-Port 3G Gateway

RISC **CPU**

High-end **DSP**

Front Side View

4-Port 3G Module

3G Antenna
Internal 4Ch Combiner

Port LEDs

USIM Card Slot

Hot-Swap Switch

CPU Module

VoIP Digital E1/T1 Module

Hardware Specification

AP-GS3500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

Back Side View

Hardware Specification(Voice Module)

AP-GS3500 Multi-Port 3G Gateway

RISC CPU

High-end DSP

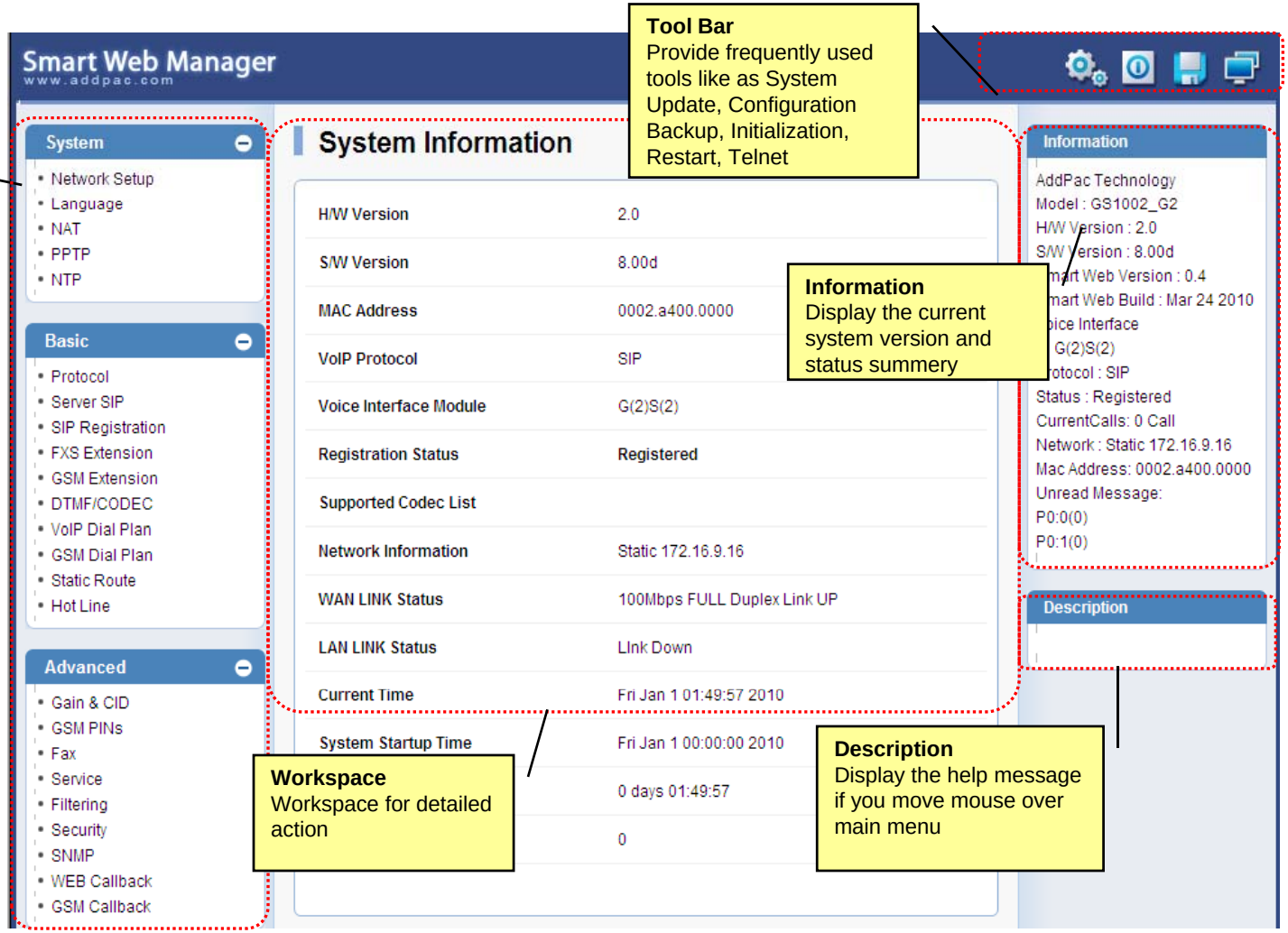
AP-N1-3G4 4-Port 3G Module	
AP-N1-GSM4 4-Port GSM Module	
AP-N1-CDMA4 4-Port CDMA Module	
AP-N1-FXS8 8-Port FXS Module	
AP-N1-FXO8 8-Port FXO Module	
AP-N1-FXS4O4 4-Port FXS&4-Port FXO Module	
AP-N1-E1 1-Port Digital E1/T1 Module	

Smart Web Manager for 3G Gateway

Contents

- Main Page Layout
- System Configuration
  - Network Setup, Language, NAT, PPTP, NTP
- Basic Configuration
  - Protocol, SIP Server , FXS Extension, GSM Extension
  - DTMF/CODEC, VoIP Dial Plan, GSM Dial Plan, Static Routing, Hot Line
- Advanced Configuration
  - Gain/CID, GSM PINs, FAX, Service, Filtering, Security
  - GSM Web Callback, GSM Callback
- Miscellaneous Configuration
  - Call Status, System Status, Alarm Status, GSM Status
  - Call Log, System Log, Ping, BTS Selection, GSM BTS Info
- LCR(Least Cost Routing)
  - Black & White List, Time Interval, Tariff Group, LCR Test
- SMS
  - Inbox, SMS New Message

Main Page Layout



Main Menu
For easy system setup, provide the various menu and category

Tool Bar
Provide frequently used tools like as System Update, Configuration Backup, Initialization, Restart, Telnet

Information
Display the current system version and status summery

Workspace
Workspace for detailed action

Description
Display the help message if you move mouse over main menu

System – Network Setup

Host Name
Create a representative name for the site to be installed

Static IP
This is static IP mode. Specify the addressed IP from the service provider

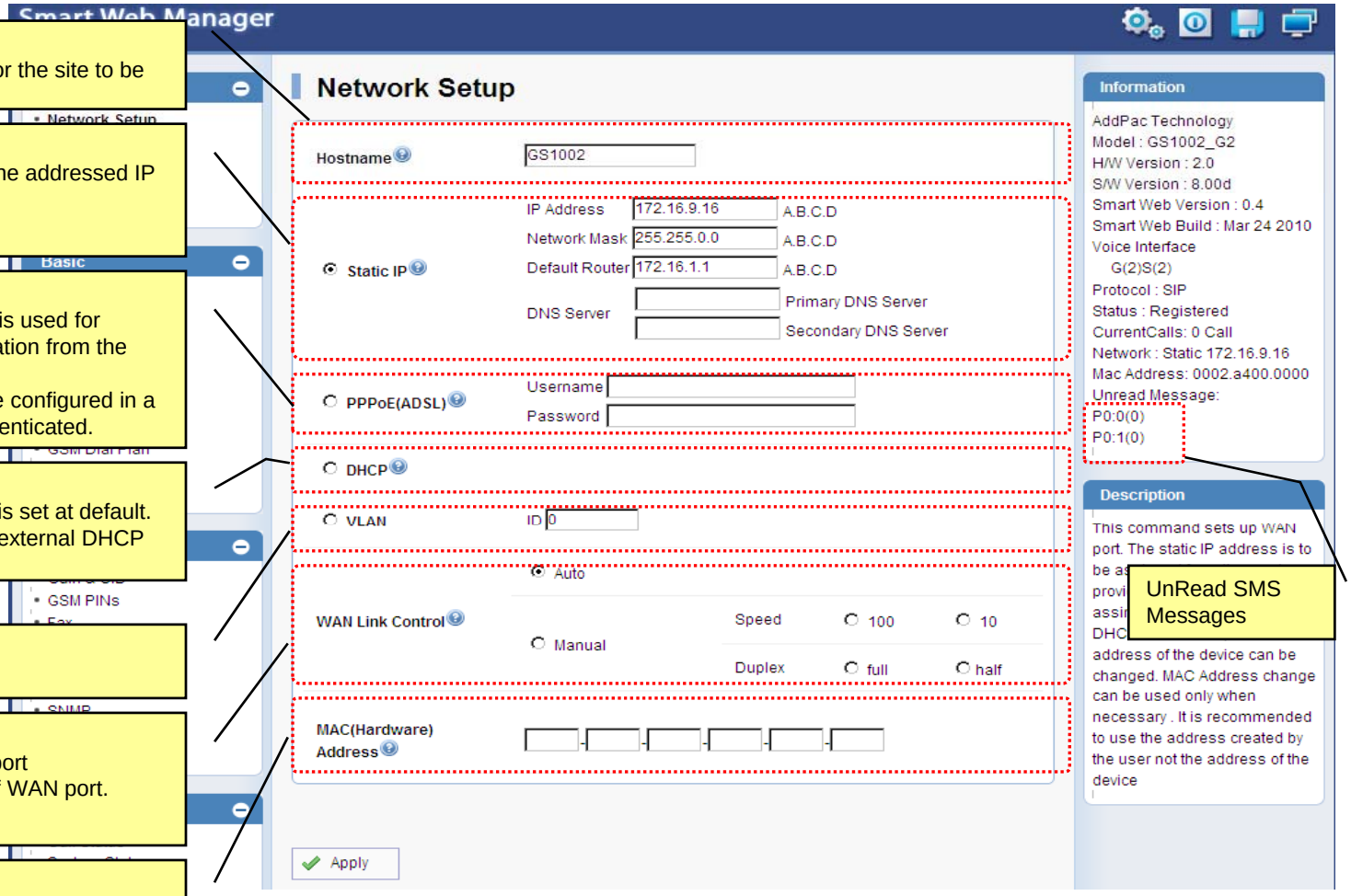
PPPoE
This is ADSL mode. This mode is used for addressing IP though authentication from the modem.
At this time, the modem must be configured in a way that the device can be authenticated.

DHCP
This is dynamic IP mode which is set at default. The IP can addressed from the external DHCP server.

VLAN
Configure VLAN mode and ID.

WAN Link
Controls and recognizes WAN port
Specify the connection speed of WAN port. connection automatically.

MAC
Change MAC address of WAN interface. Without address entry, use the basic MAC Address.

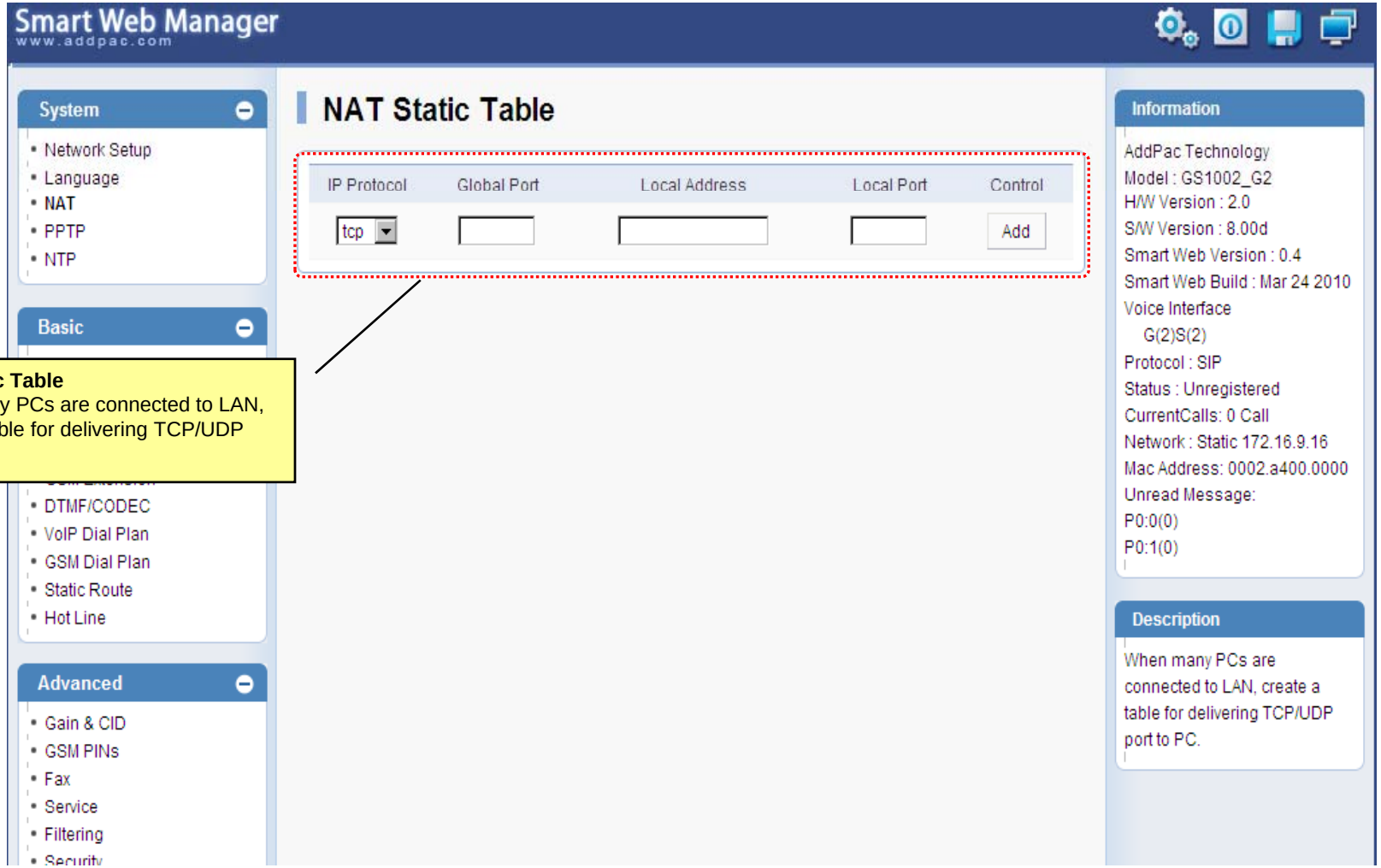


UnRead SMS Messages

System - Language

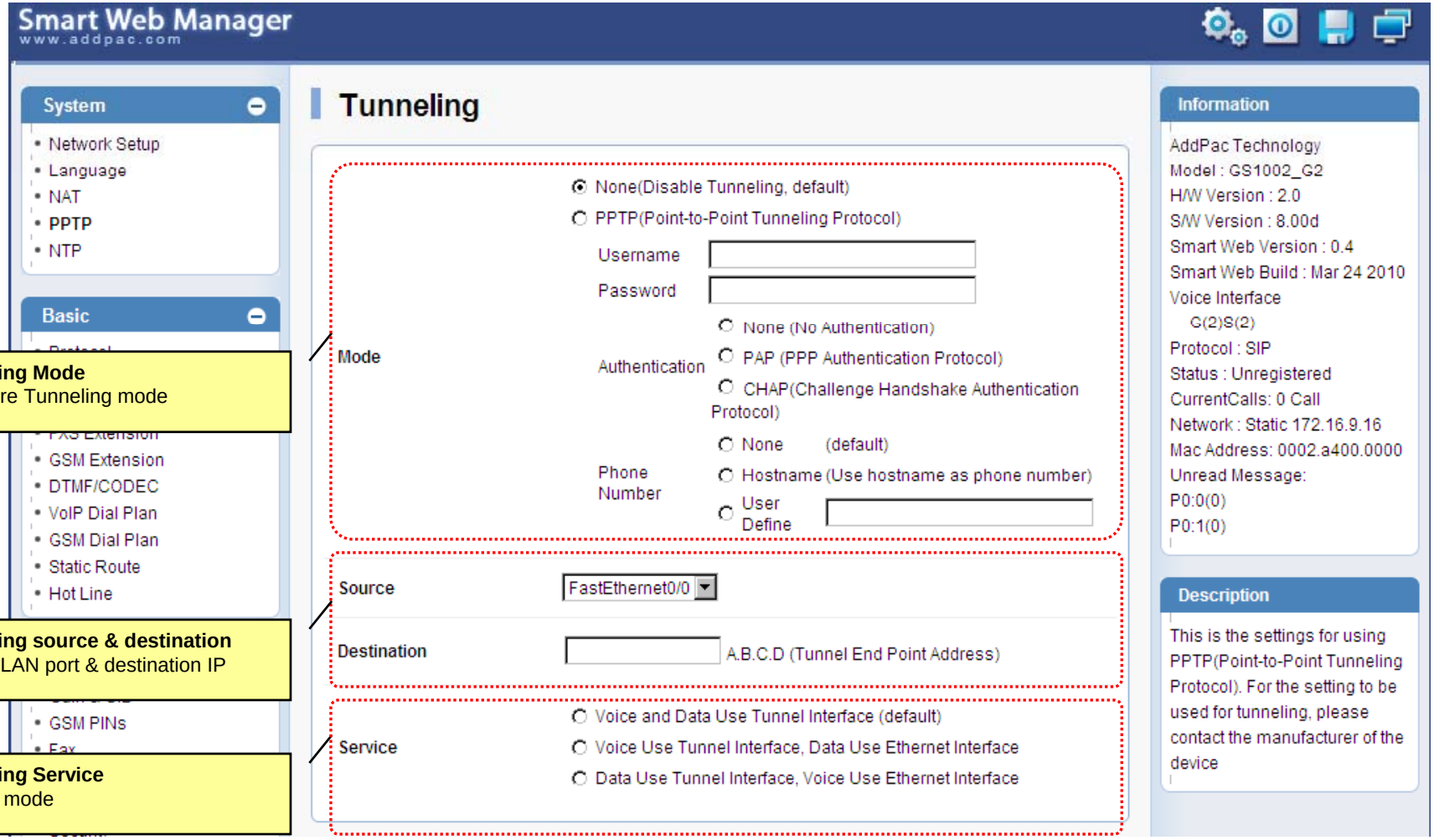
Configure Language
English, Korea

System - NAT



NAT Static Table
When many PCs are connected to LAN, create a table for delivering TCP/UDP port to PC

System - PPTP

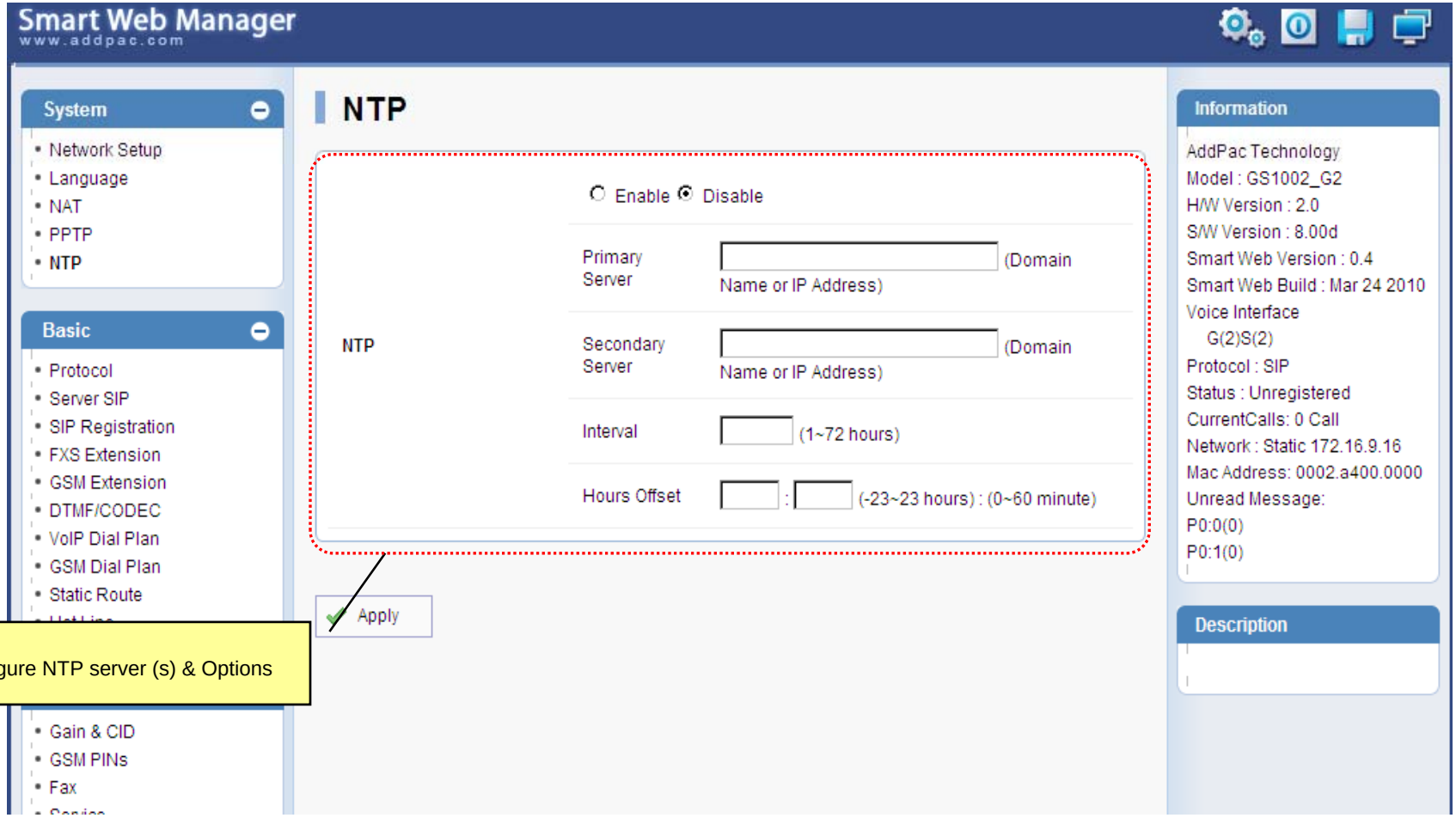


Tunneling Mode
Configure Tunneling mode

Tunneling source & destination
Source LAN port & destination IP

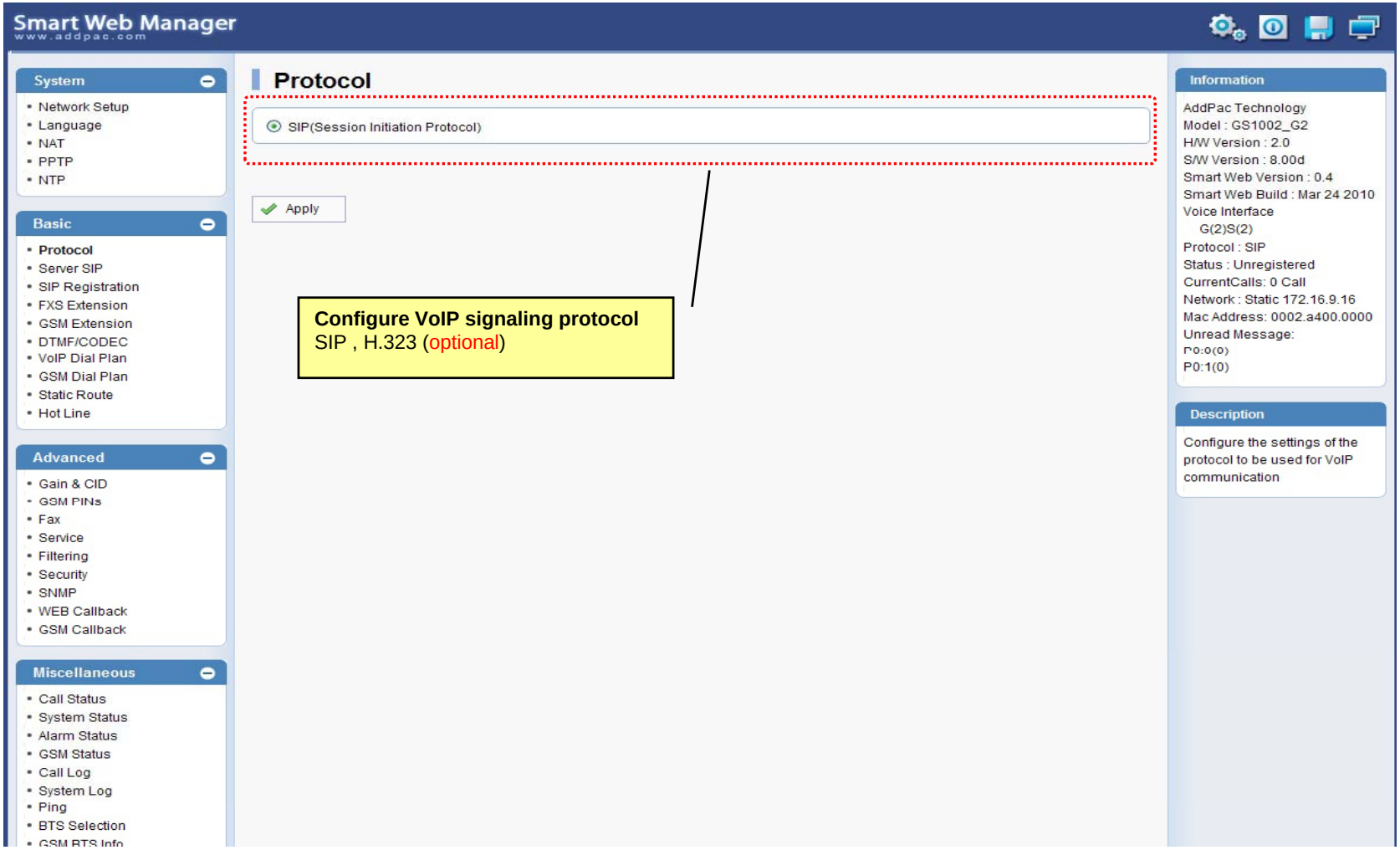
Tunneling Service
Service mode

System - NTP

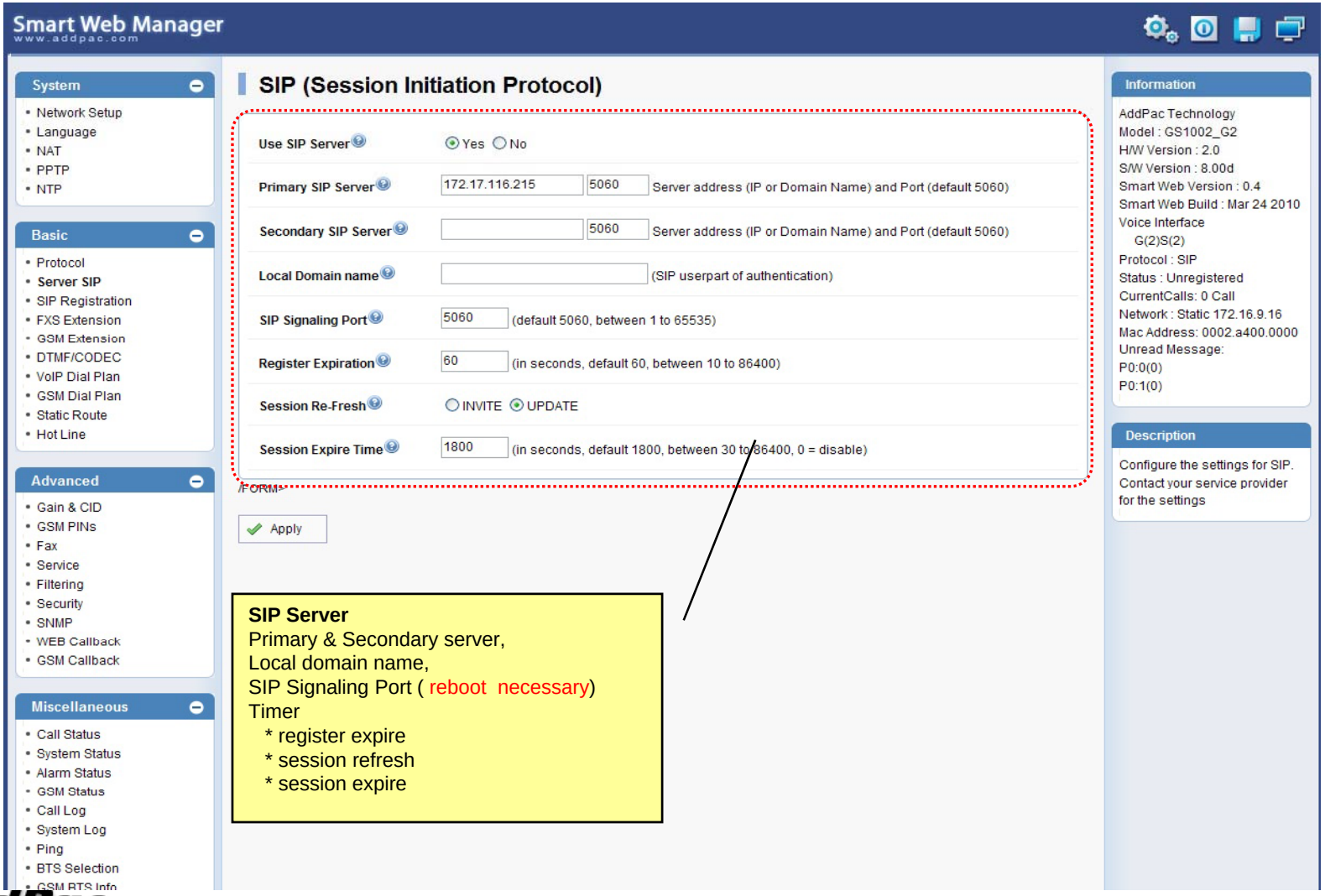


NTP
Configure NTP server (s) & Options

Basic - Protocol

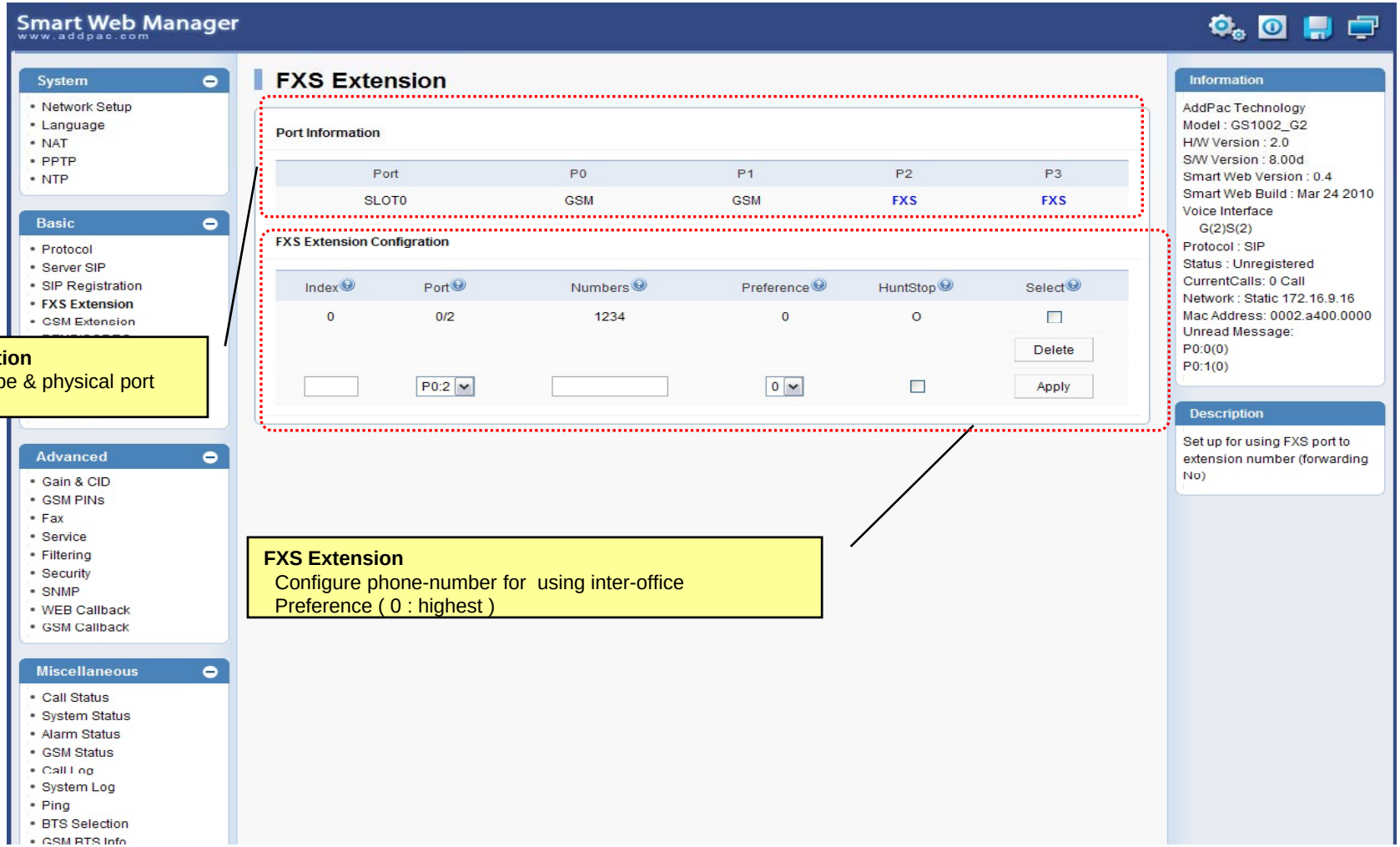


Basic – SIP Server



SIP Server
Primary & Secondary server,
Local domain name,
SIP Signaling Port (reboot necessary)
Timer
* register expire
* session refresh
* session expire

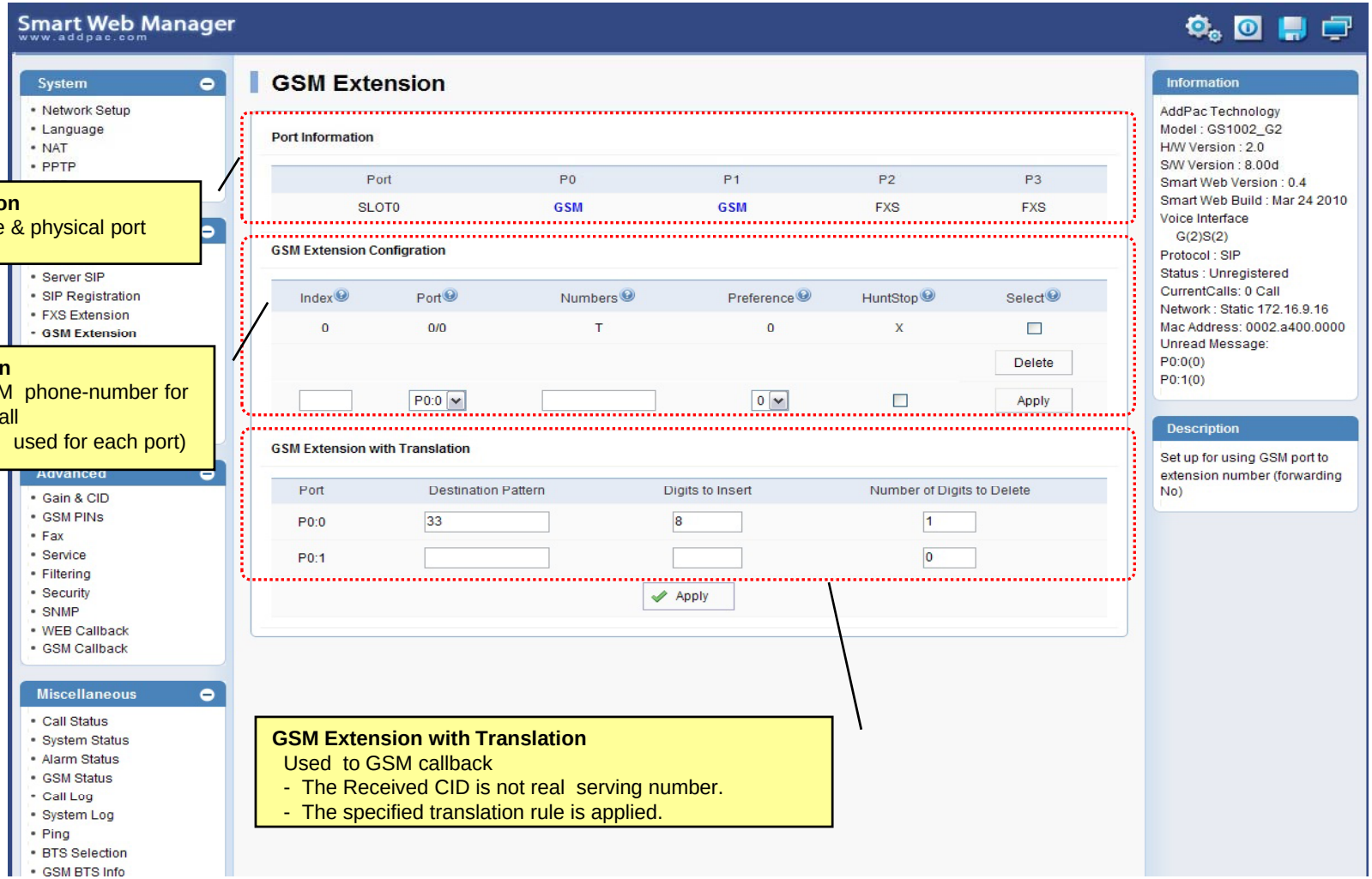
Basic – FXS Extension



Port Information
voice port type & physical port

FXS Extension
Configure phone-number for using inter-office
Preference (0 : highest)

Basic – GSM Extension

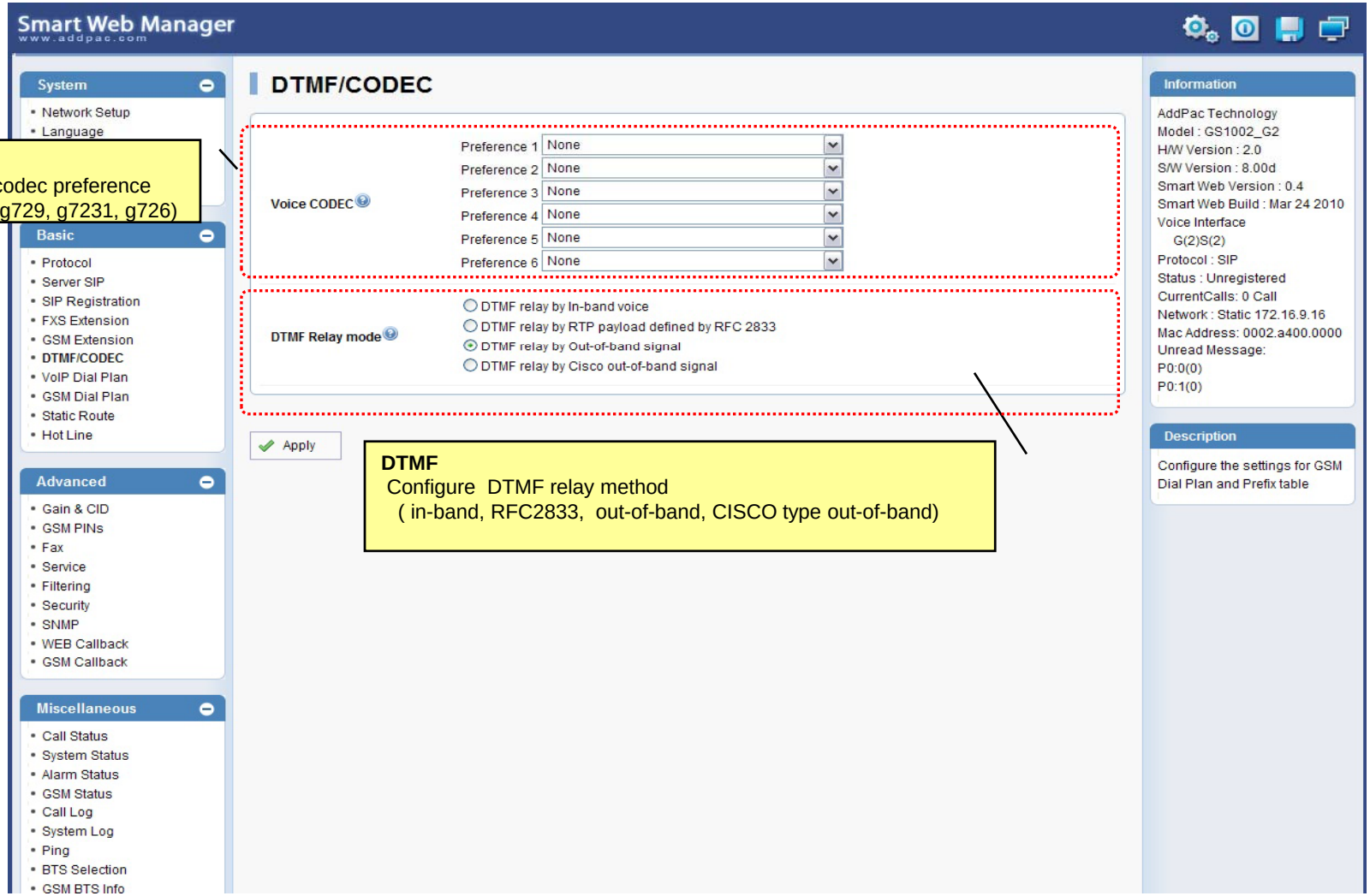


Port Information
voice port type & physical port

GSM Extension
Configure GSM phone-number for receiving a call
(usually 'T' is used for each port)

GSM Extension with Translation
Used to GSM callback
- The Received CID is not real serving number.
- The specified translation rule is applied.

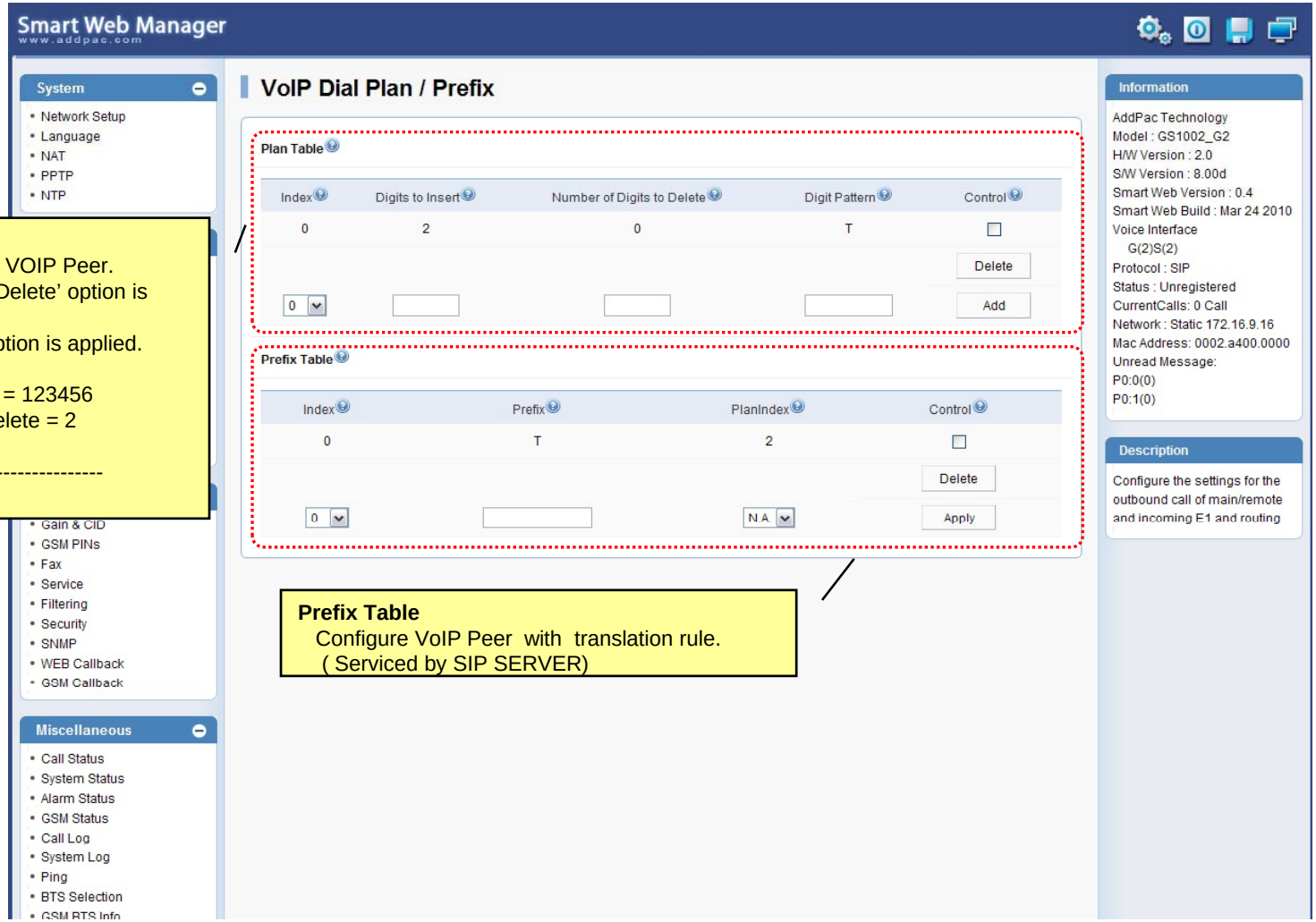
Basic – DTMF/CODEC



CODEC
Configure voice codec preference
(g711a, g711u, g729, g7231, g726)

DTMF
Configure DTMF relay method
(in-band, RFC2833, out-of-band, CISCO type out-of-band)

Basic – VoIP Dial Plan



VoIP PLAN

Configure translation rule for VOIP Peer.

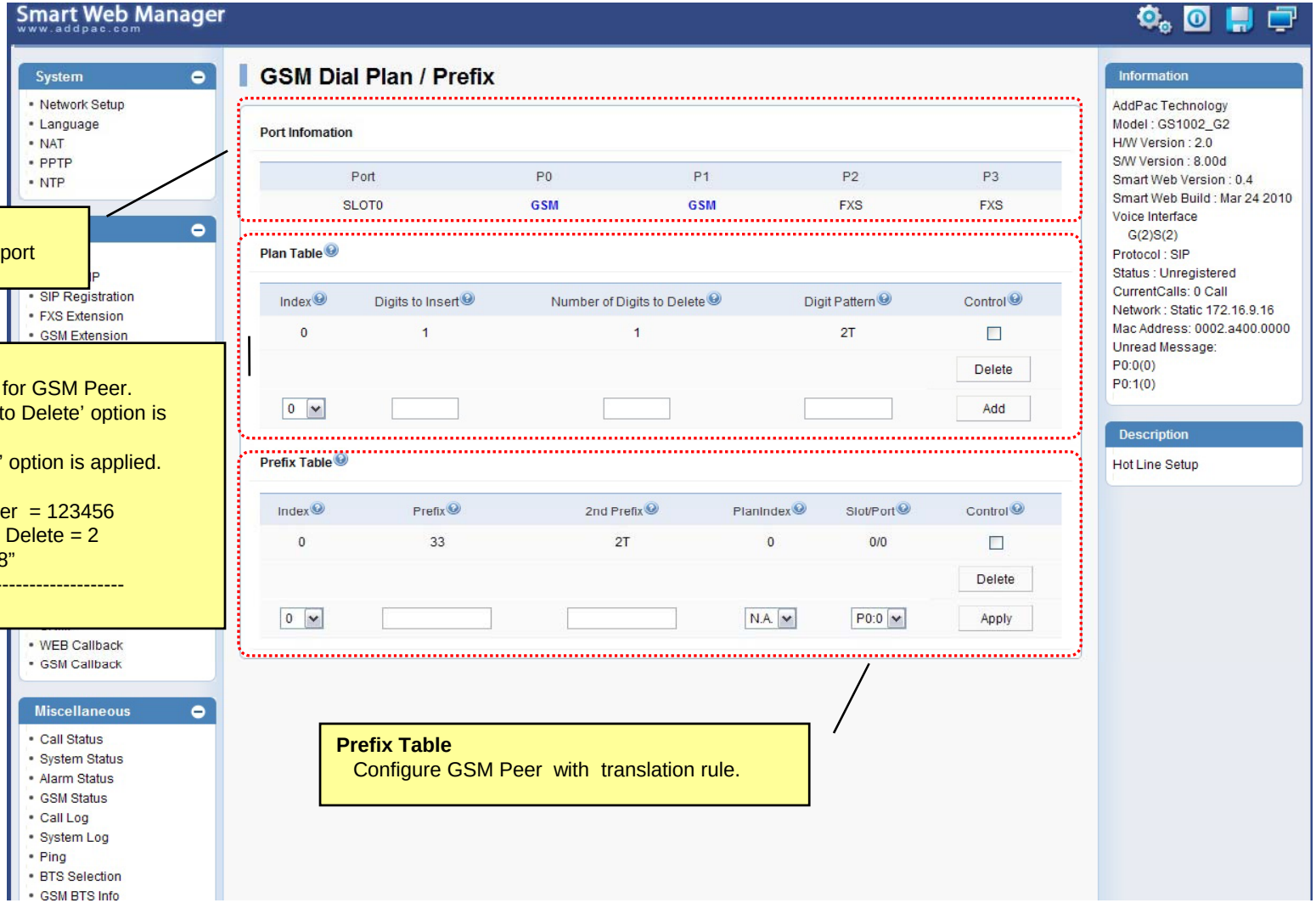
- first, 'Number of Digits to Delete' option is applied.
- second, 'Digits to Insert' option is applied.

(ex) Origin called Number = 123456
Number of Digits to Delete = 2
Digits to Insert = "88"
---
result = 883456

Prefix Table

Configure VoIP Peer with translation rule.
(Serviced by SIP SERVER)

Basic – GSM Dial Plan



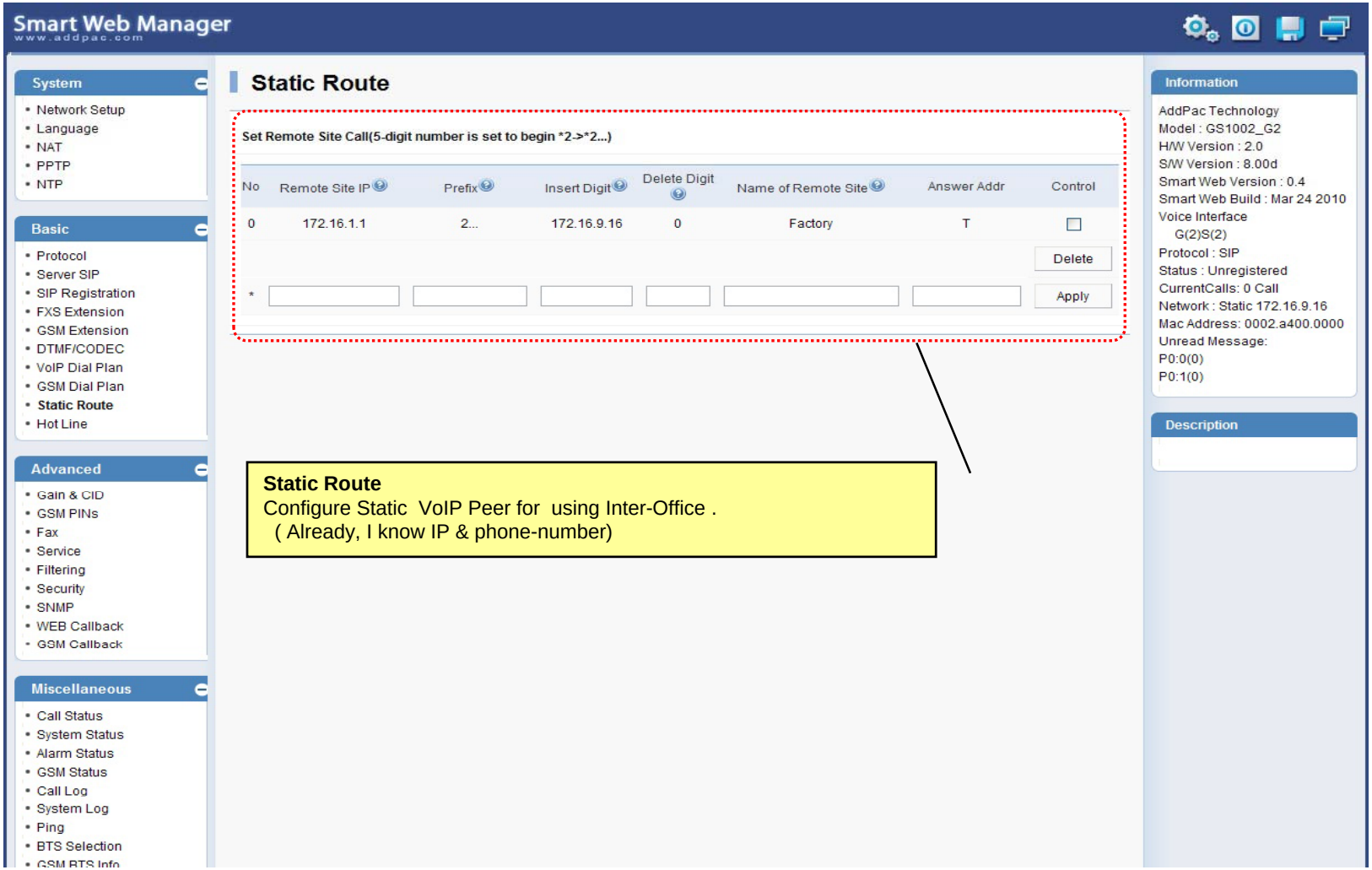
Port Information
voice port type & physical port

VoIP PLAN
Configure translation rule for GSM Peer.
- first, 'Number of Digits to Delete' option is applied.
- second, 'Digits to Insert' option is applied.

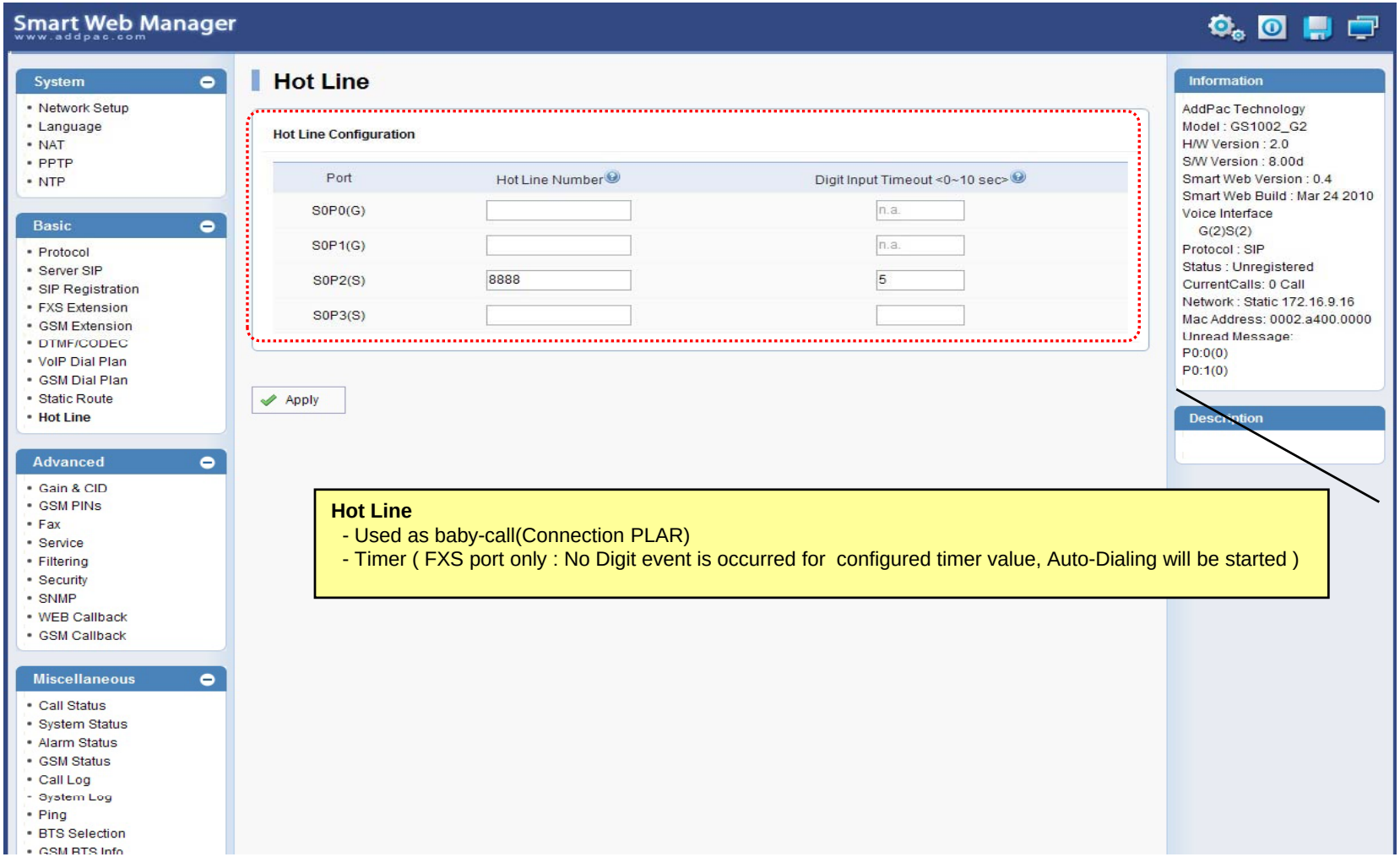
(ex) Origin called Number = 123456
Number of Digits to Delete = 2
Digits to Insert = "88"
---
result = 883456

Prefix Table
Configure GSM Peer with translation rule.

Basic – Static Route

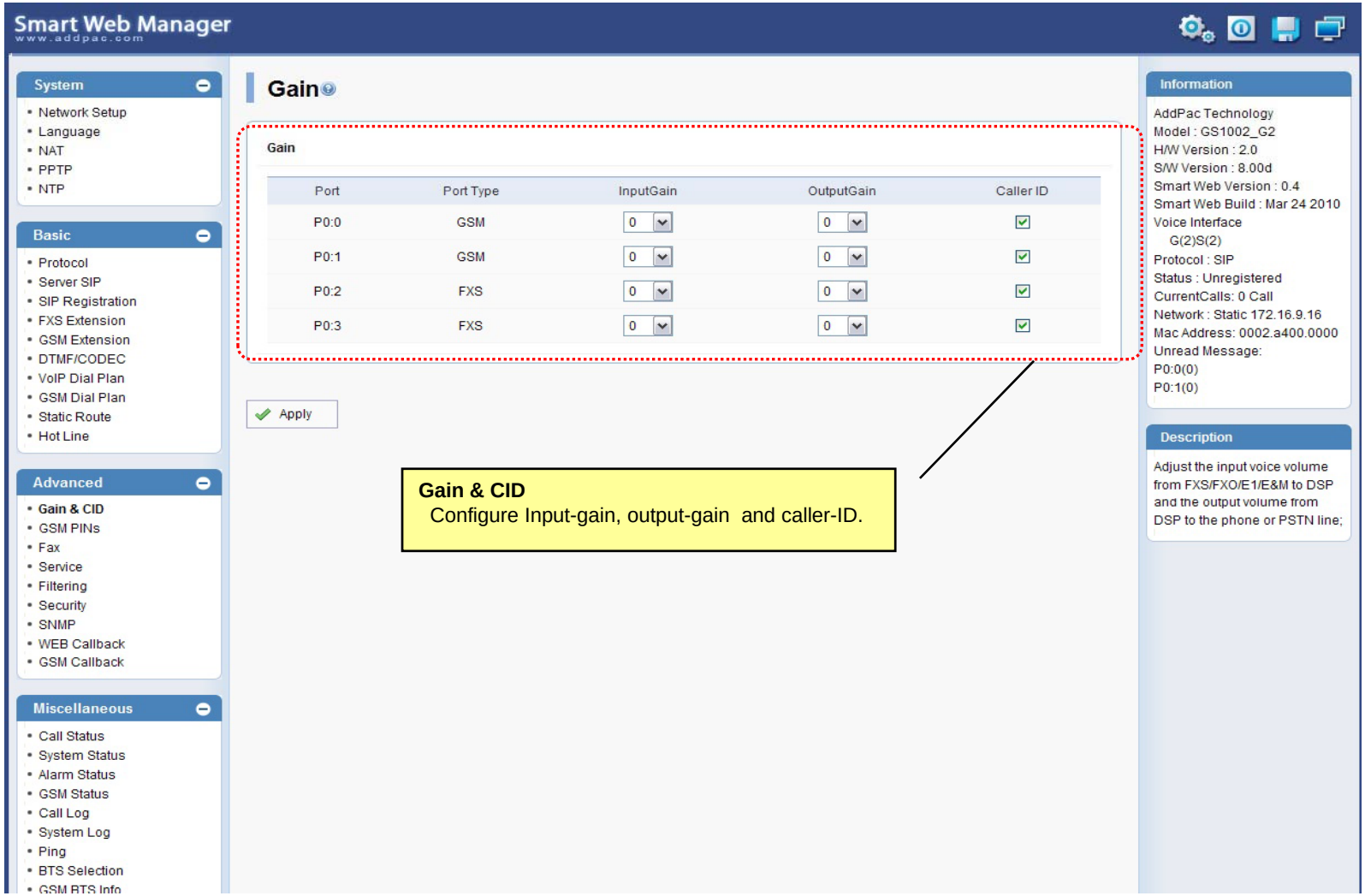


Basic – Hot Line

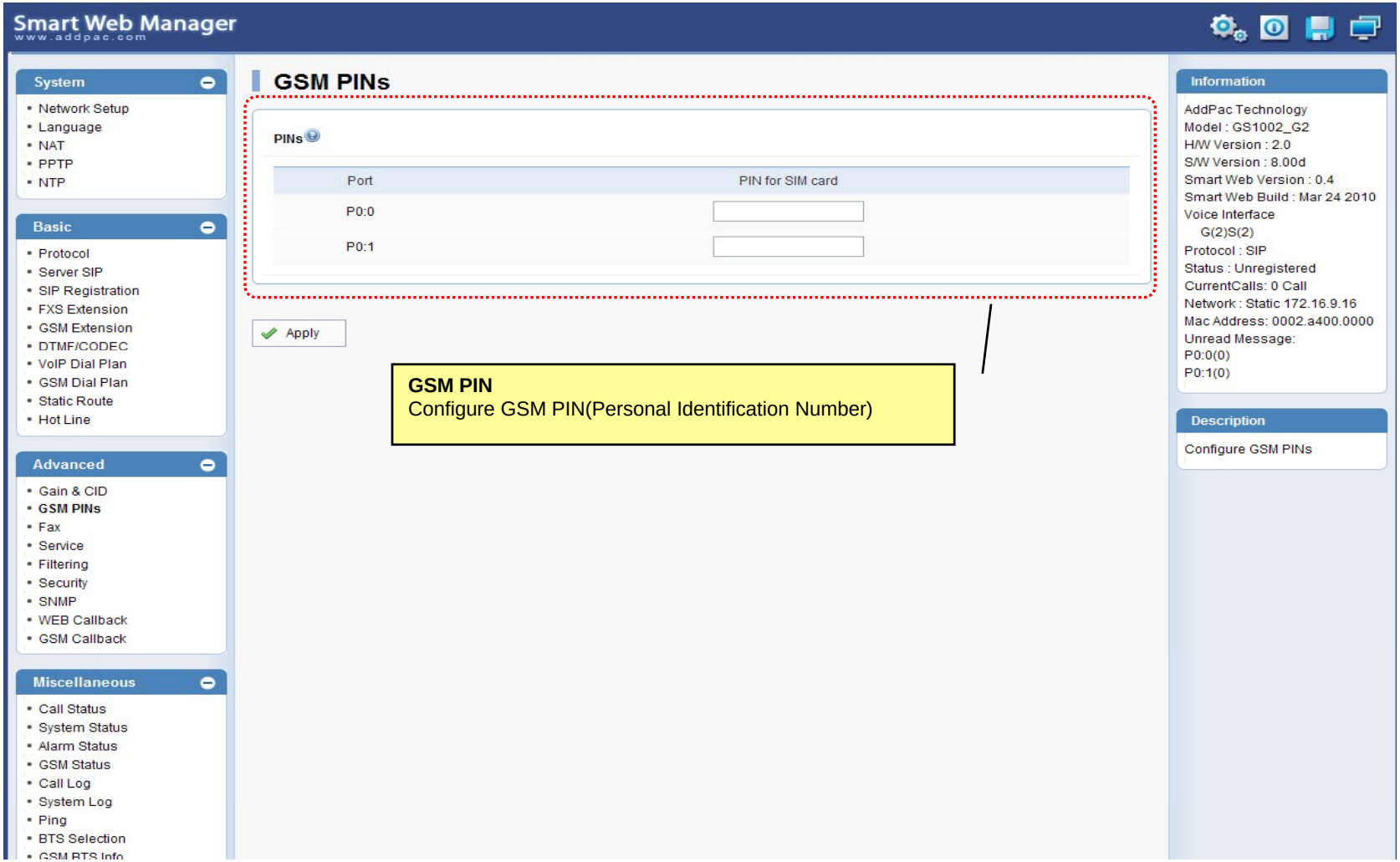


Hot Line
- Used as baby-call(Connection PLAR)
- Timer (FXS port only : No Digit event is occurred for configured timer value, Auto-Dialing will be started)

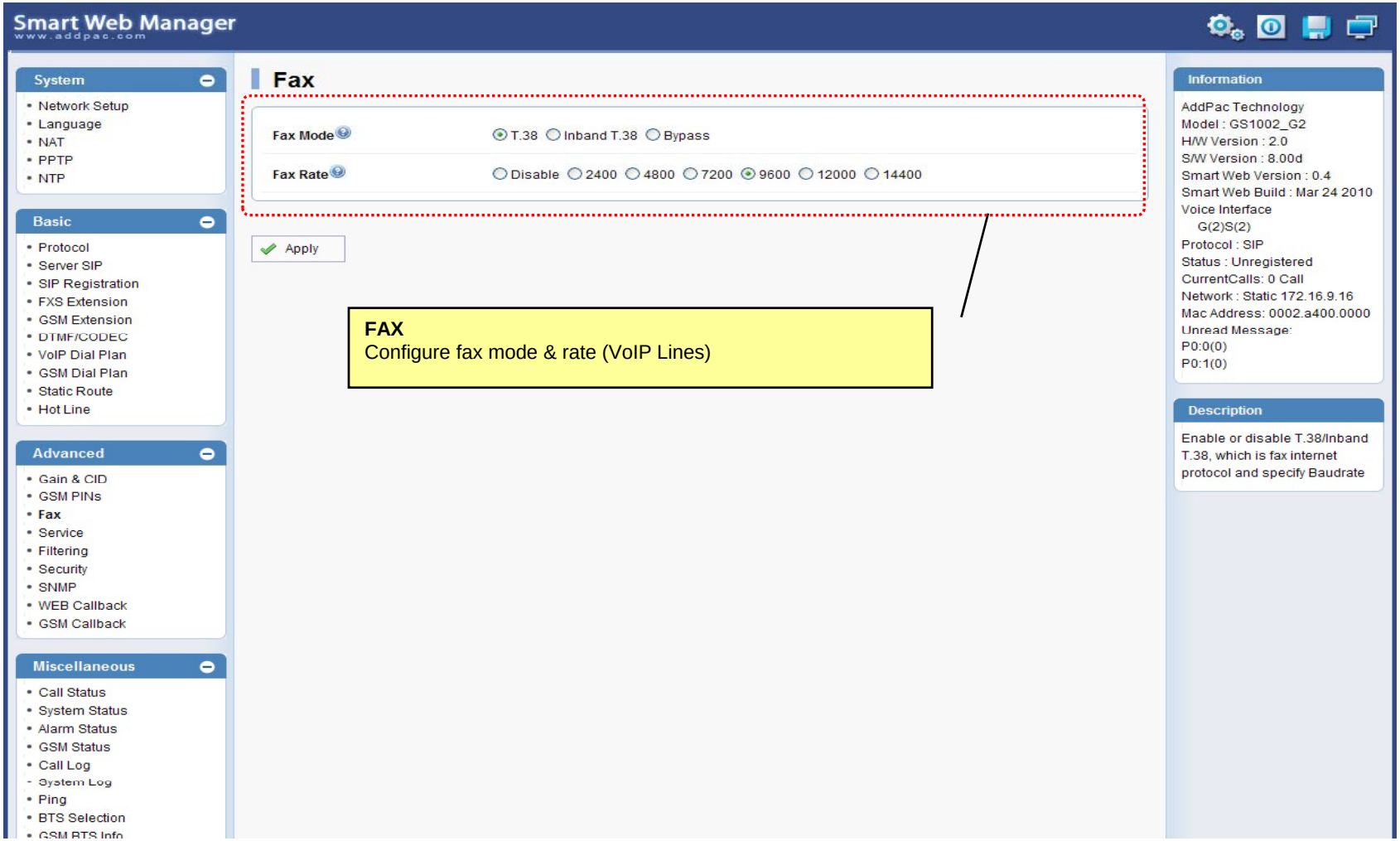
Advanced – Gain & CID



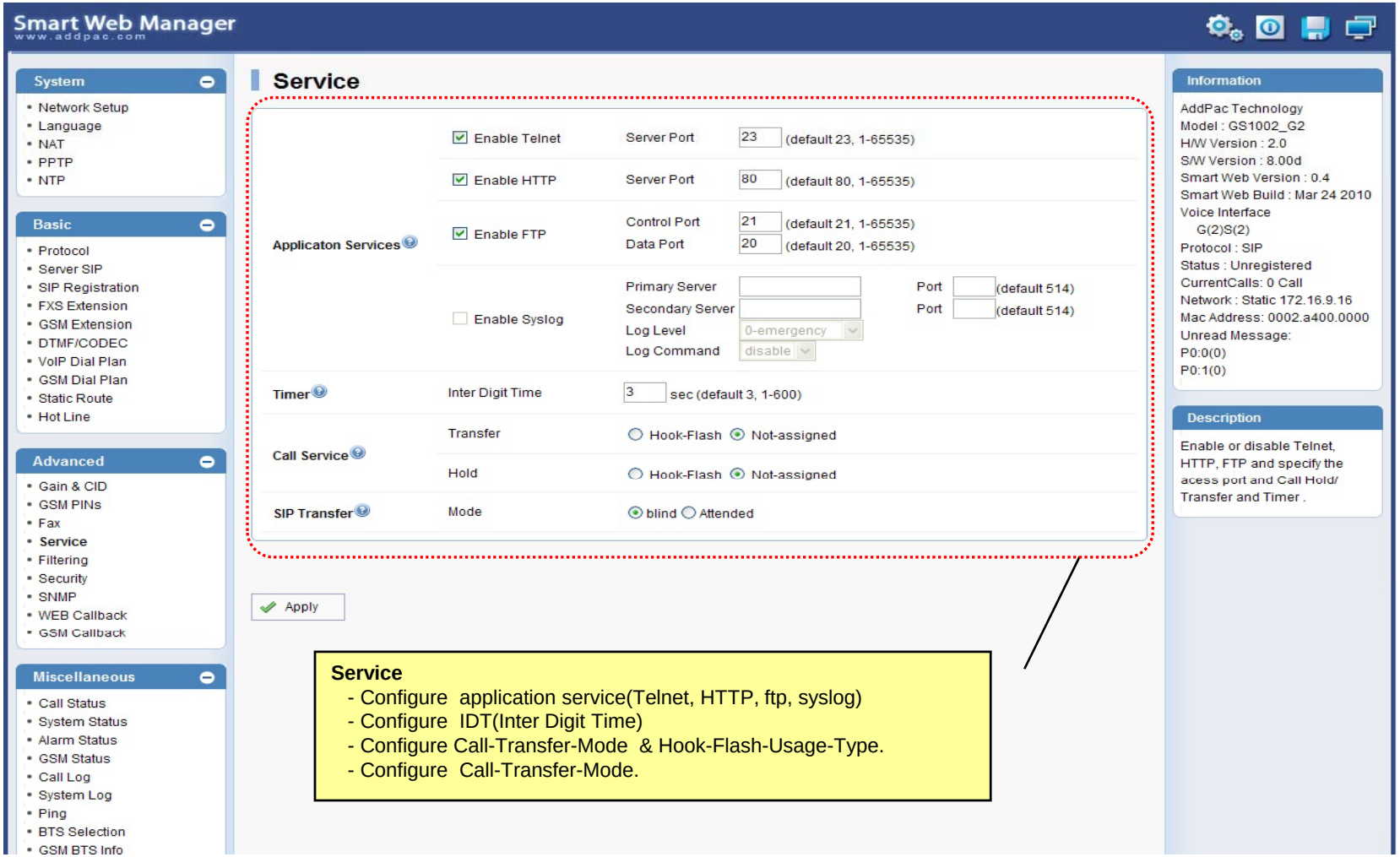
Advanced – GSM PINs



Advanced - Fax

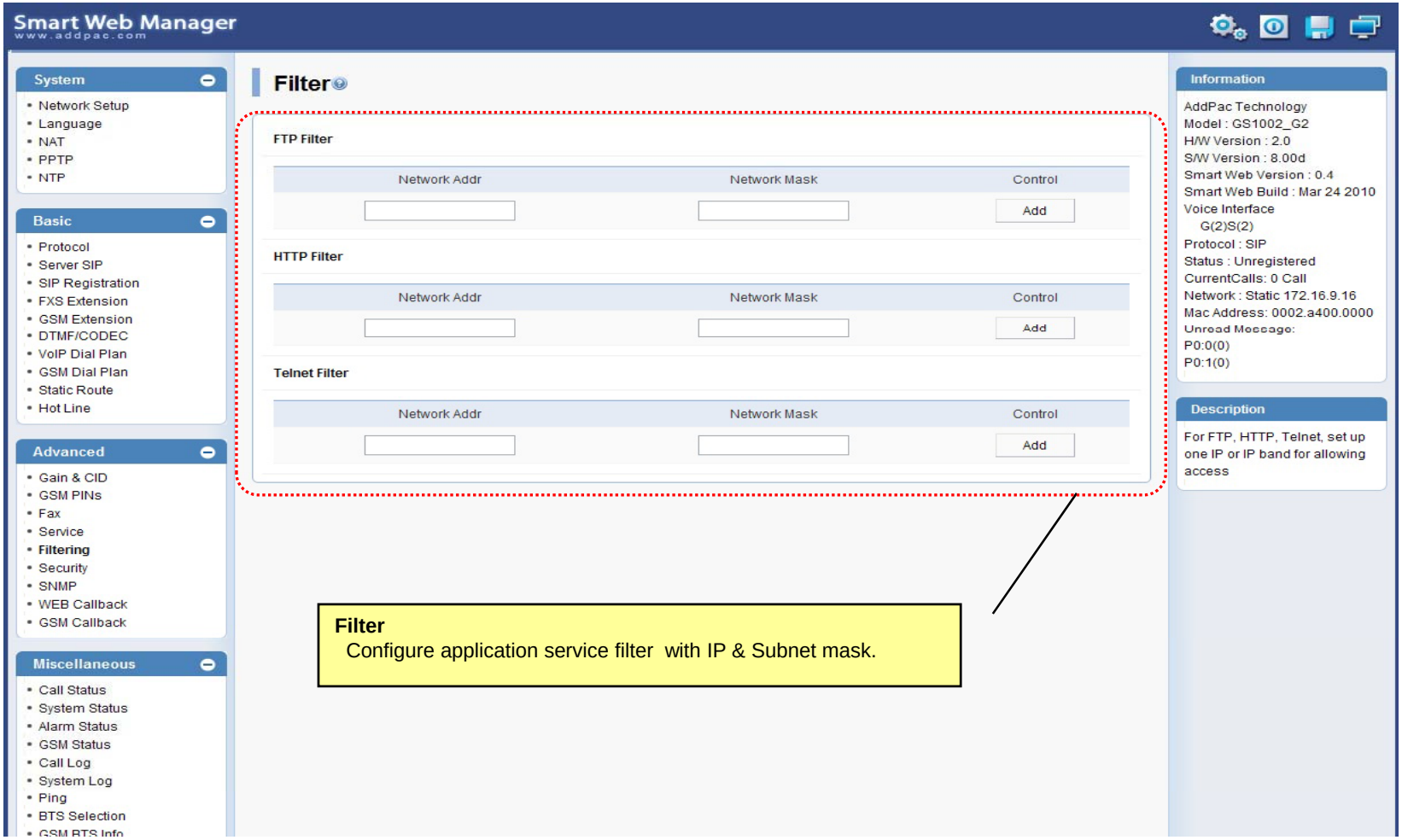


Advanced - Service



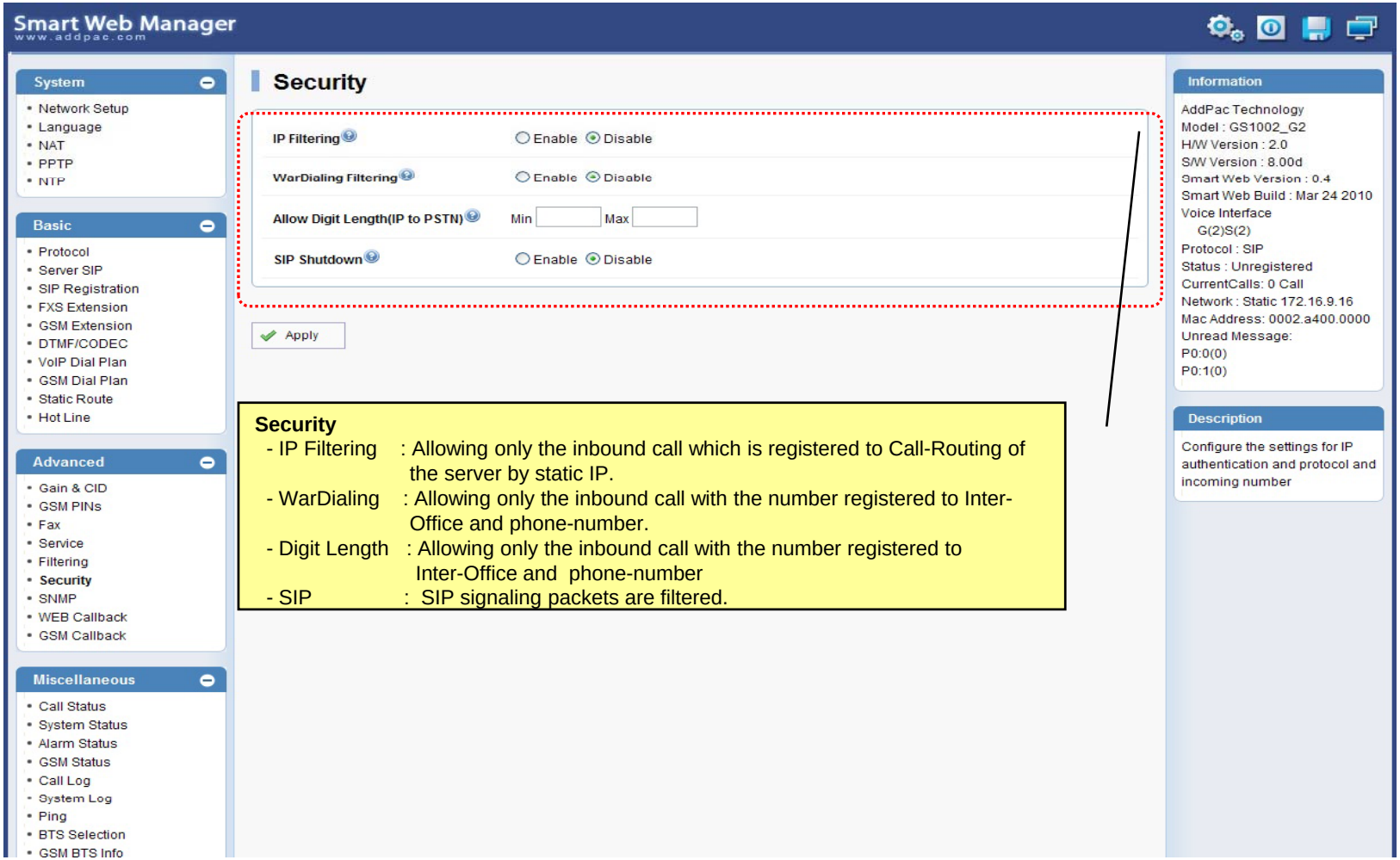
Service
- Configure application service(Telnet, HTTP, ftp, syslog)
- Configure IDT(Inter Digit Time)
- Configure Call-Transfer-Mode & Hook-Flash-Usage-Type.
- Configure Call-Transfer-Mode.

Advanced - Filtering



Filter
Configure application service filter with IP & Subnet mask.

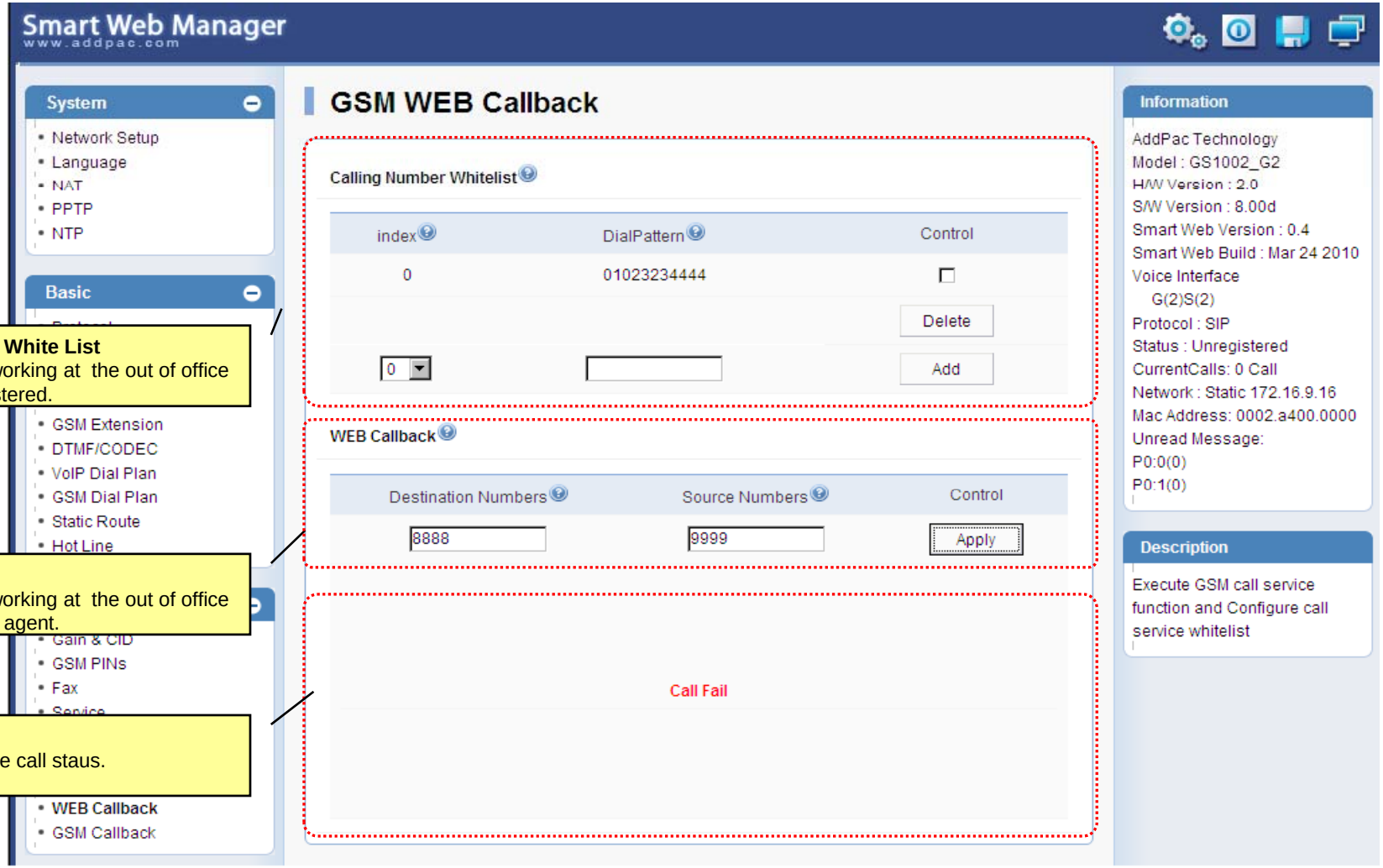
Advanced - Security



Security

- IP Filtering : Allowing only the inbound call which is registered to Call-Routing of the server by static IP.
- WarDialing : Allowing only the inbound call with the number registered to Inter-Office and phone-number.
- Digit Length : Allowing only the inbound call with the number registered to Inter-Office and phone-number
- SIP : SIP signaling packets are filtered.

Advanced – GSM Web Callback



Calling Number White List
The employee working at the out of office are usually registered.

WEB Callback
The employee working at the out of office can use web call agent.

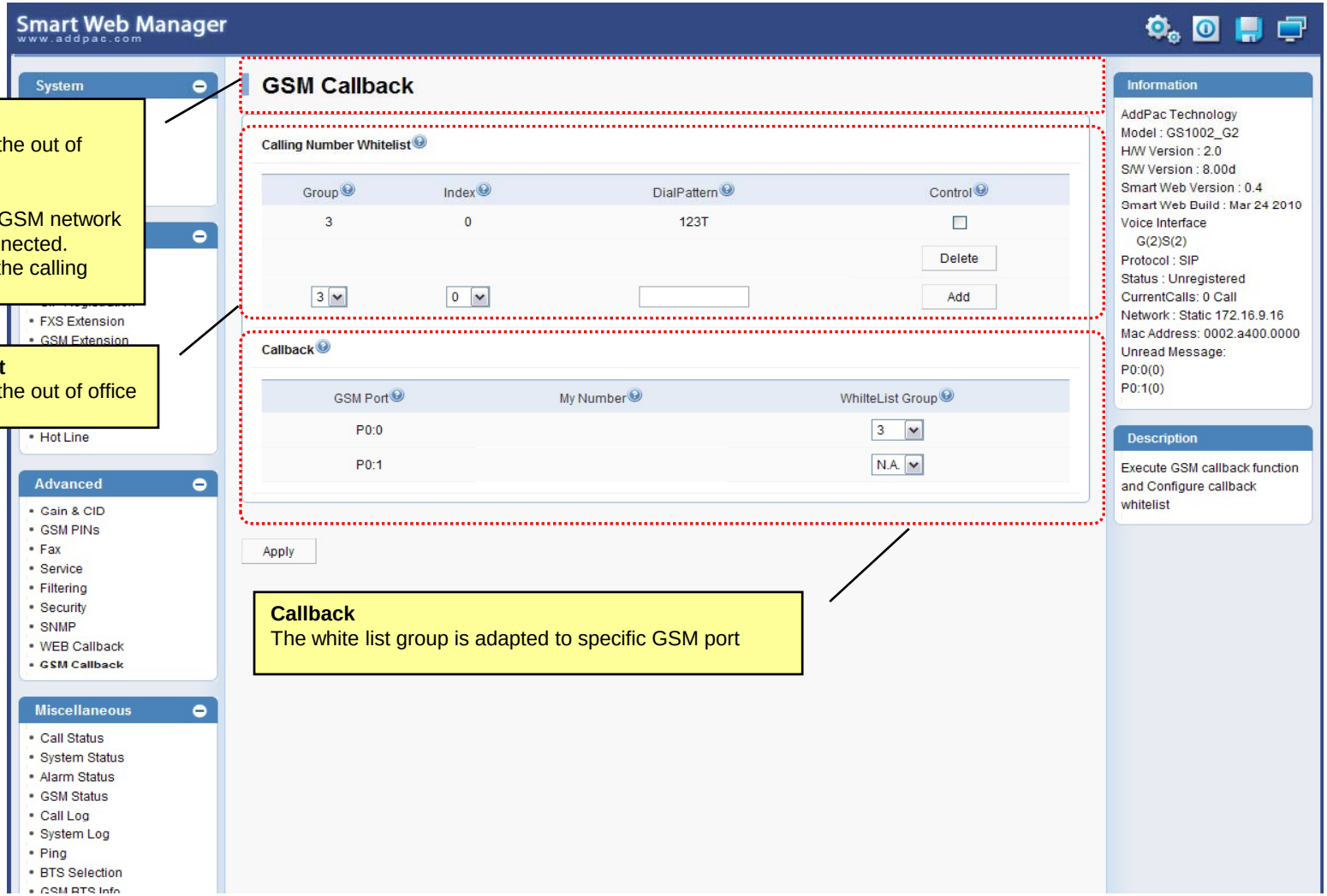
Status Viewer
Display real-time call staus.

Advanced – GSM Callback

GSM Callback
The employee working at the out of office can use this function.

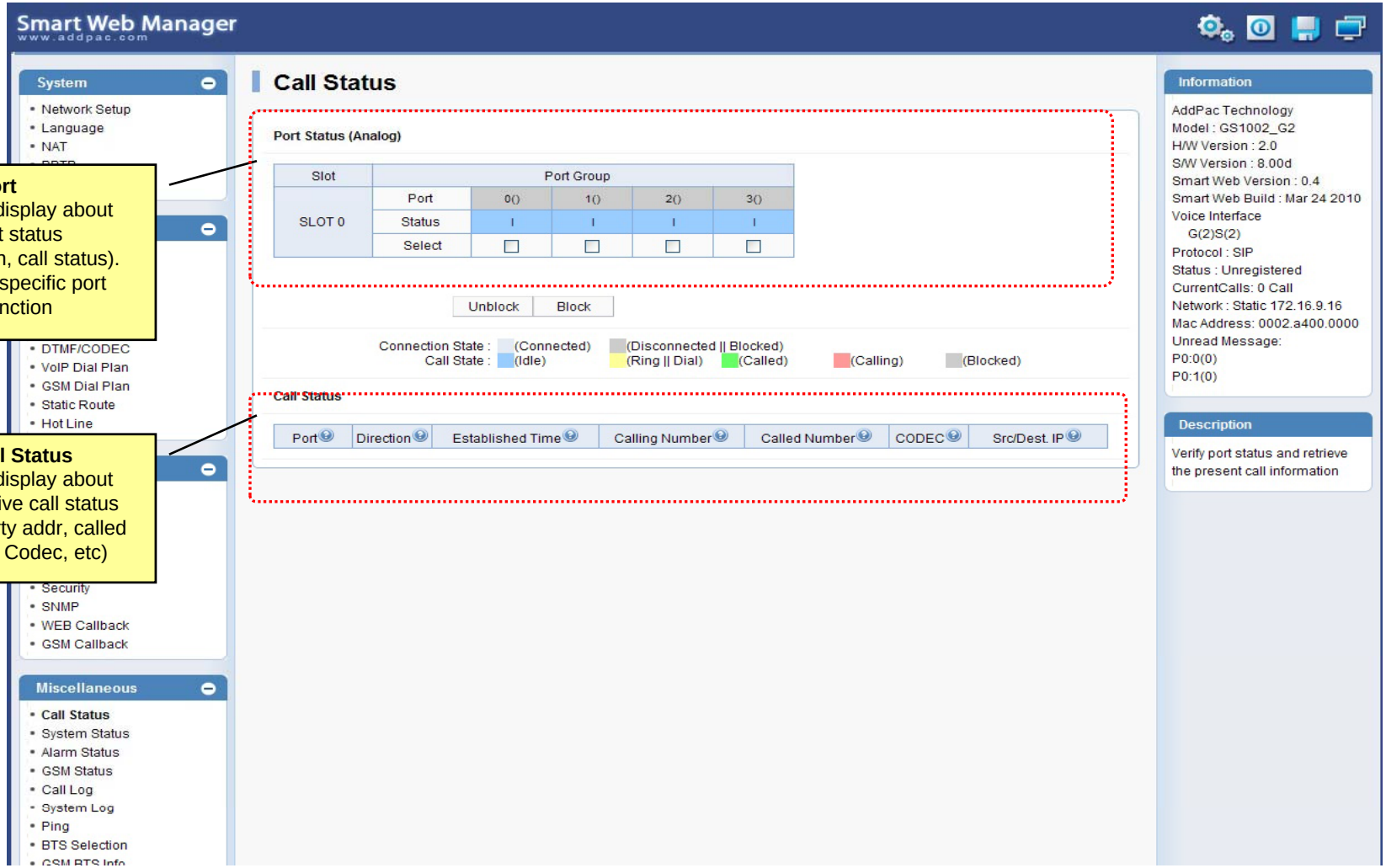
- The Call received from GSM network is automatically disconnected.
- GSM gateway calls to the calling number.

Calling Number White List
The employee working at the out of office are usually registered.



Callback
The white list group is adapted to specific GSM port

Miscellaneous – Call Status

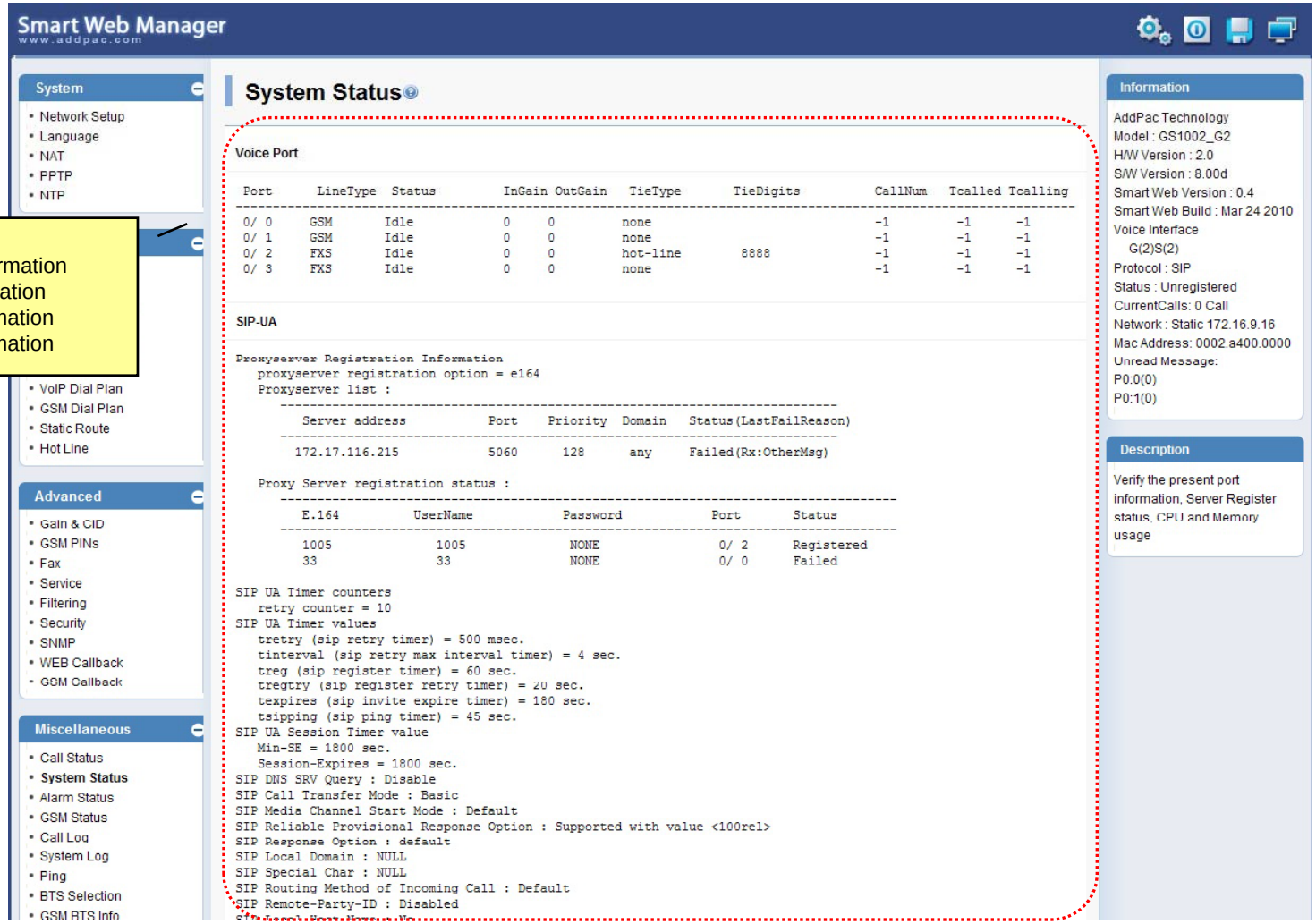


Analog Port
Real-time display about analog port status (occupation, call status). Provide a specific port blocking function

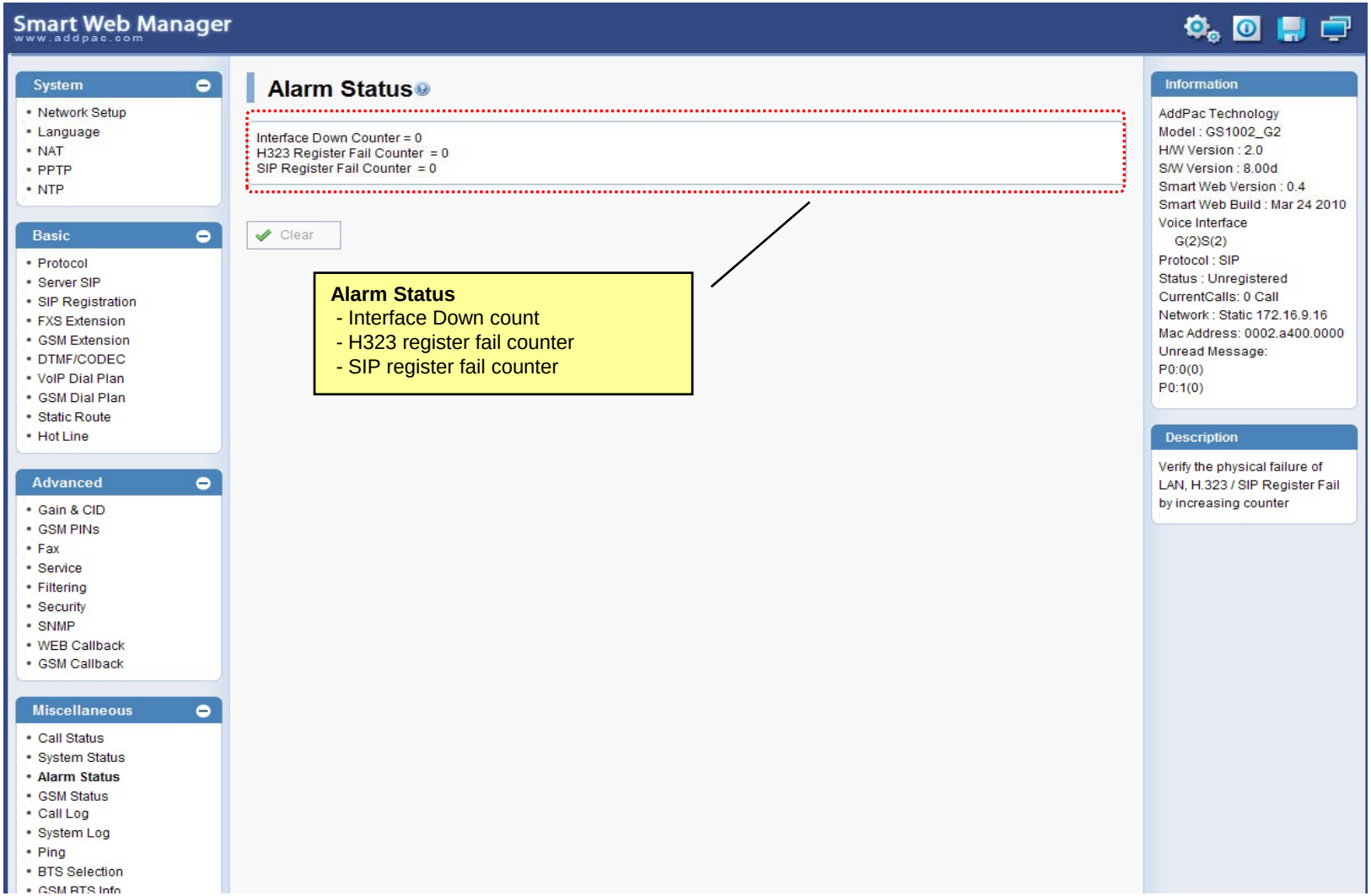
Active Call Status
Real-time display about current active call status (calling party addr, called party addr. Codec, etc)

Miscellaneous – System Status

System Status
- voice port status & information
- SIP-UA status & information
- gateway status & information
- system utilization information



Miscellaneous – Alarm Status

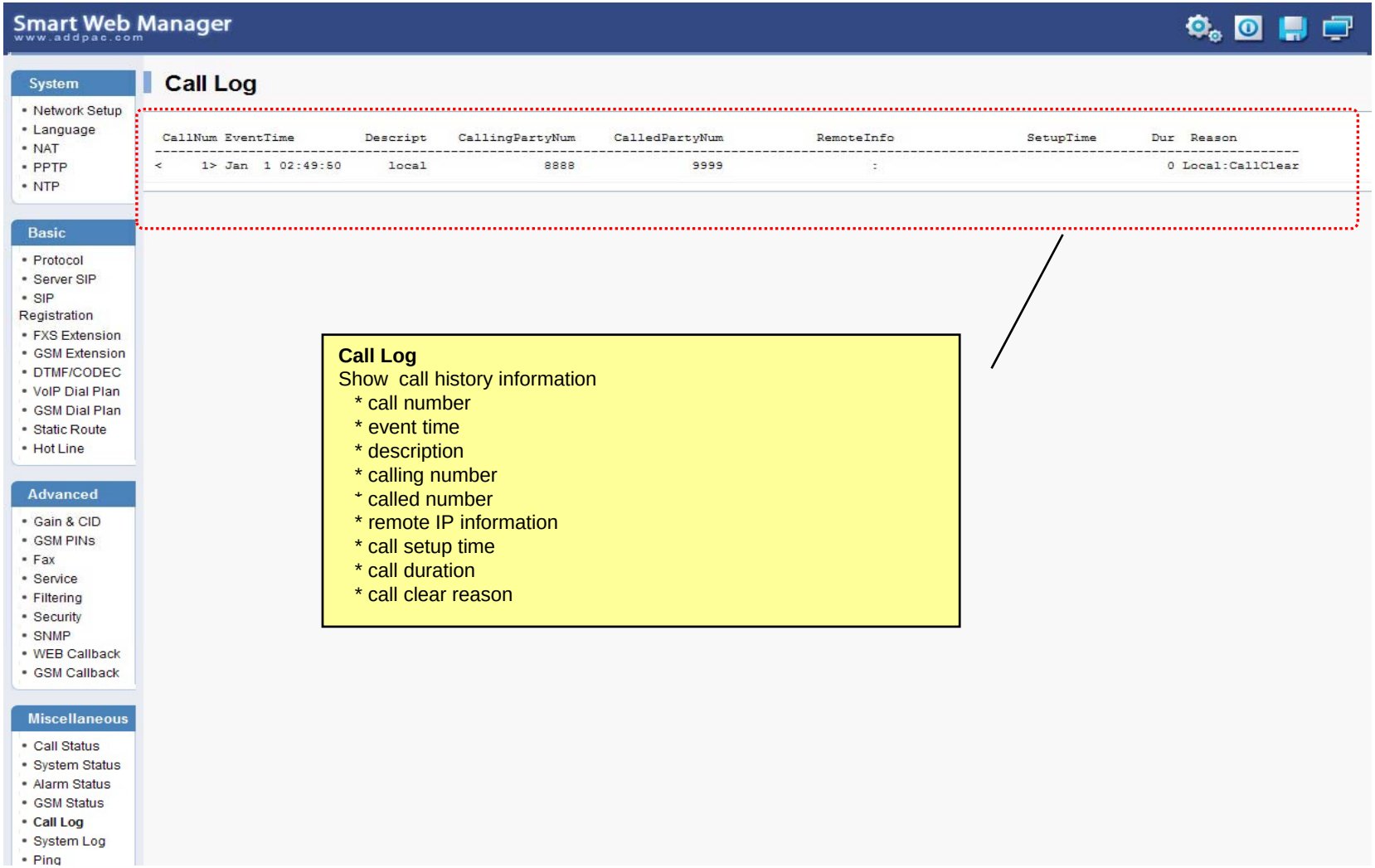


Alarm Status
- Interface Down count
- H323 register fail counter
- SIP register fail counter

Miscellaneous – GSM Status

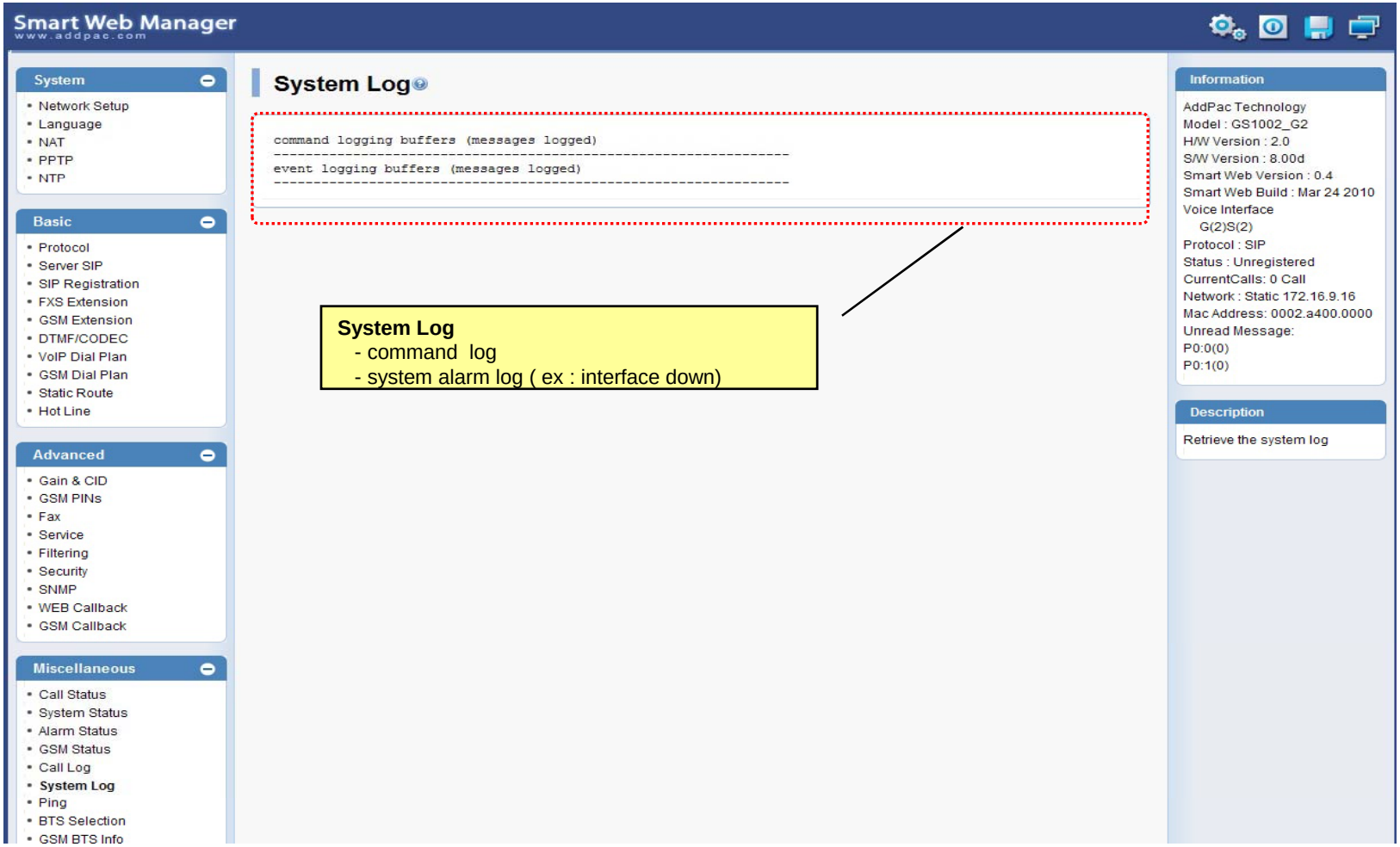
GSM Status
- my number
- GSM register status
- GSM signal strength
- Account information
  - * voice quota (used / quota / free)
  - * SMS quota (used / quota / free)

Miscellaneous – Call Log



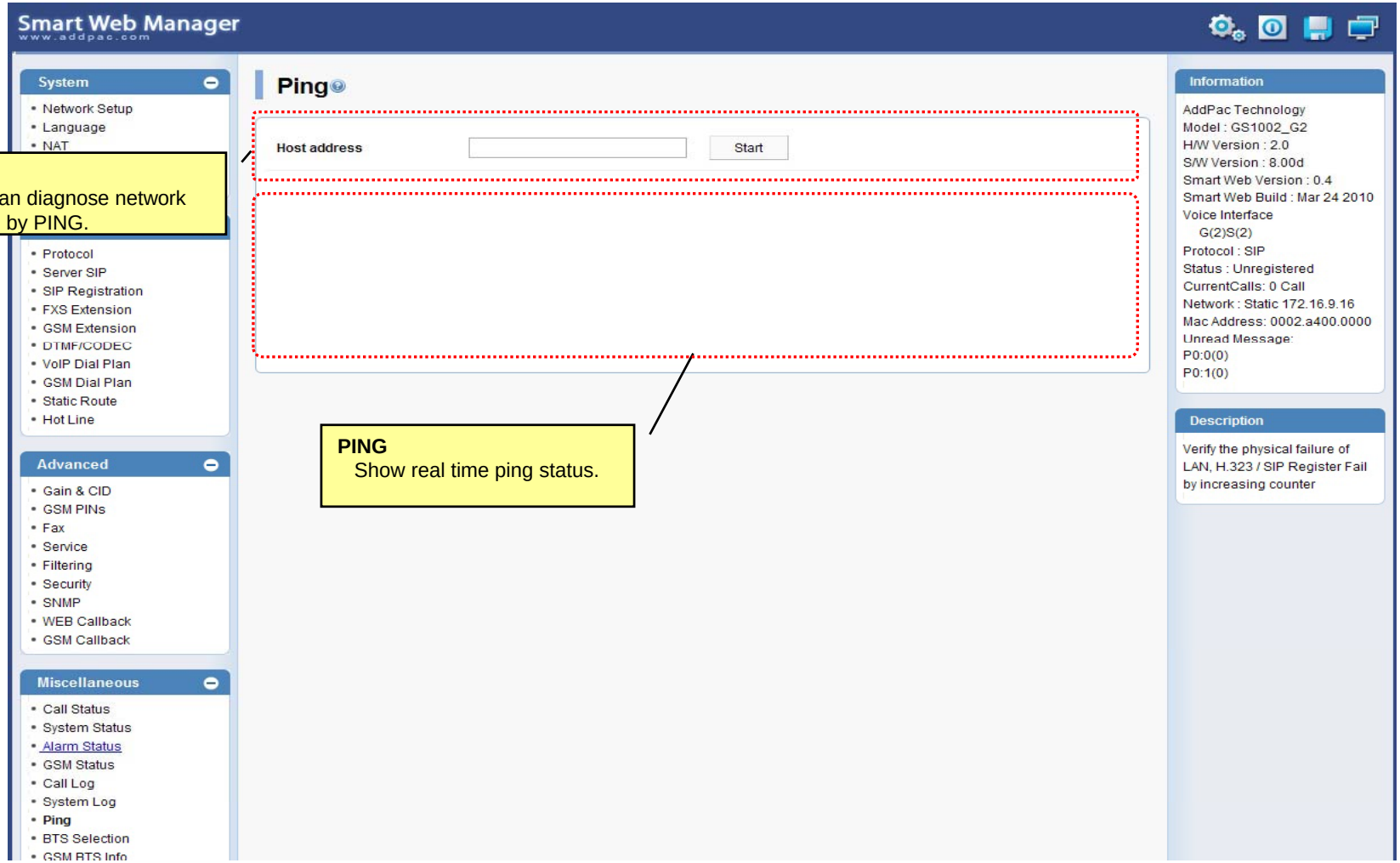
Call Log
Show call history information
* call number
* event time
* description
* calling number
* called number
* remote IP information
* call setup time
* call duration
* call clear reason

Miscellaneous – System Log



System Log
- command log
- system alarm log (ex : interface down)

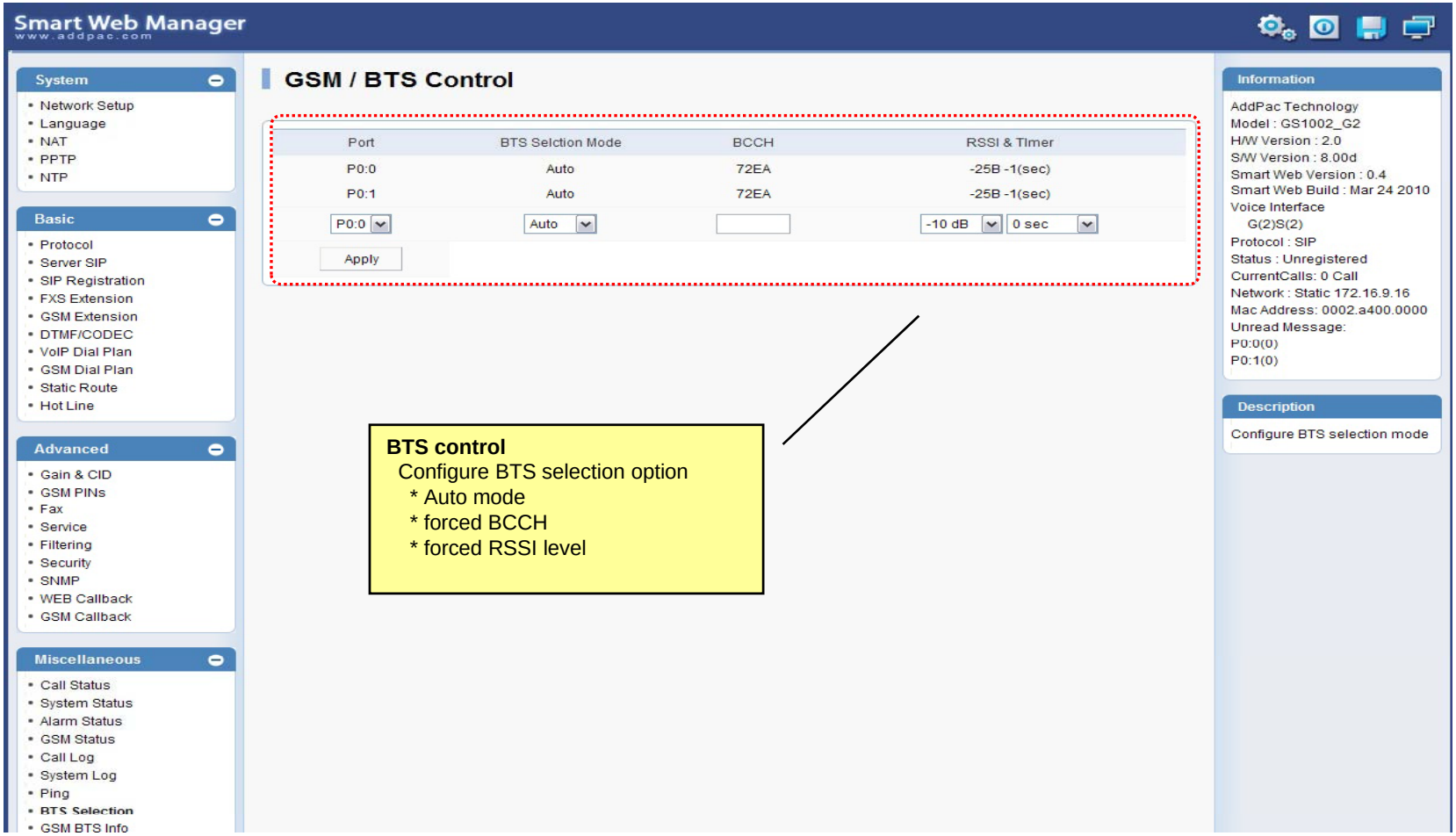
Miscellaneous - Ping



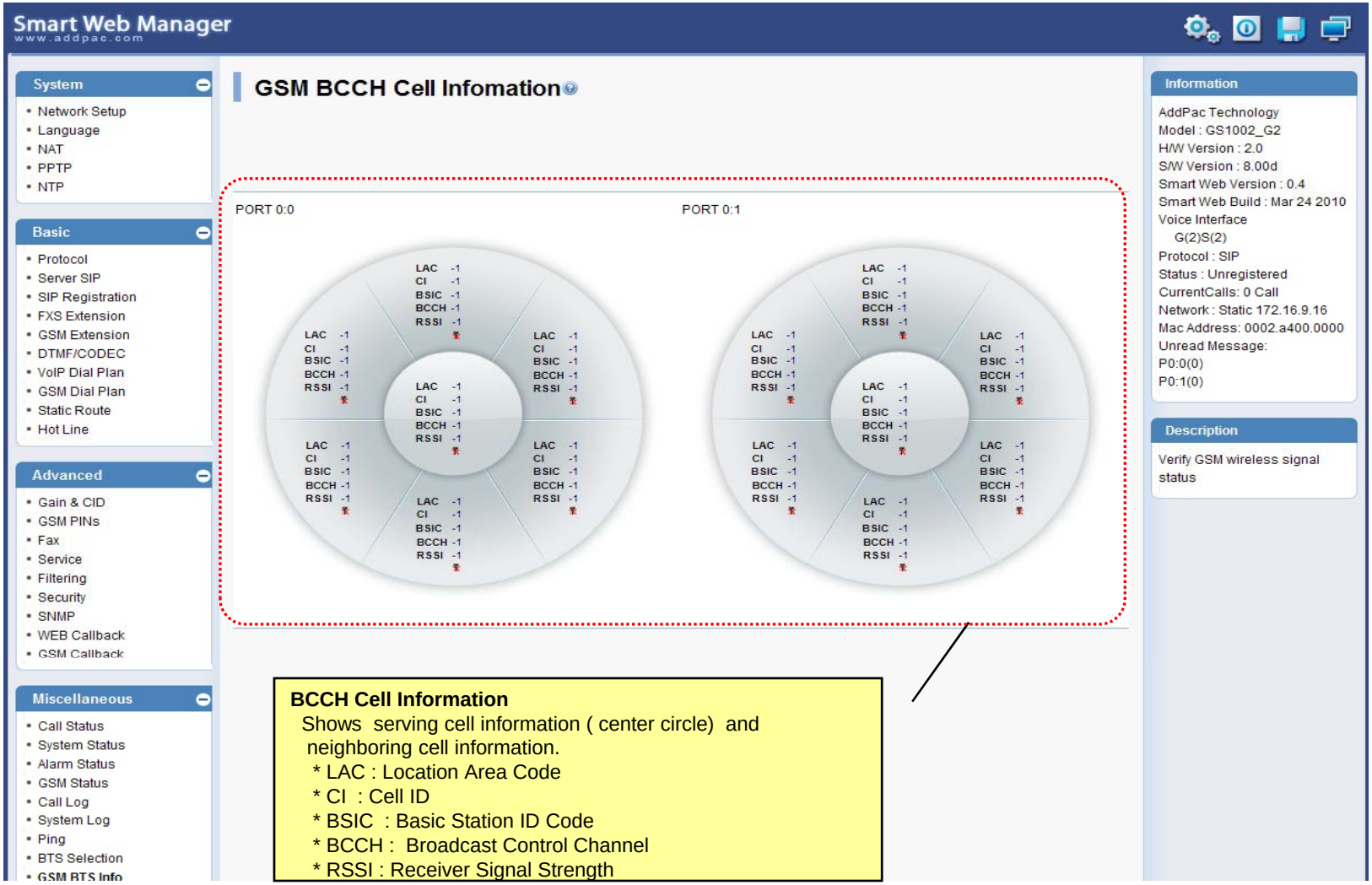
PING
You can diagnose network status by PING.

PING
Show real time ping status.

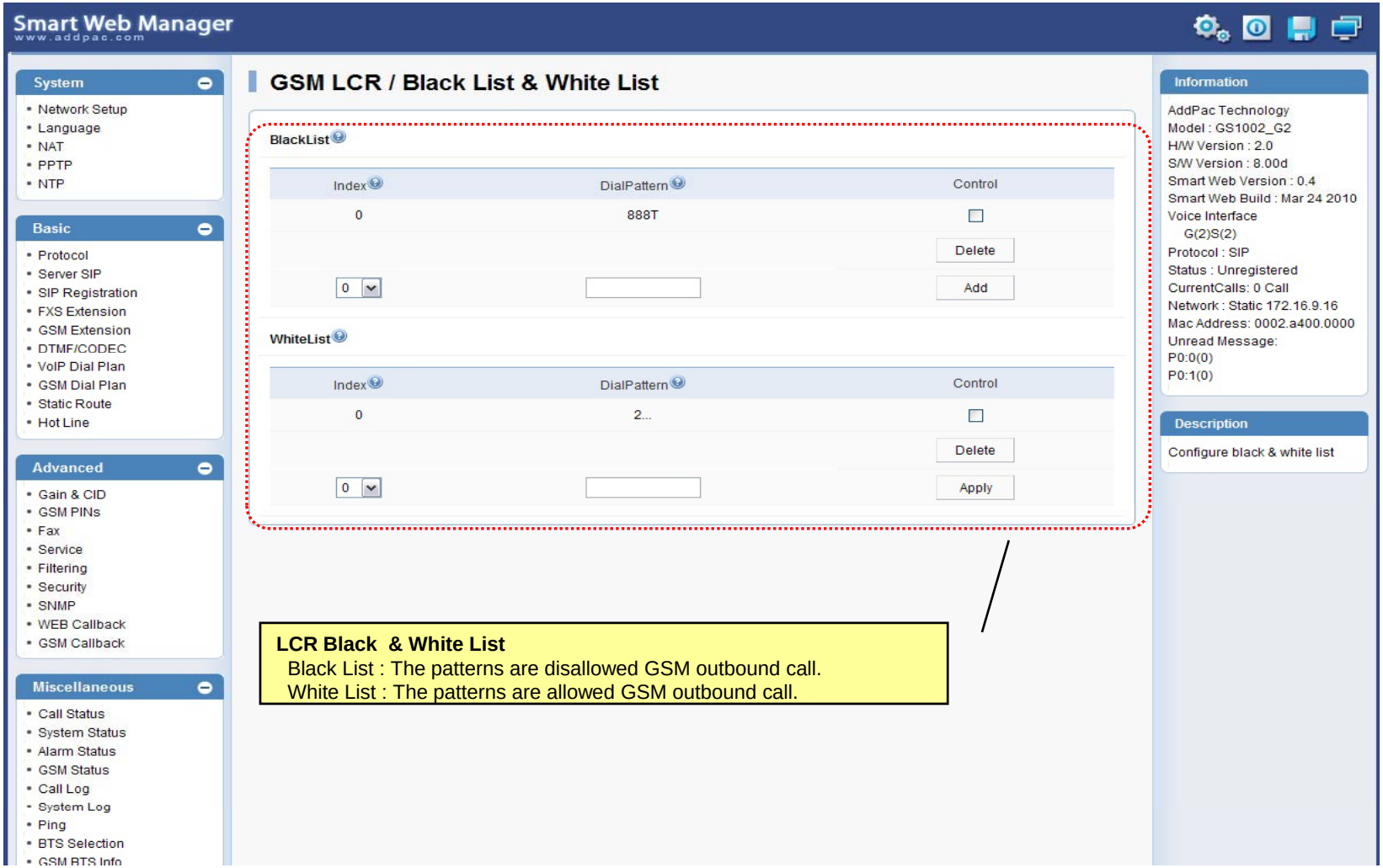
Miscellaneous – BTS Selection



Miscellaneous – GSM BTS Info

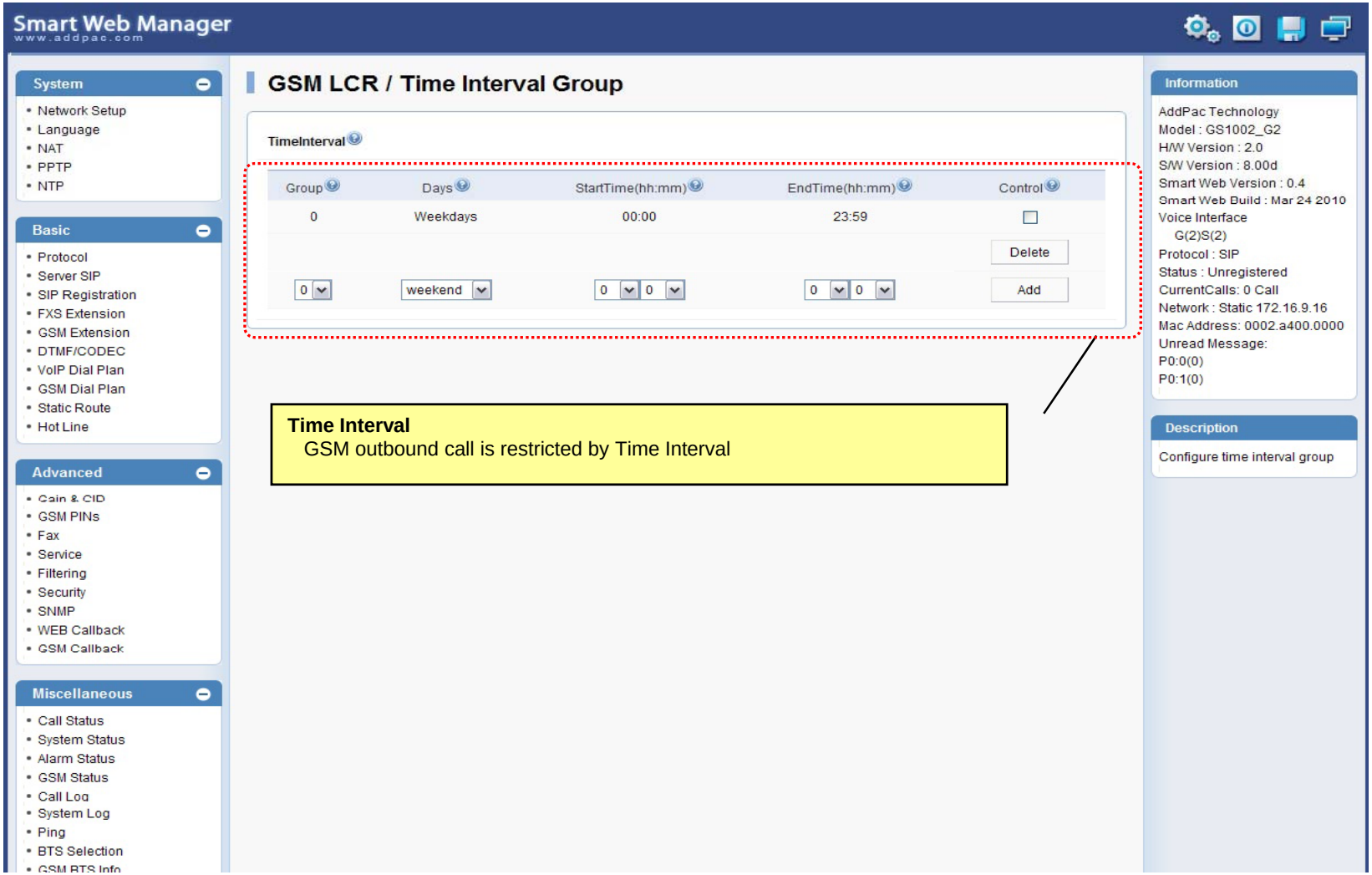


LCR – Black & White List



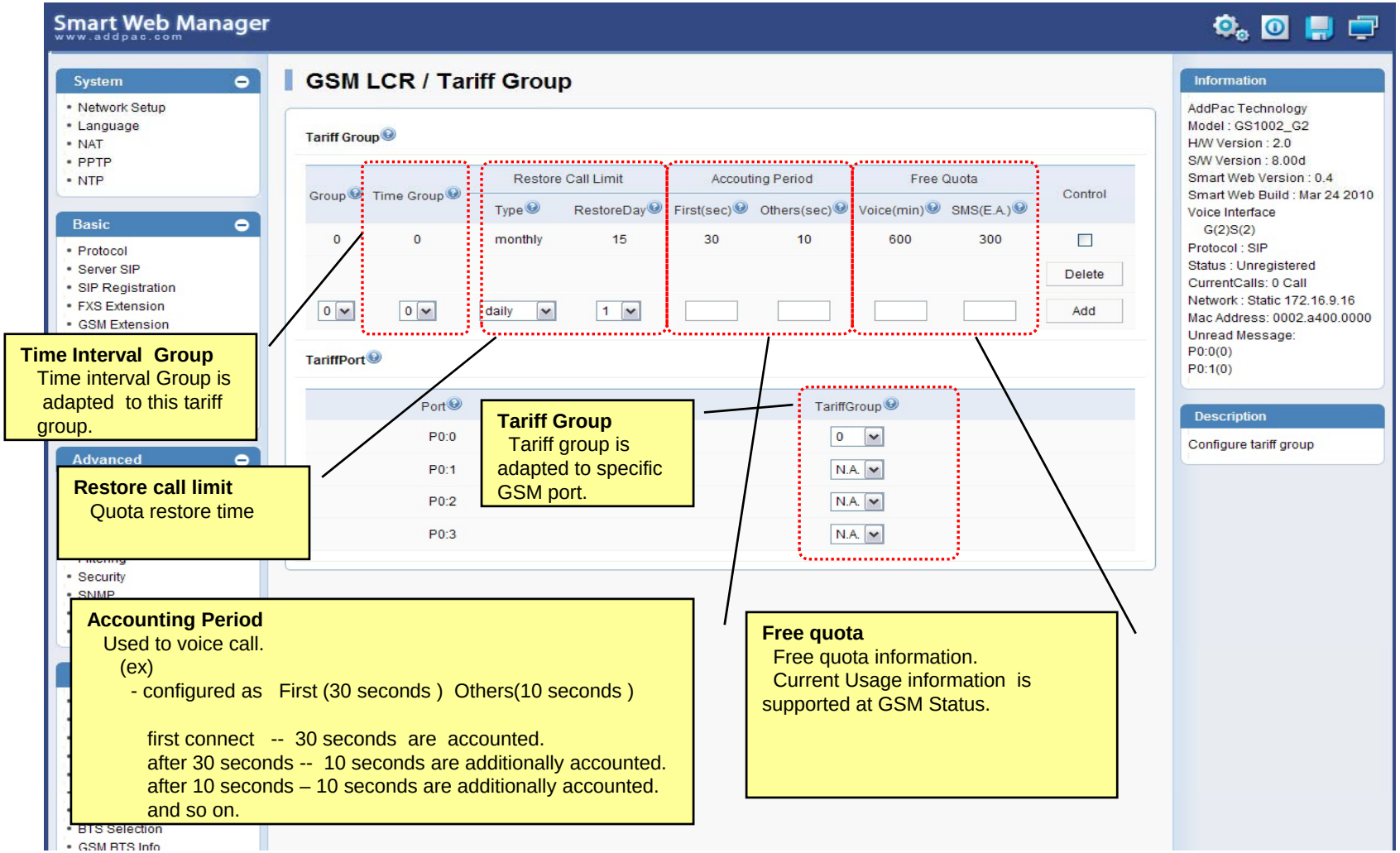
LCR Black & White List
Black List : The patterns are disallowed GSM outbound call.
White List : The patterns are allowed GSM outbound call.

LCR – Time Interval

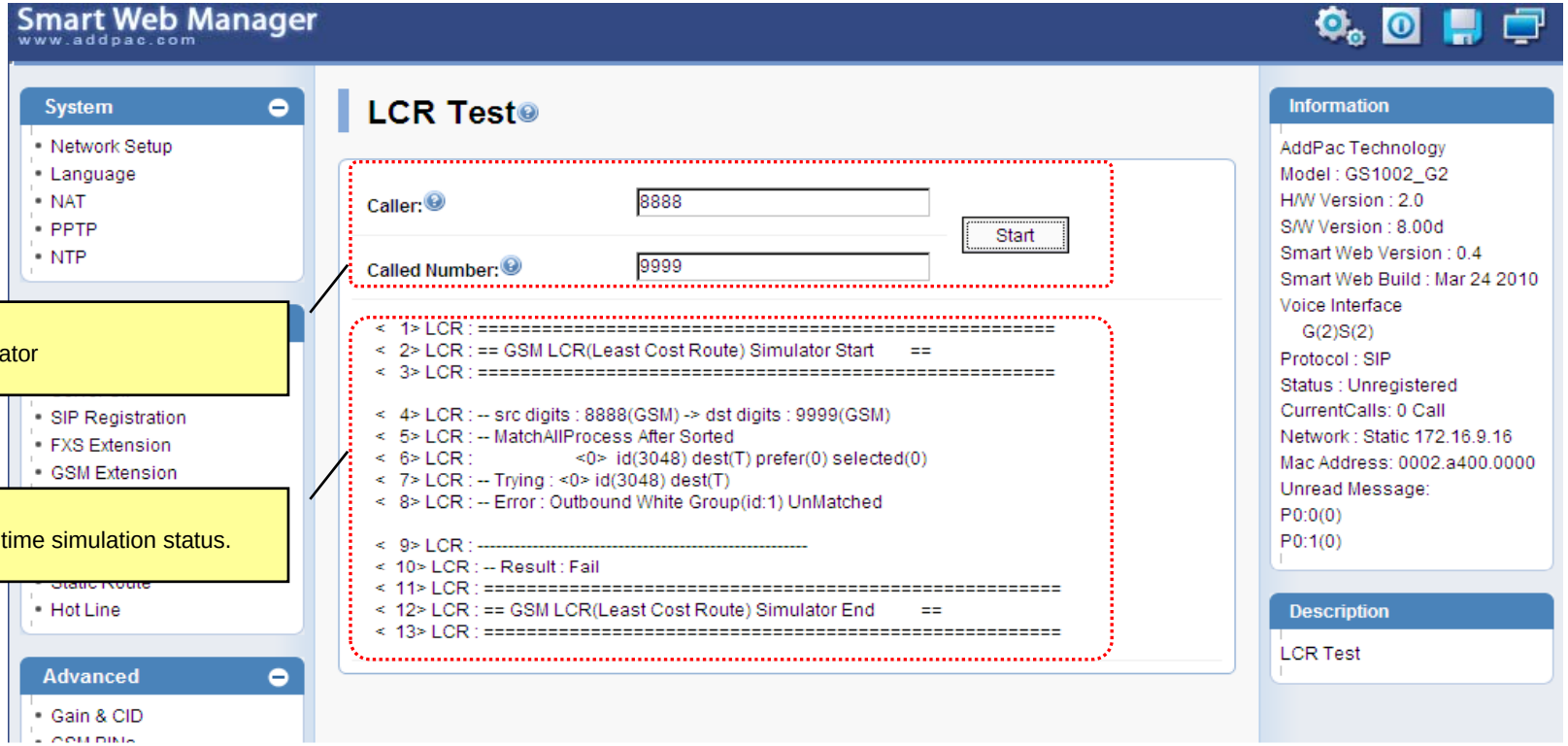


Time Interval
GSM outbound call is restricted by Time Interval

LCR – Tariff Group



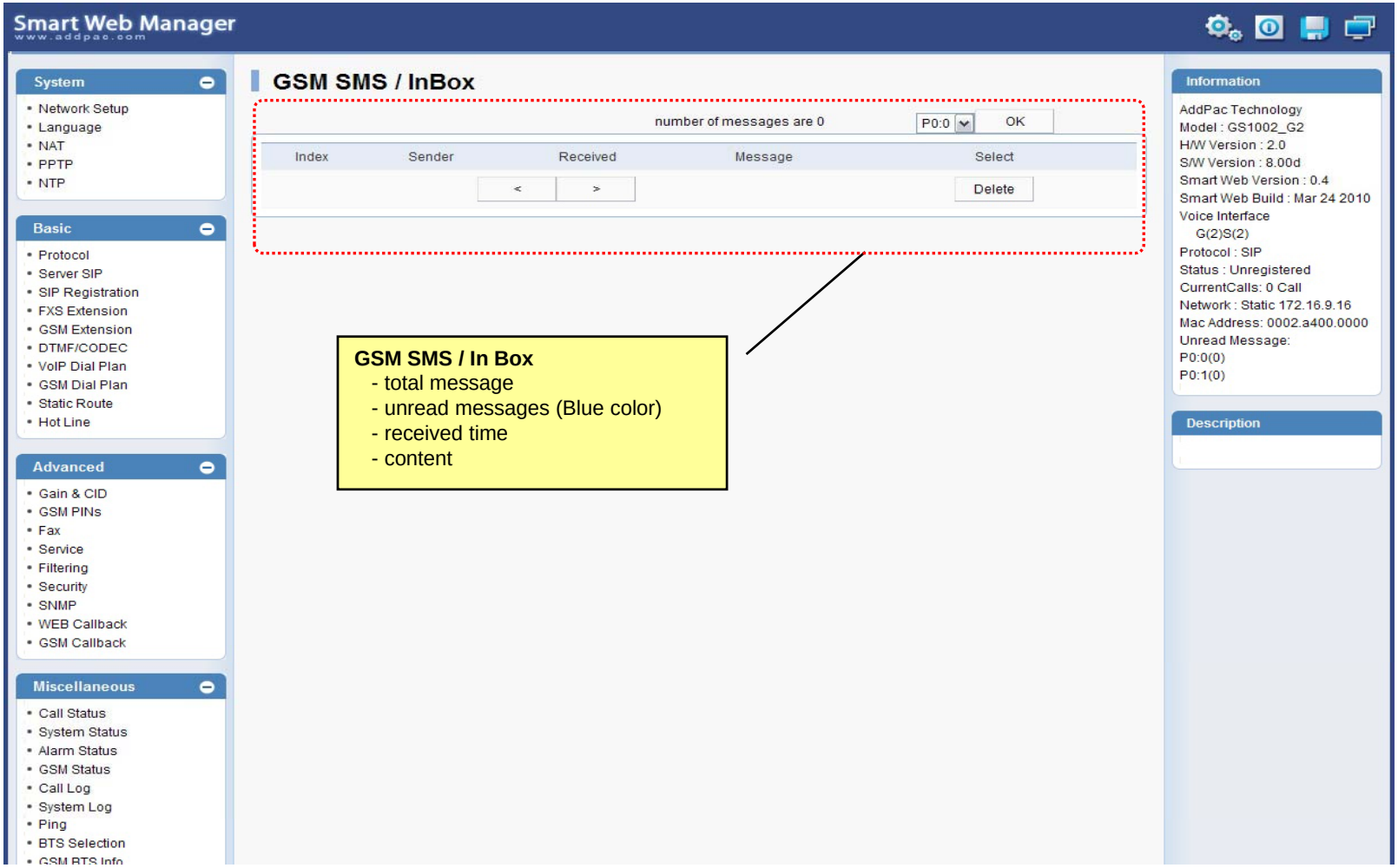
LCR – LCR Test



LCR Test
LCR simulator

LCR Test
Show real time simulation status.

SMS – Inbox



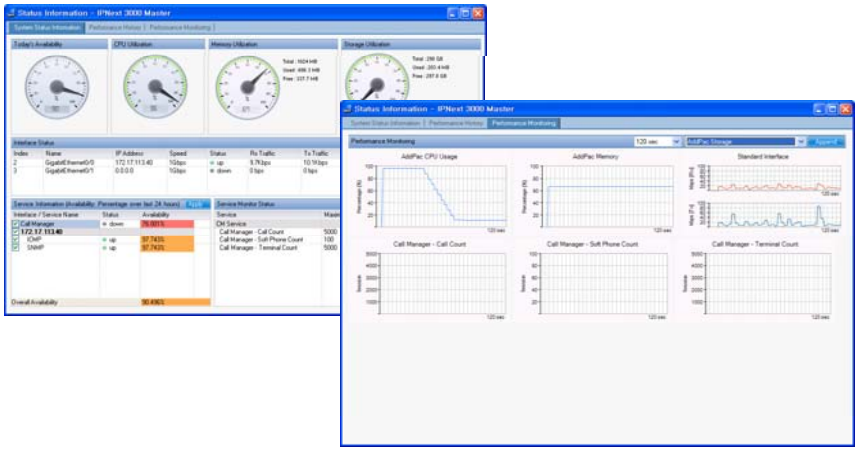
GSM SMS / In Box
- total message
- unread messages (Blue color)
- received time
- content

SMS – SMS New Message

New Message
send a new message to the other GSM mobile phone.

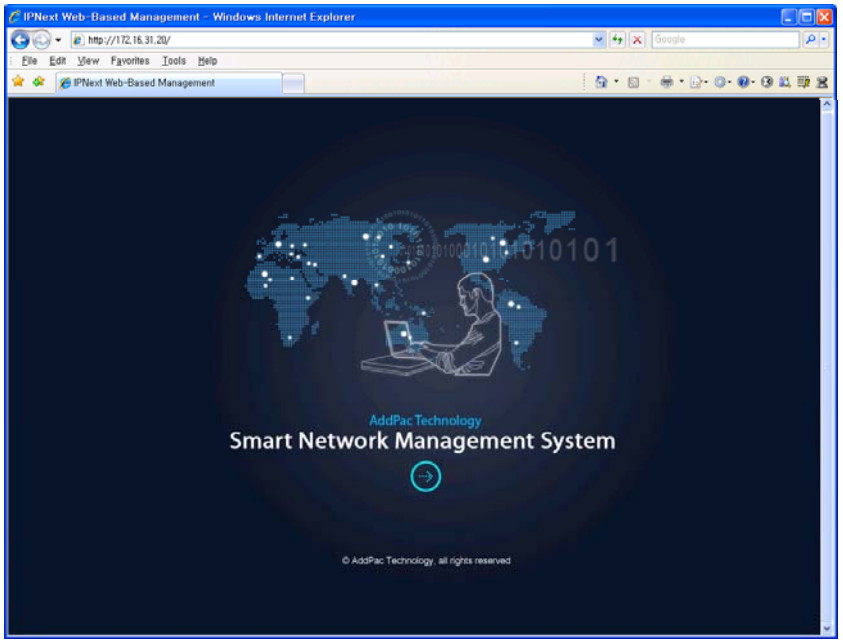
Smart NMS

Smart Network Management System for 3G Gateway



Contents

- System Requirement
- Smart NMS Networking Diagram
- Web-based Management
- Network Resource Management
- Device Fault Management
- Device Fault History Management
- Device Status Information
- Notification Management
- Fault Statistics
- Model & Service Management



System Requirement

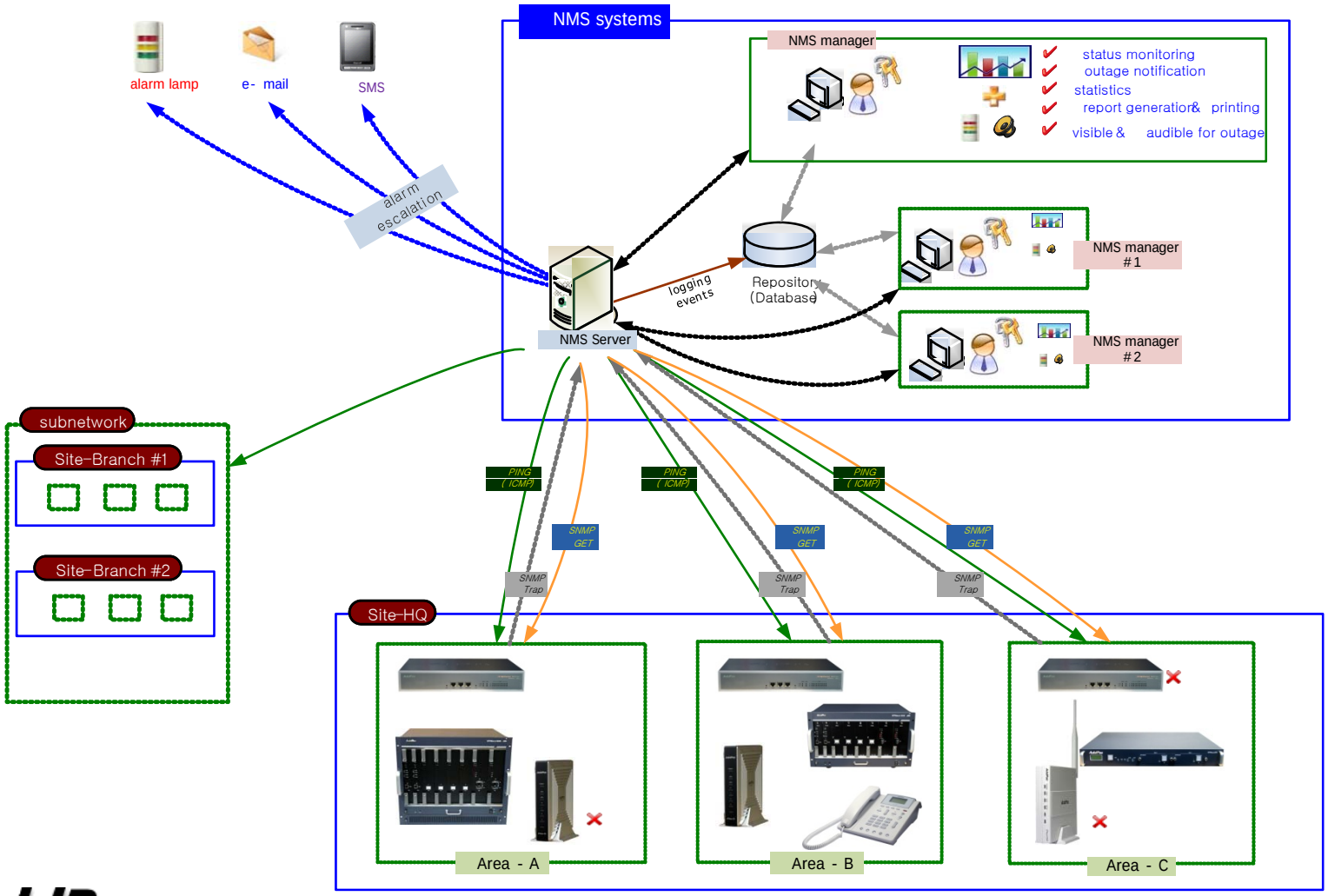
NMS Server

- OS : RHEL (Redhat Enterprise Linux) 5.0 or higher
- CPU : Quad-Core 2.0 GHz / 1333MHz FSB 2x4 MB cache
- Physical Memory : 4 GB
- HDD : 300 G
- JRE (Java Runtime Environment) 1.5.1 or Higher
- Database : PostgreSQL 8.1.11

NMS Client

- Windows XP, Vista, Windows Server 2000/2003
- Microsoft Internet Explorer 6.0 or higher

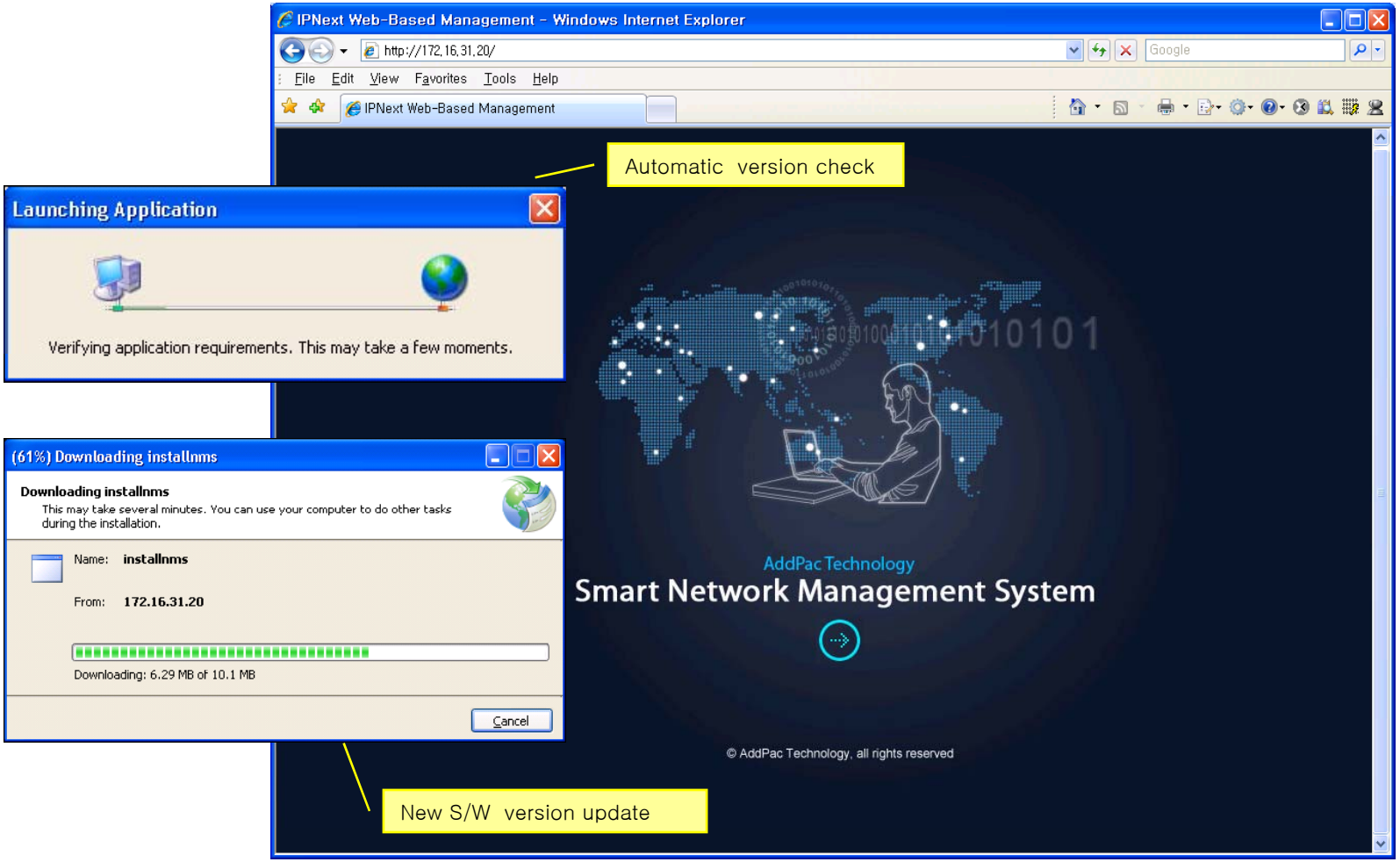
NMS Networking Diagram



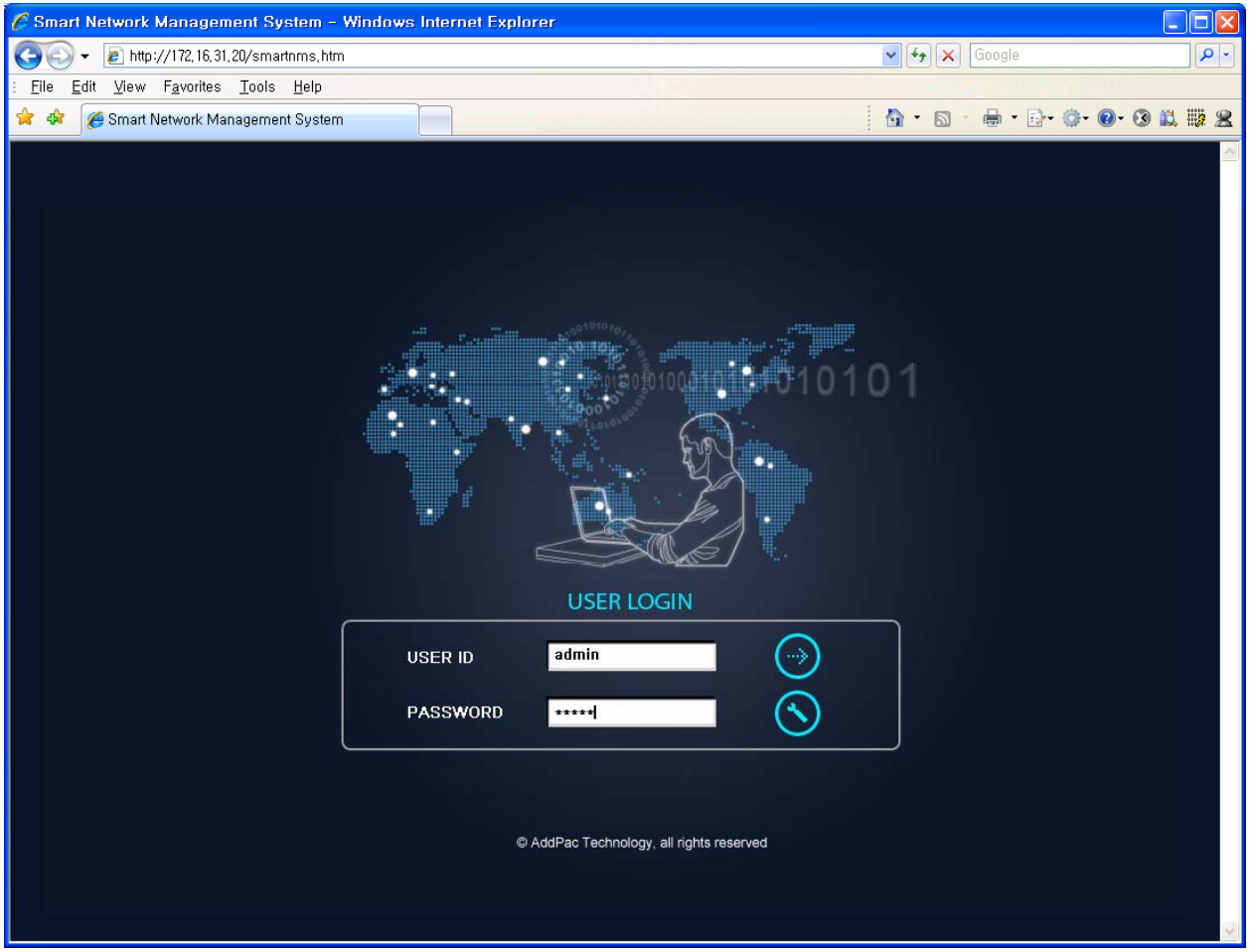
Web-based Management

- **Easy Access via Web browser**
  - Microsoft Internet Explorer 6.0 or higher compatible
- **Version Control**
  - Automatic version check
  - New version software download feature
- **UI control**
  - User friendly GUI management

Version Control

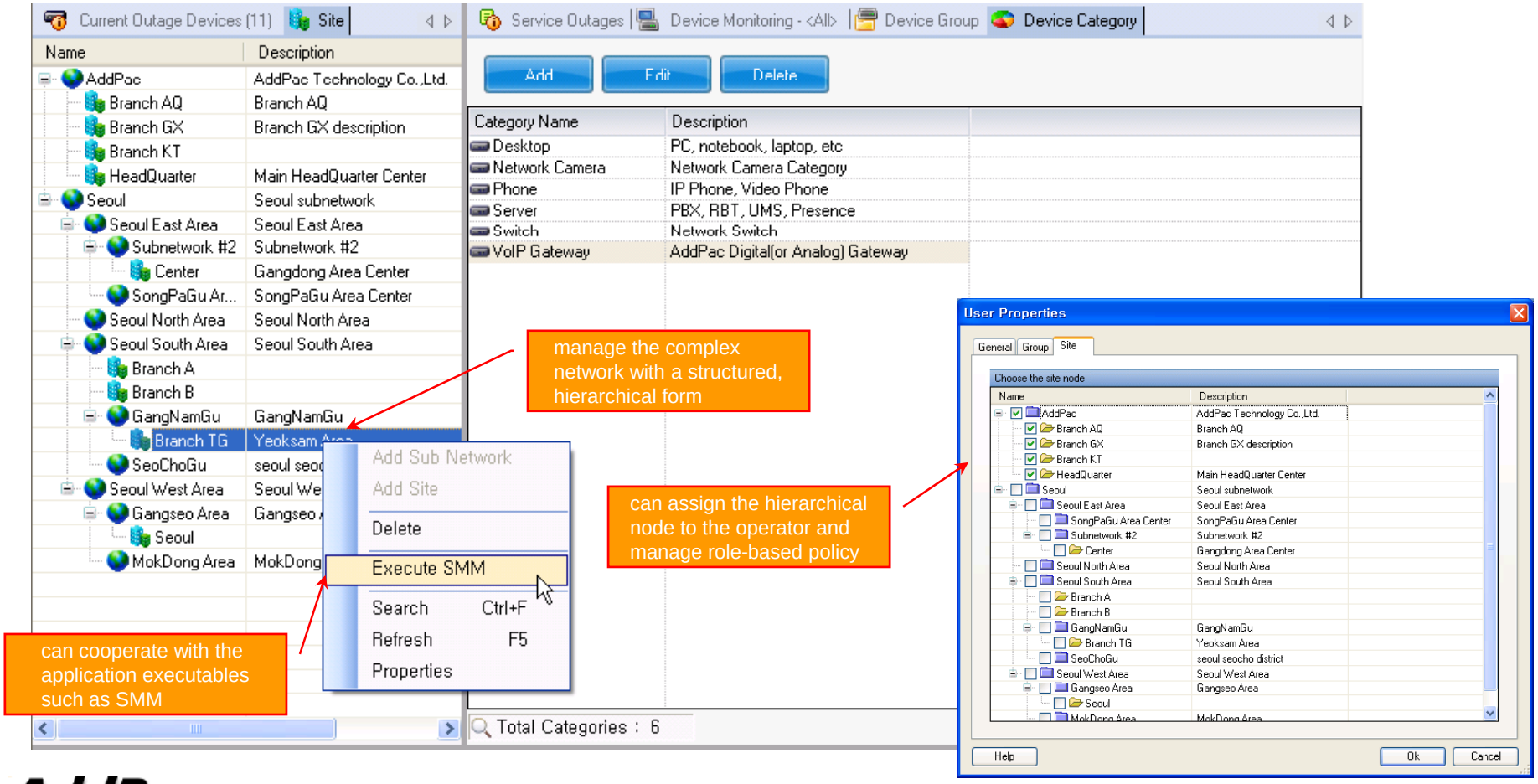


Web-based Login



Network Resource Management

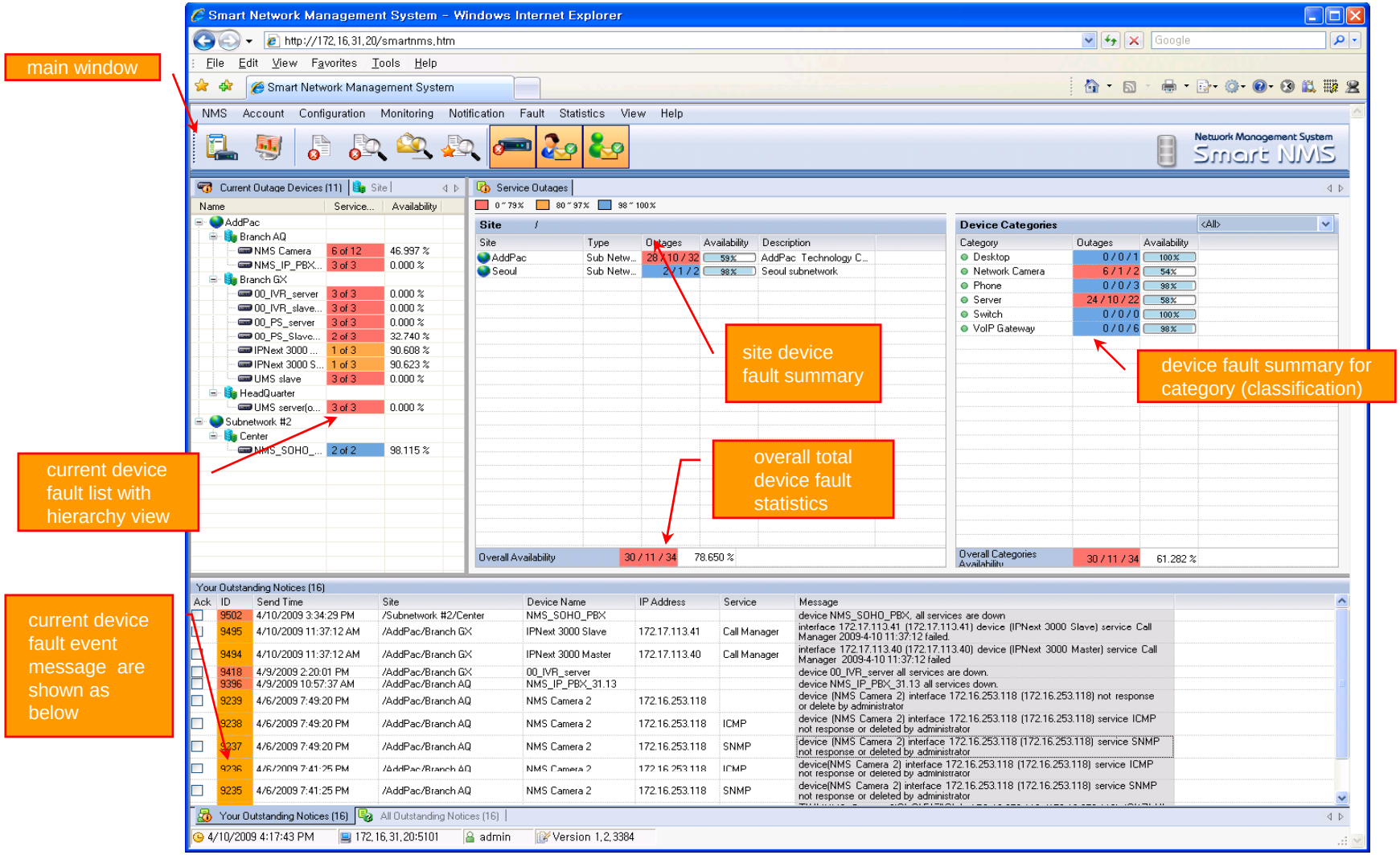
- Network resource management with hierarchical structure
- Role-based resource management for each administrator



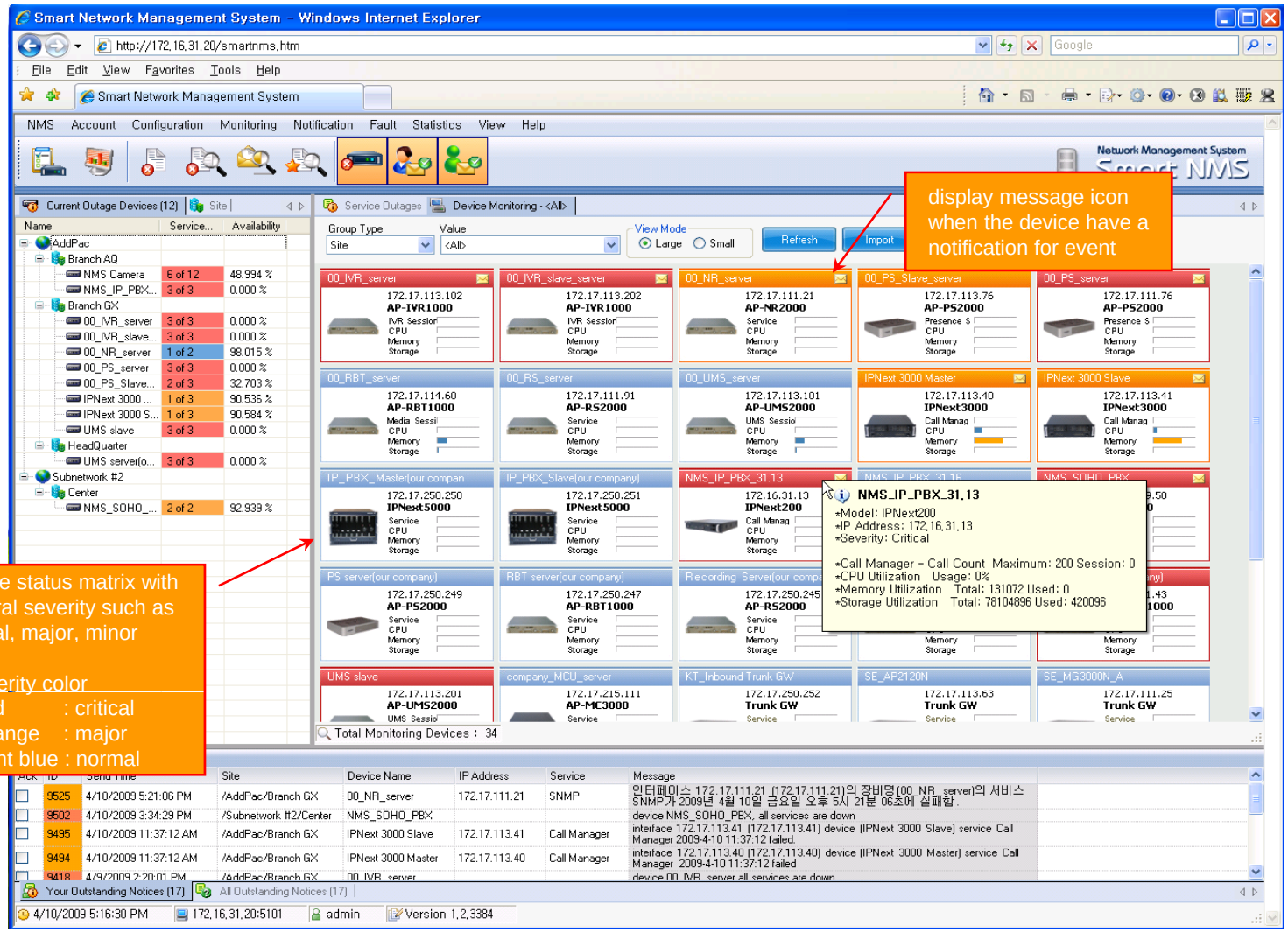
Device Fault Management

- Centralized fault summary information in main window
- Display current fault device through tree view
- Notify administrator with detailed fault information
- Provide device availability information for 24hrs

Device Fault Management



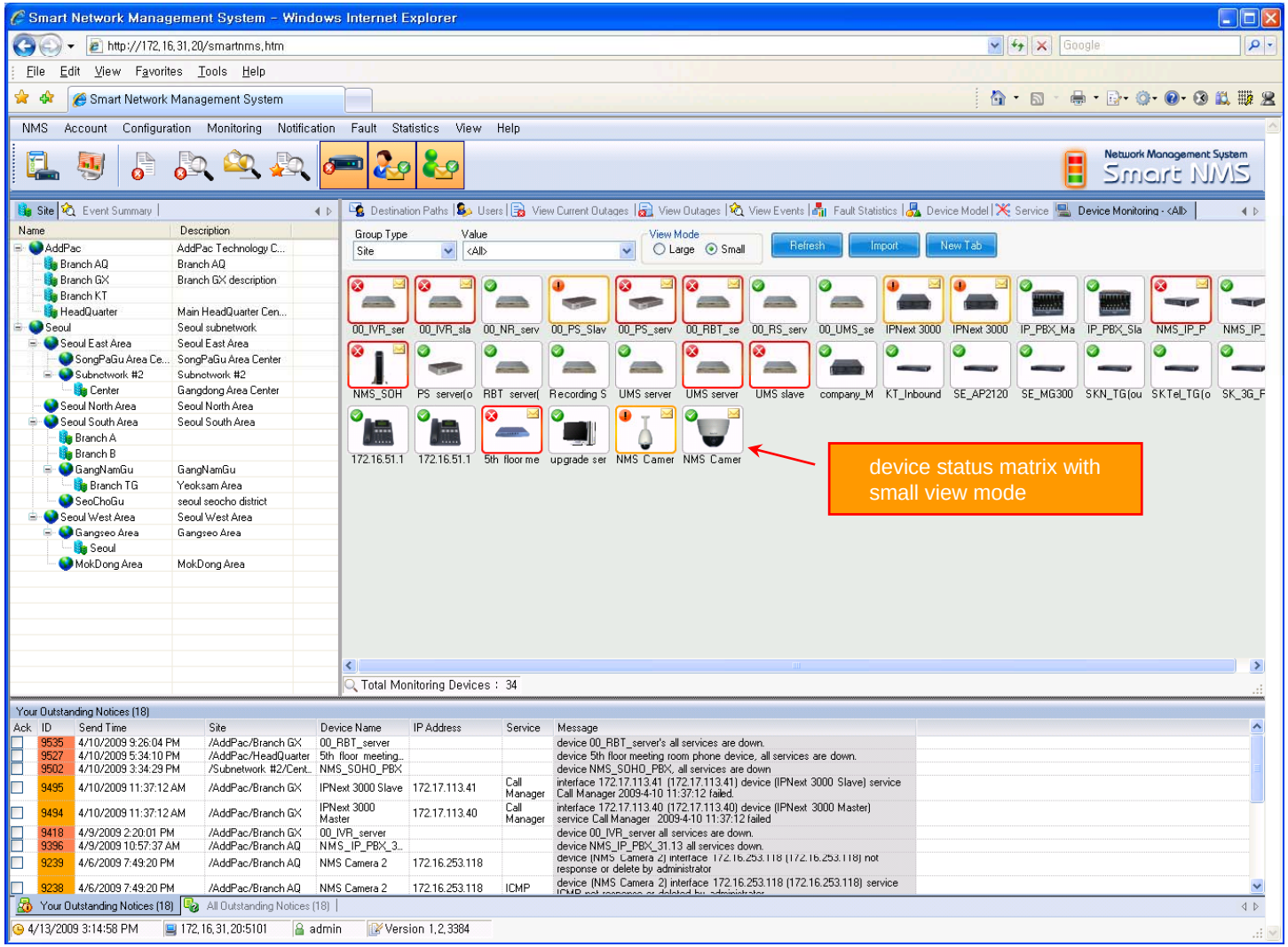
Device Fault Management



device status matrix with several severity such as critical, major, minor

* severity color
1) red : critical
2) orange : major
3) light blue : normal

Device Fault Management



Device Fault History Management

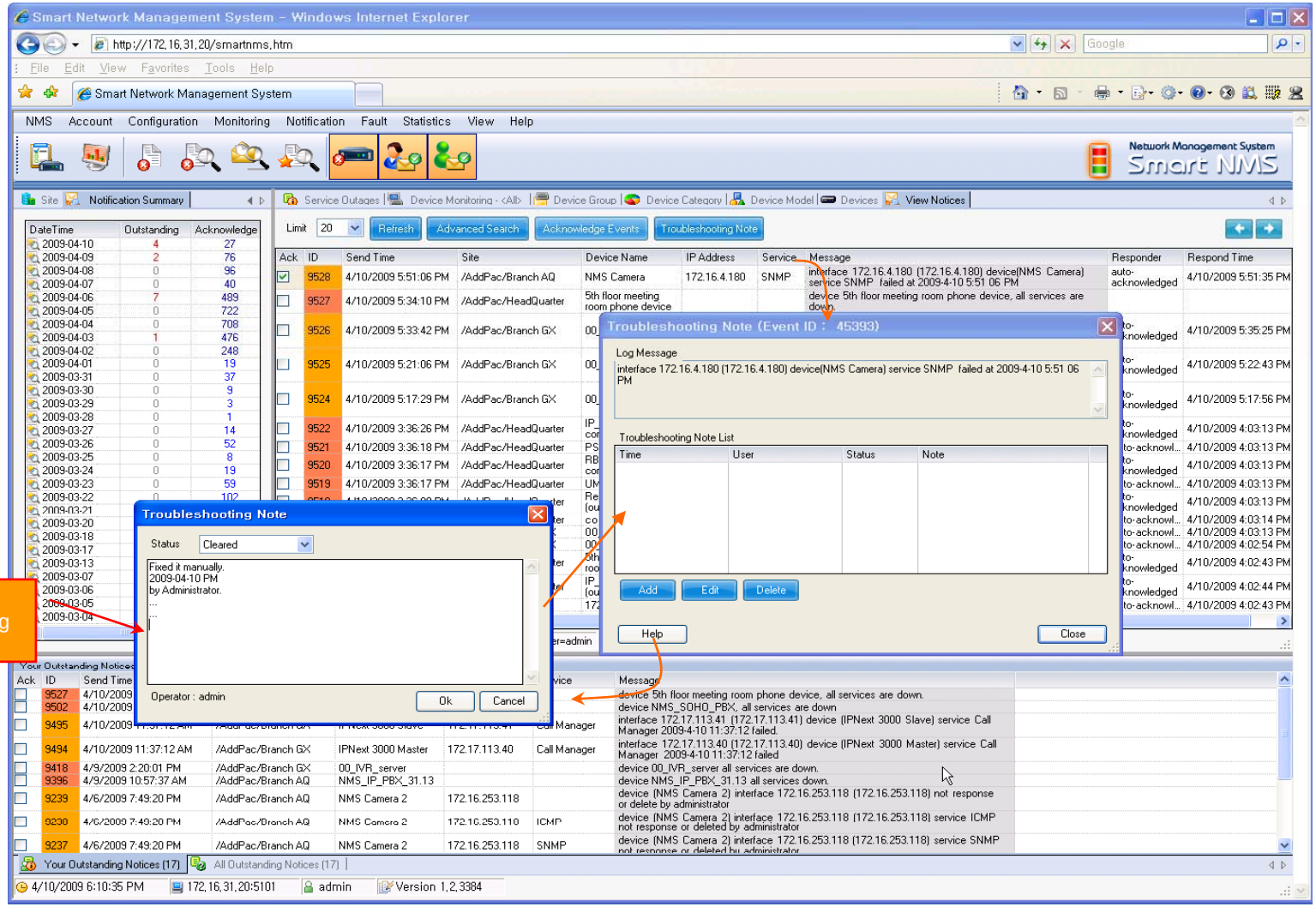
- Provide both summary view and detailed event message
- Can Write troubleshooting job note for each event manually
- Administrator can query for a history fault with search condition
- Each fault is related to the several raw events

Device Fault History Management

daily fault event summary statistics information

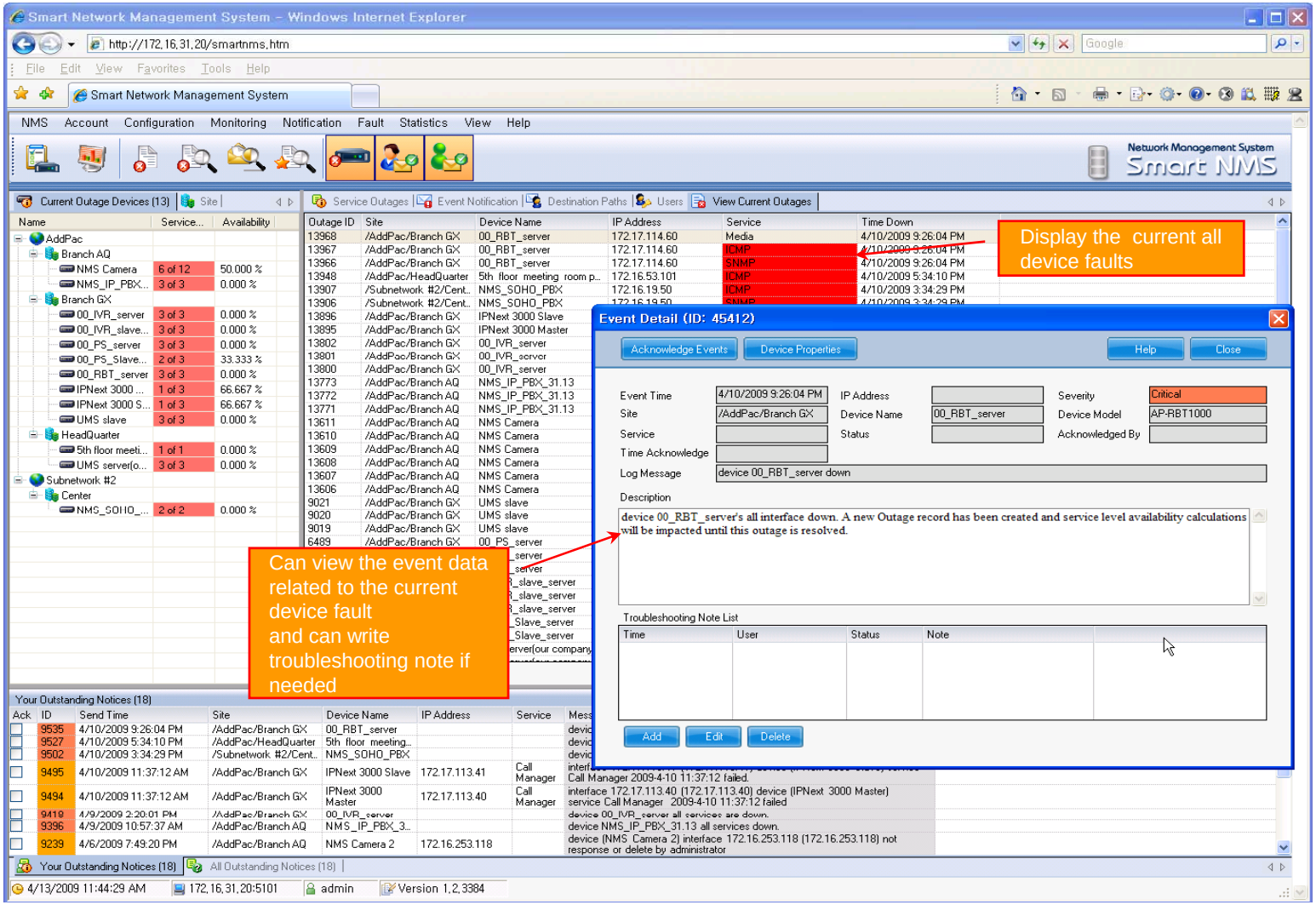
detail fault event history list up with filter condition (advanced search)

Device Fault History Management

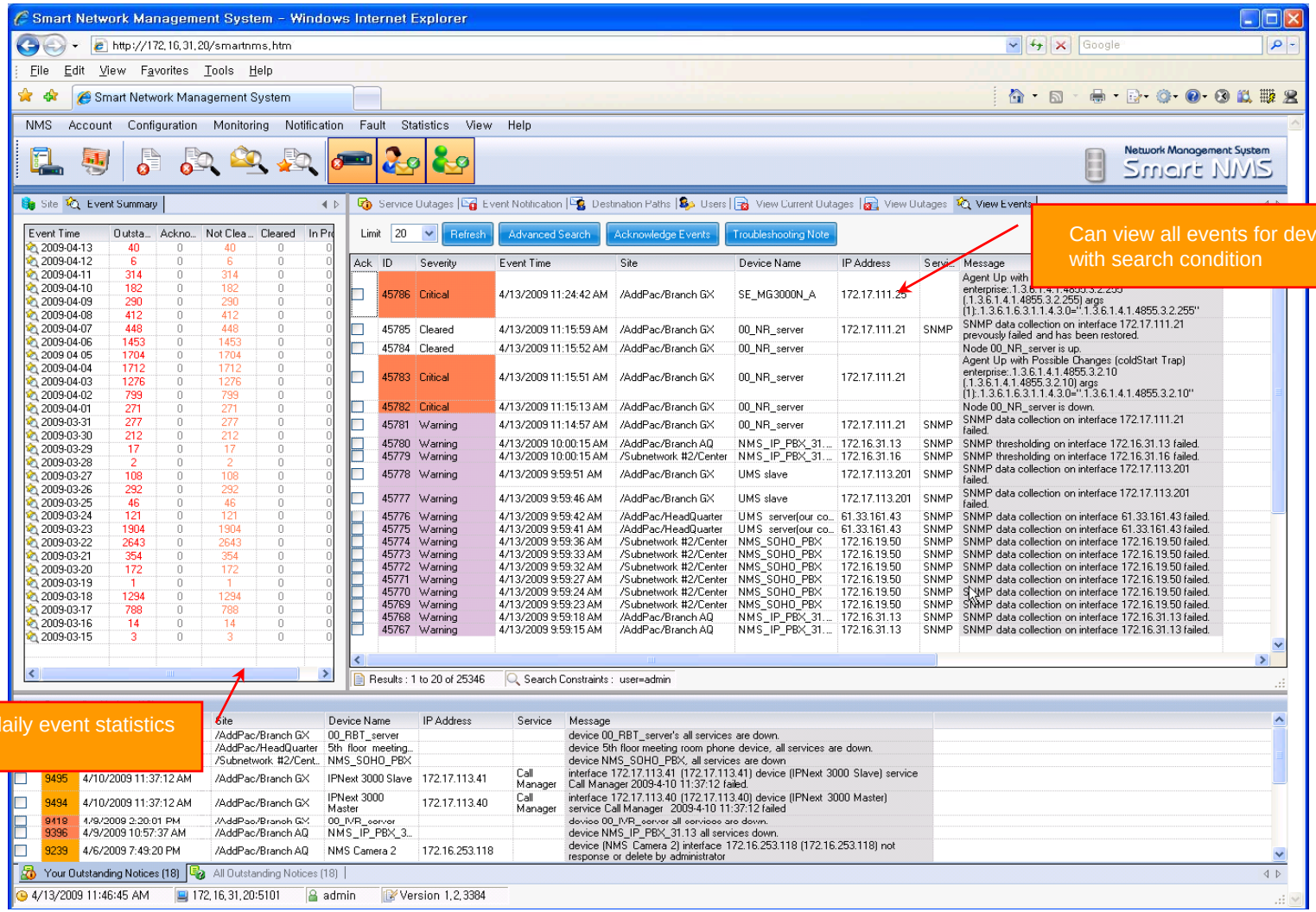


Can write troubleshooting note if needed

Current Device Fault (Outage)



Device Event History



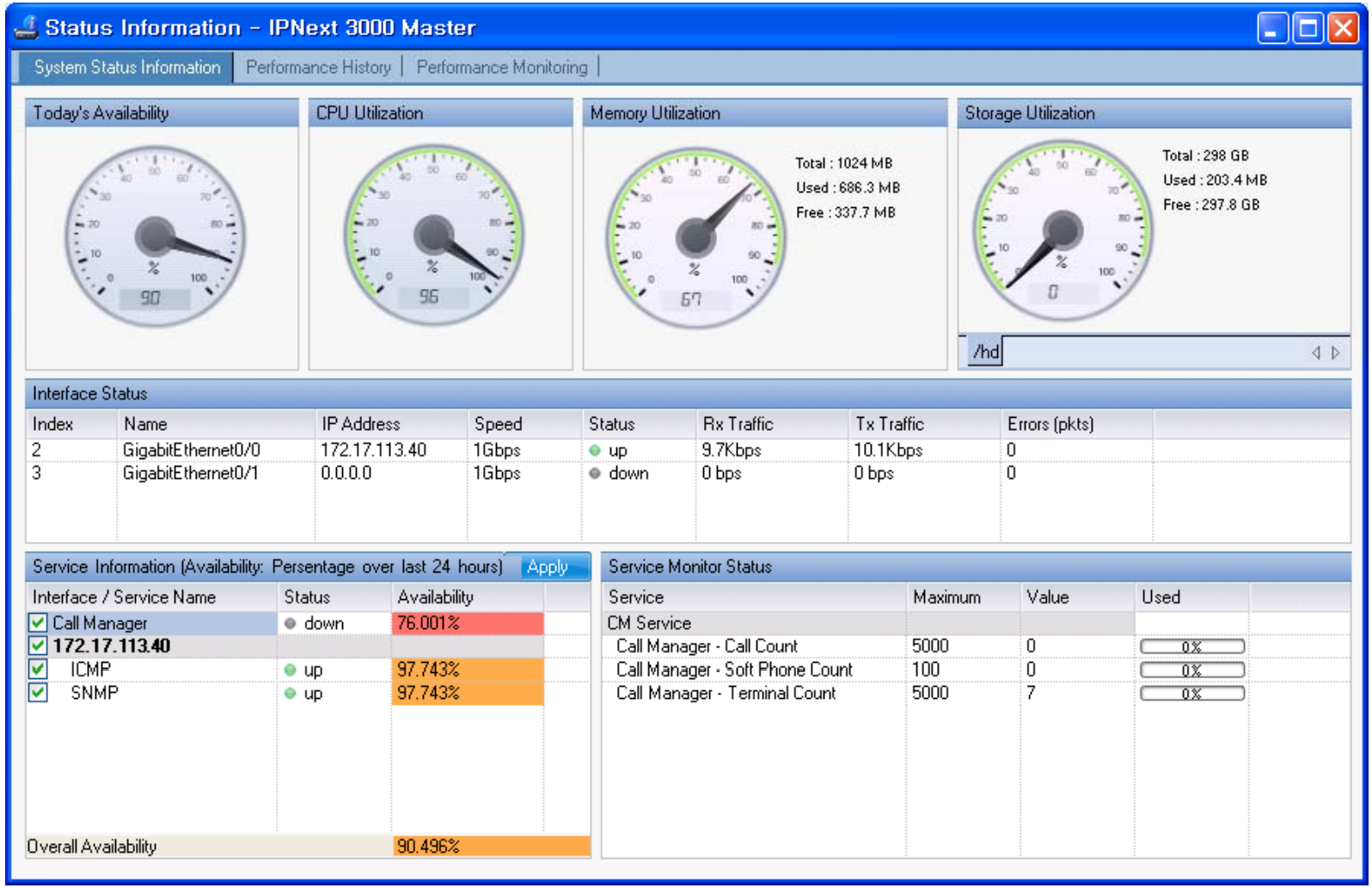
Can view all events for devices with search condition

summarize daily event statistics data

Device Status Information

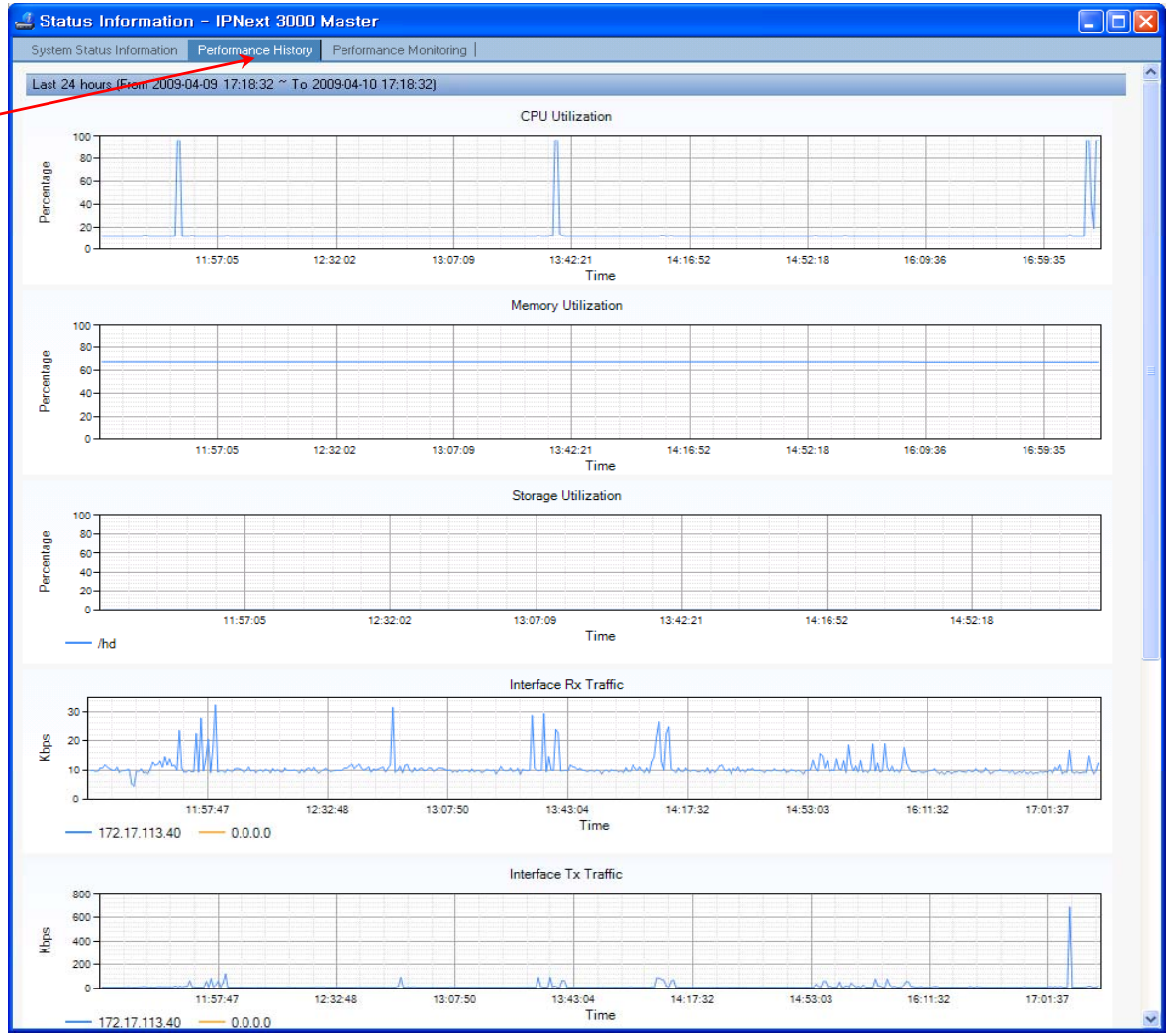
- System Performance Information (CPU, HDD, Memory,…)
- Provide device current service status (up/down)
- Provide device main status (max value vs current value)
- Display Graph Series with System Performance Information
- Monitor Main Status Flow with System Monitoring View

Device Status Information

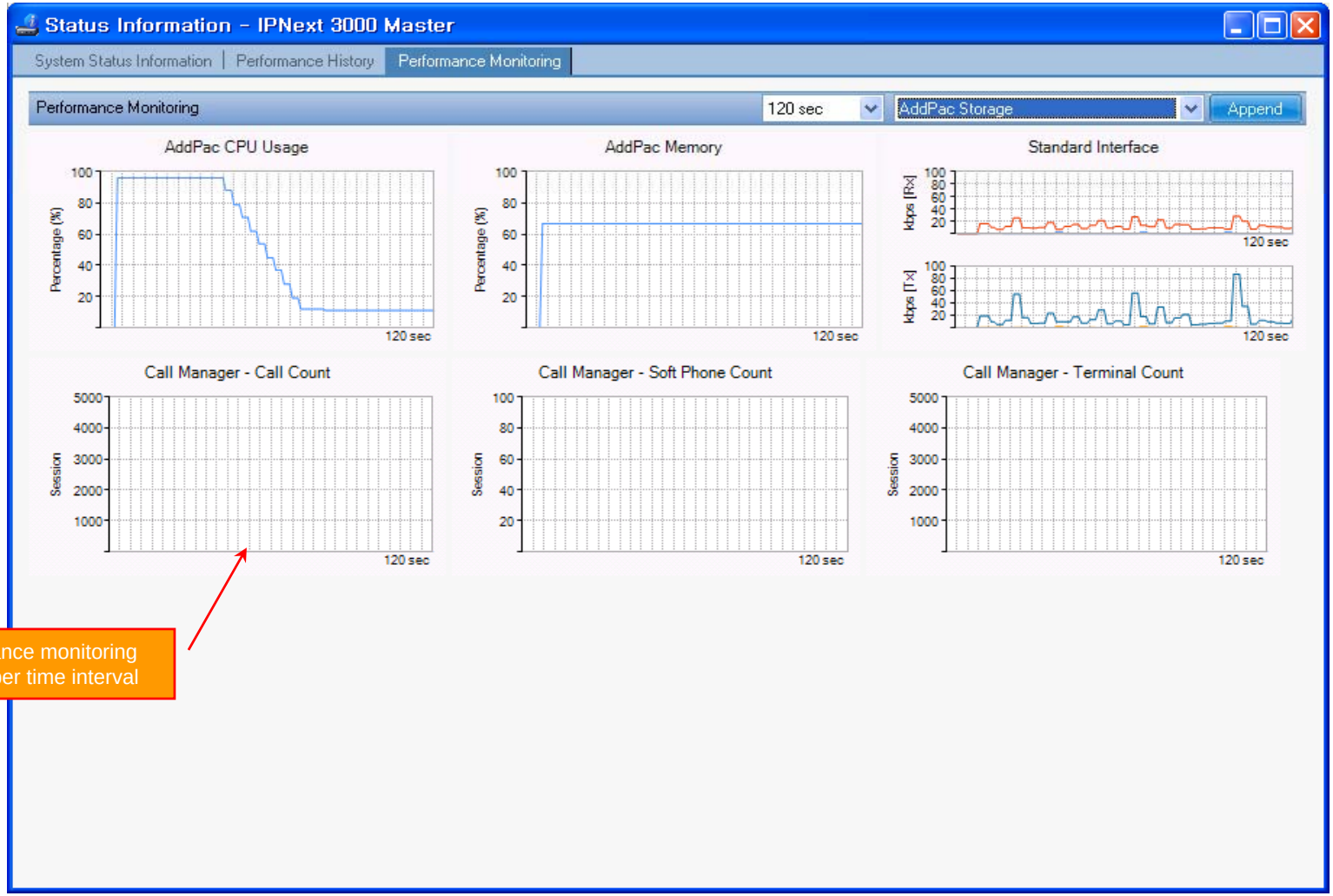


Device Status Information

performance analysis graph for last 24 hours



Device Status Information

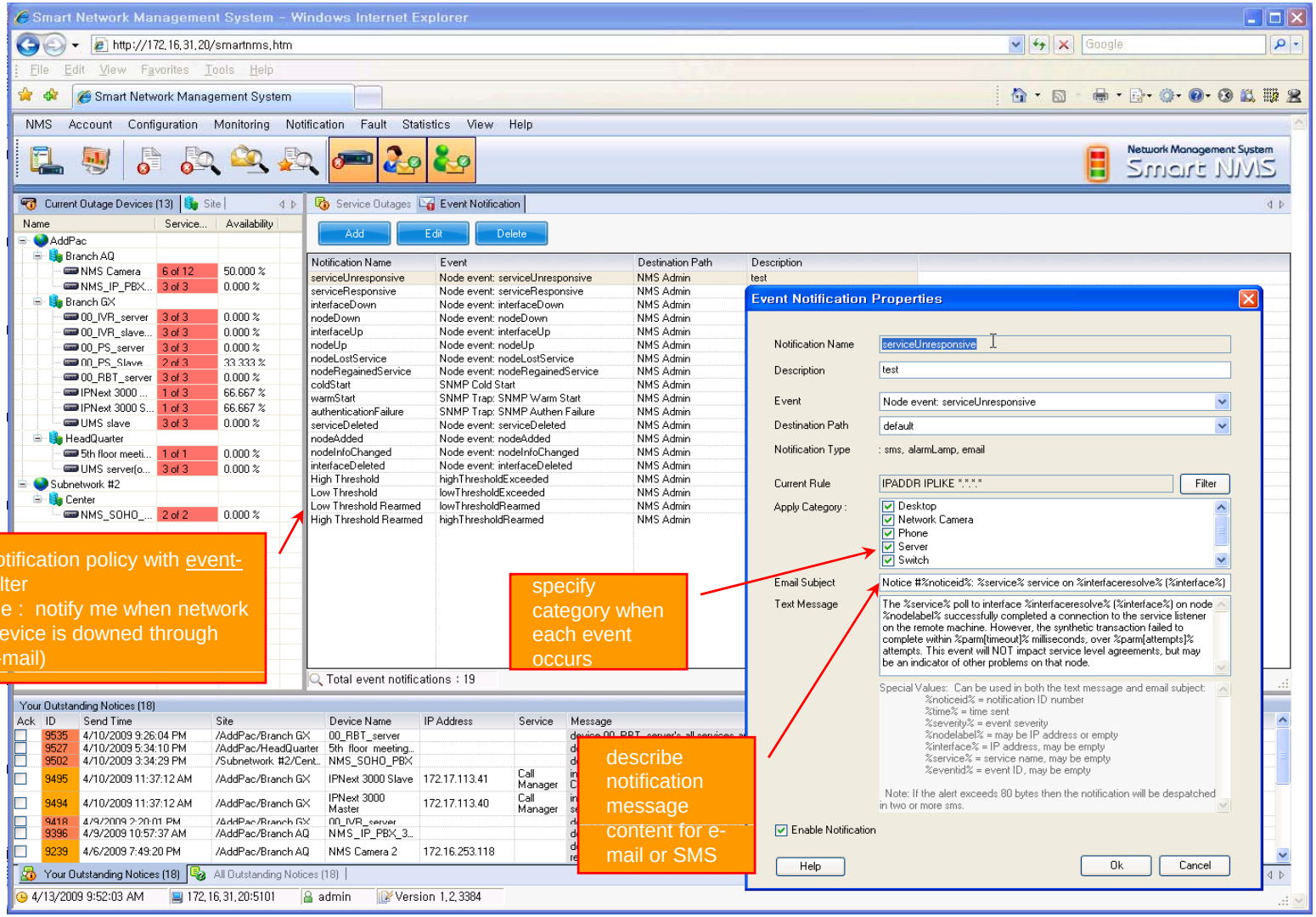


performance monitoring
with proper time interval

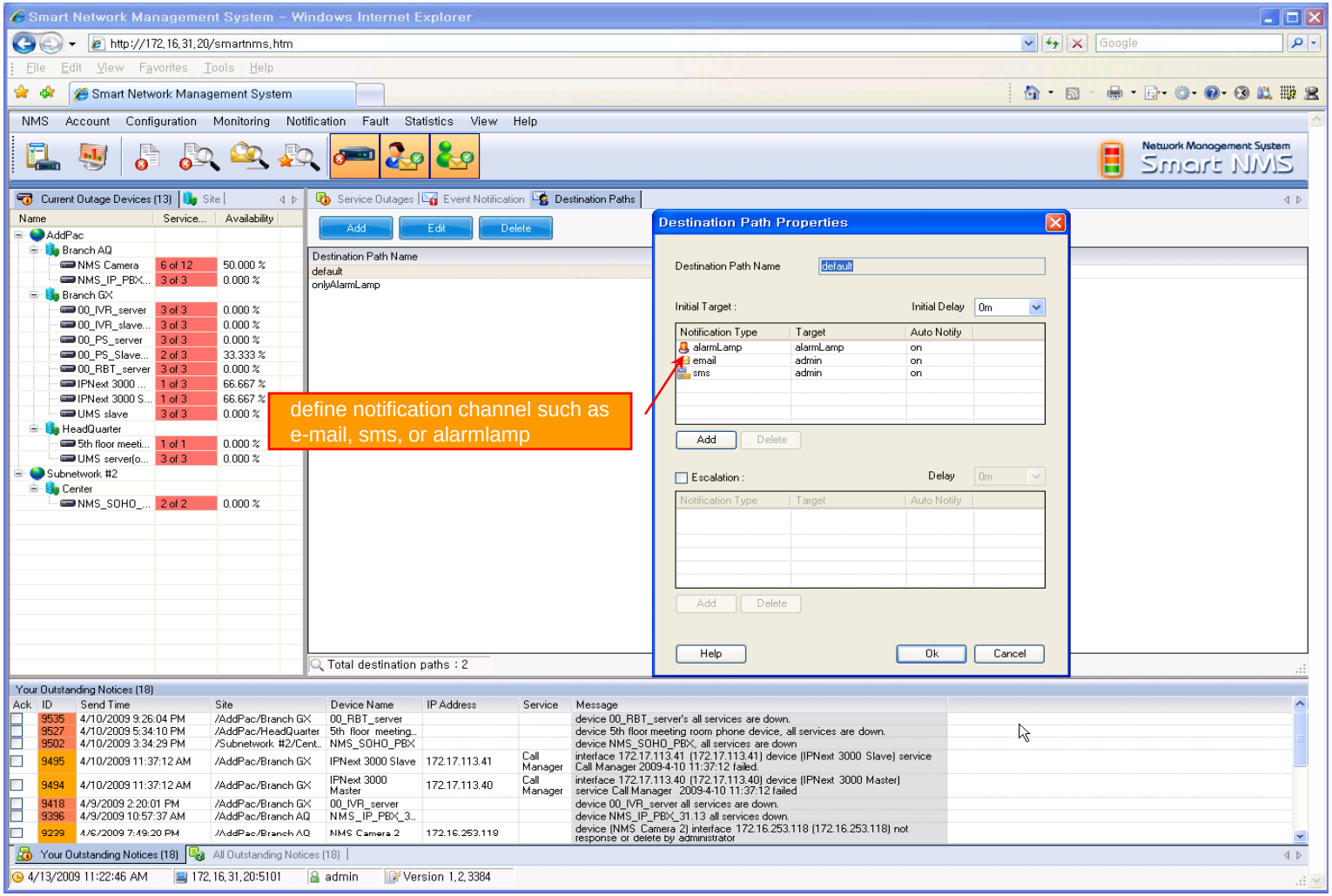
Notification Management

- Notify administrator for important event such as critical device fault when proper action needs
- Provide several notification channel such as SMS, e-mail, alarm lamp
- Notification channel configuration for each event
- Manage notification with device category such as Server, Terminal, PC, etc
- Provide Alarm with audible (play sound), visible (alarm lamp) form

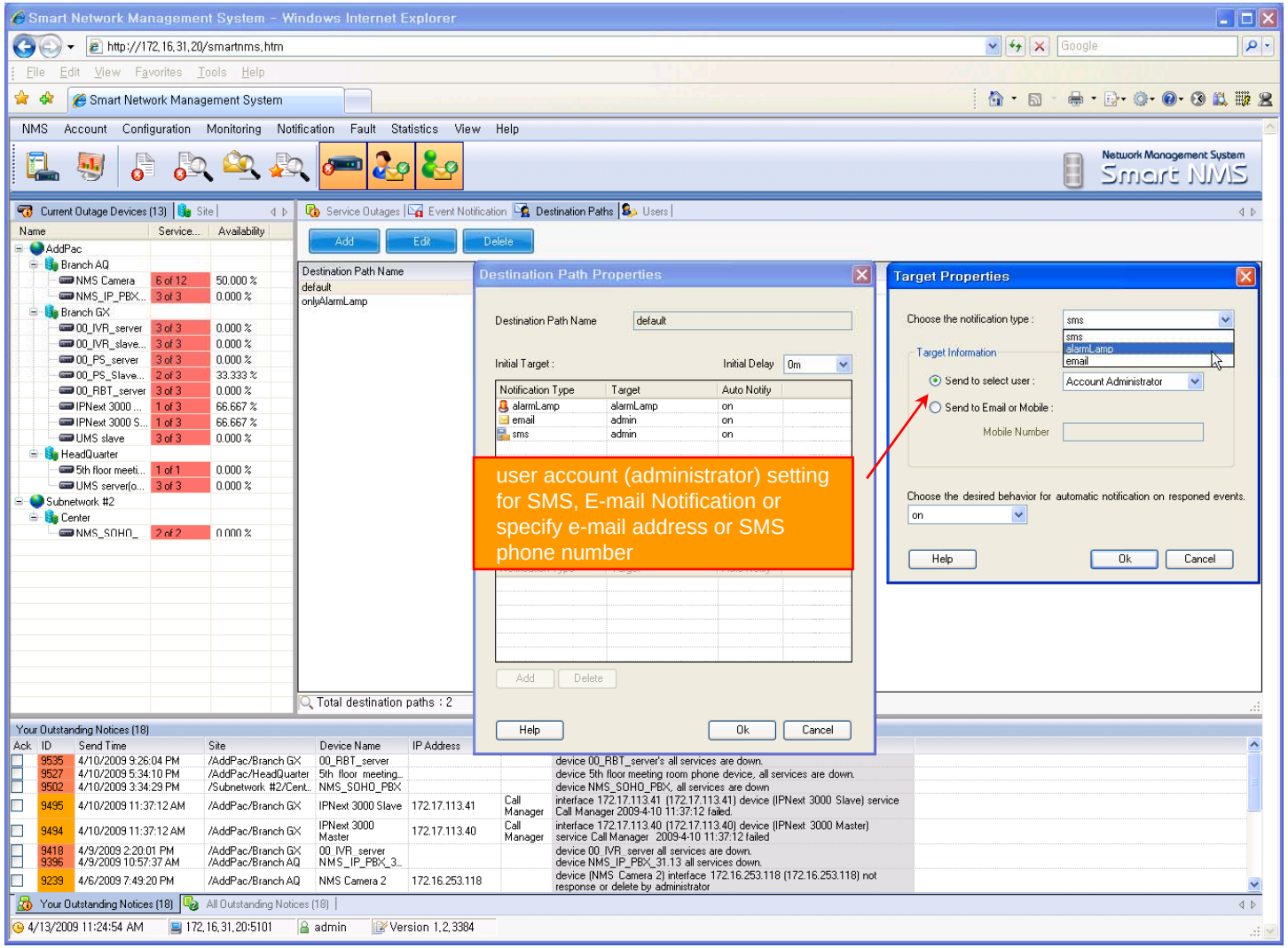
Event Notification Management



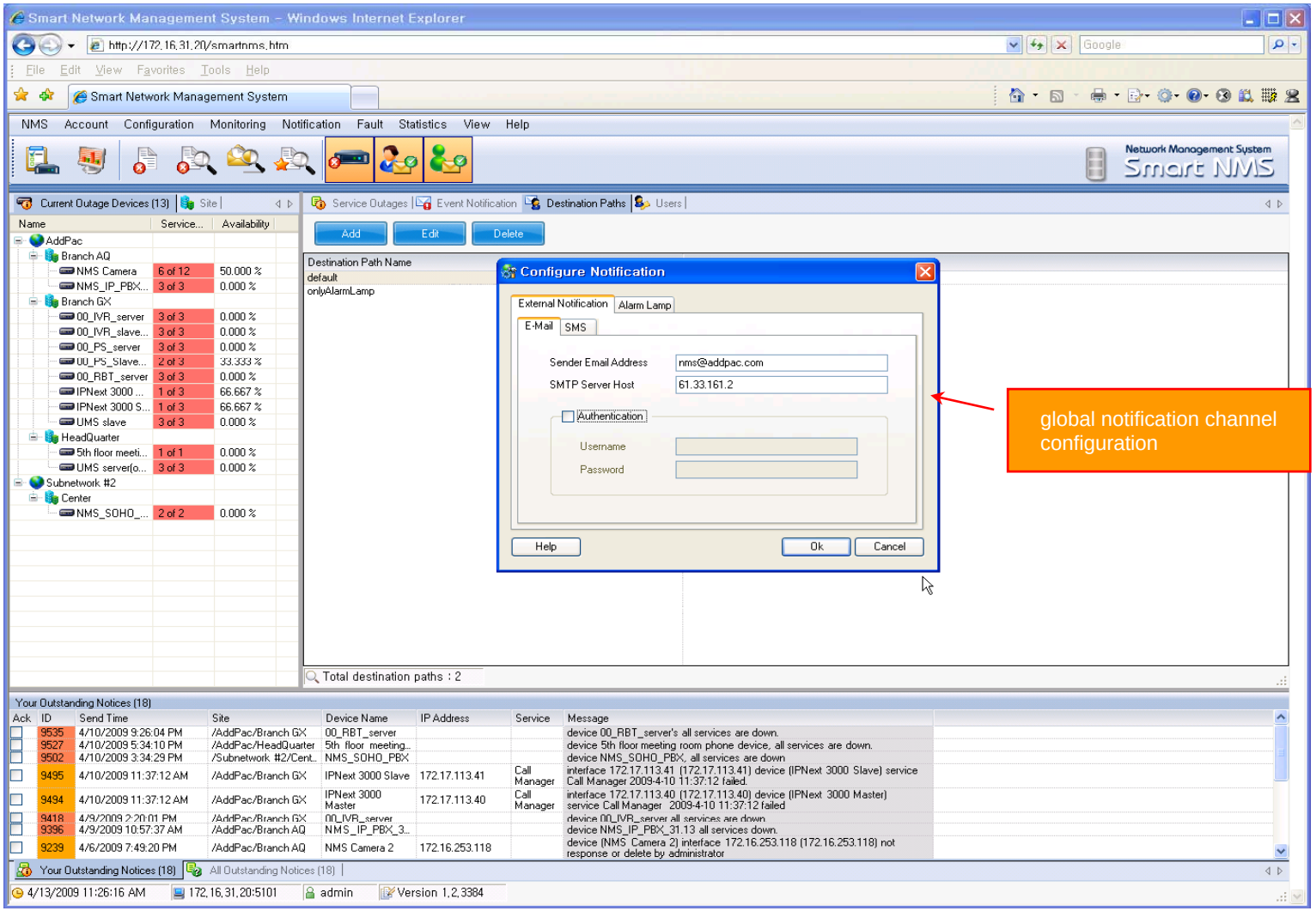
Event Notification Management



Event Notification Management

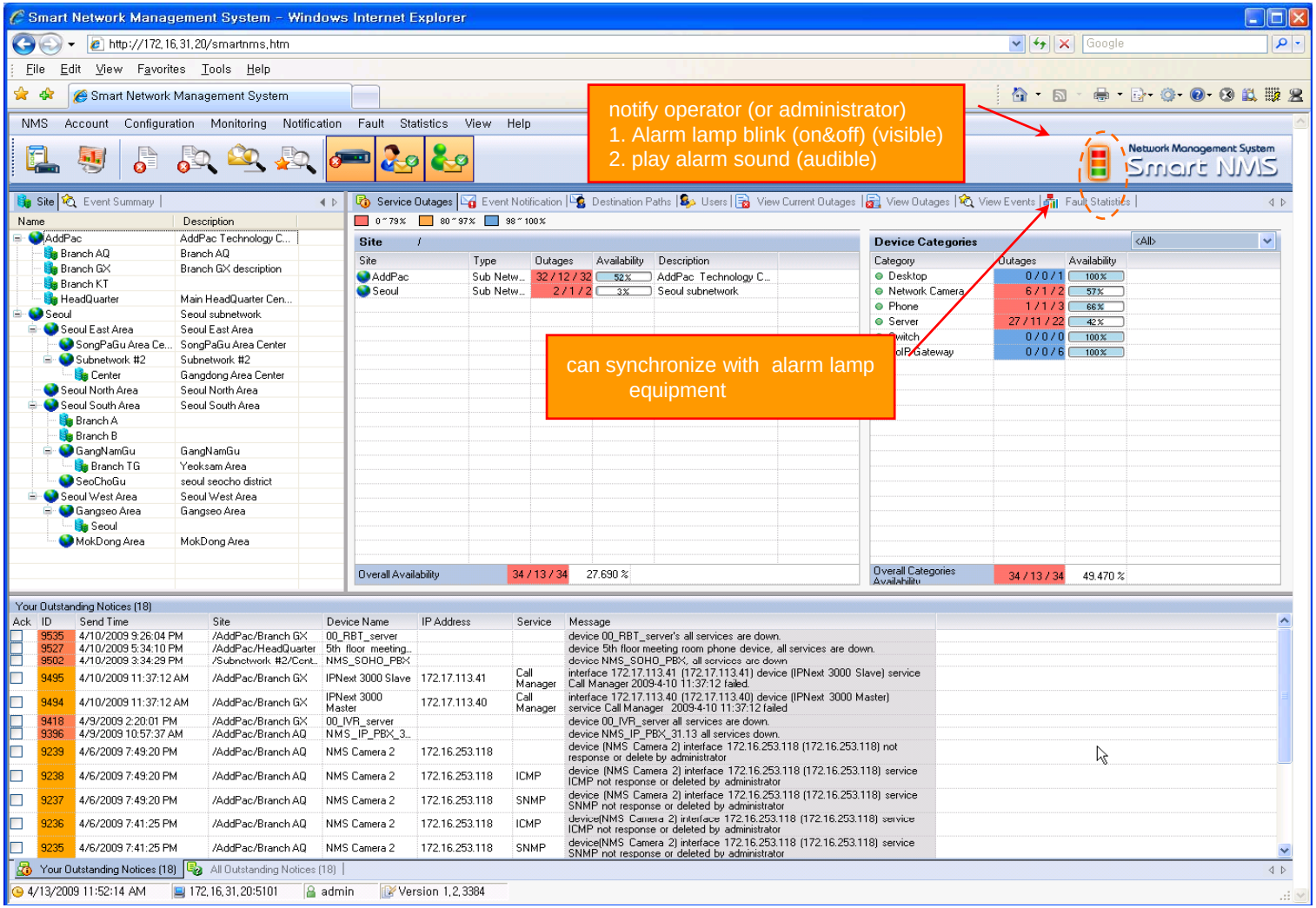


Configuration



global notification channel configuration

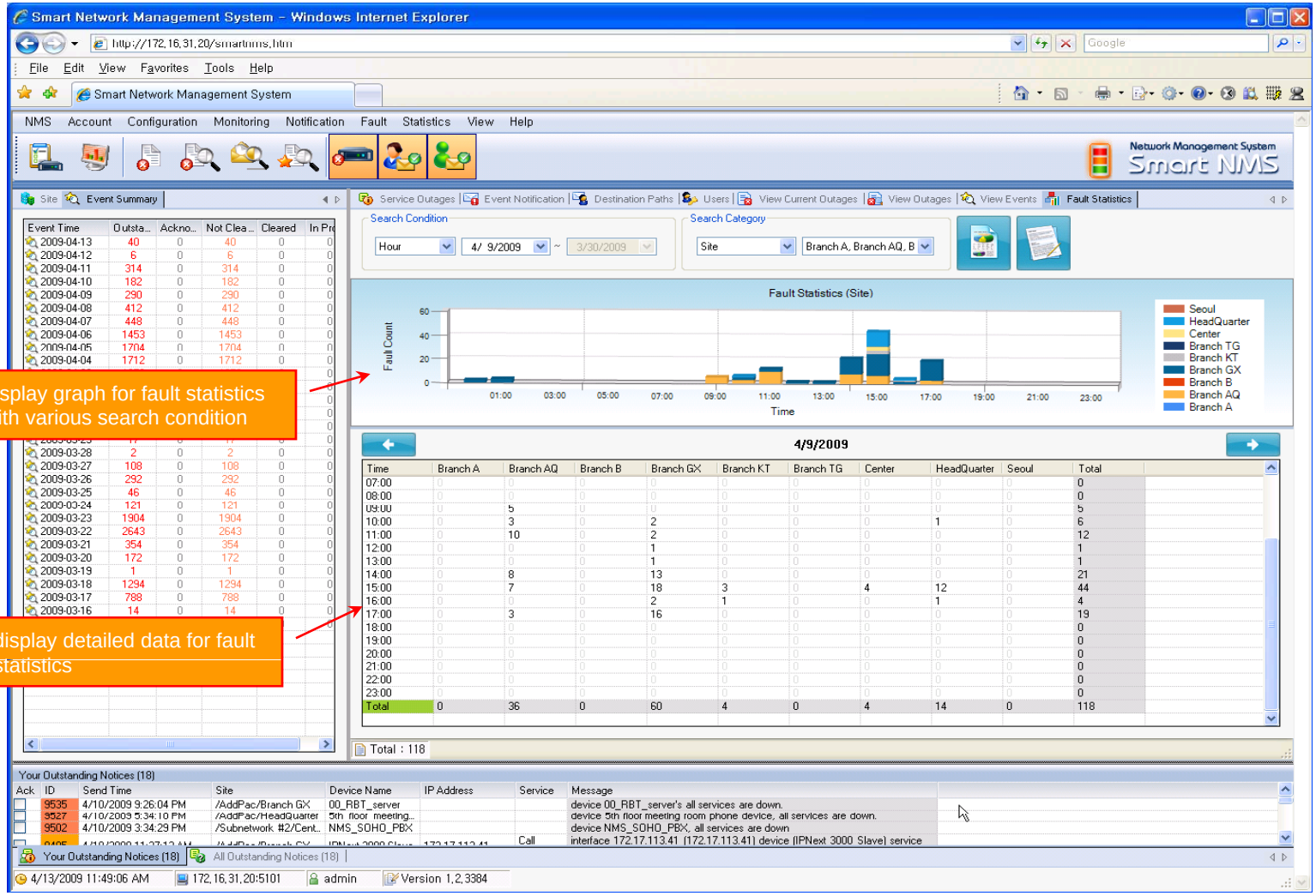
Audible & Visible Alarm



Fault Statistics

- analyze for a fault event with graph and detailed list data
- Report form generation and print out for statistics result

Fault Statistics



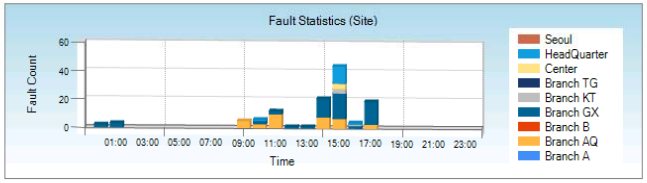
Fault Statistics – Report Generation

report generation for fault statistics and print out the result

Statistics Report

Fault Statistics AddPac

Search Condition 4/9/2009
Search Category Site



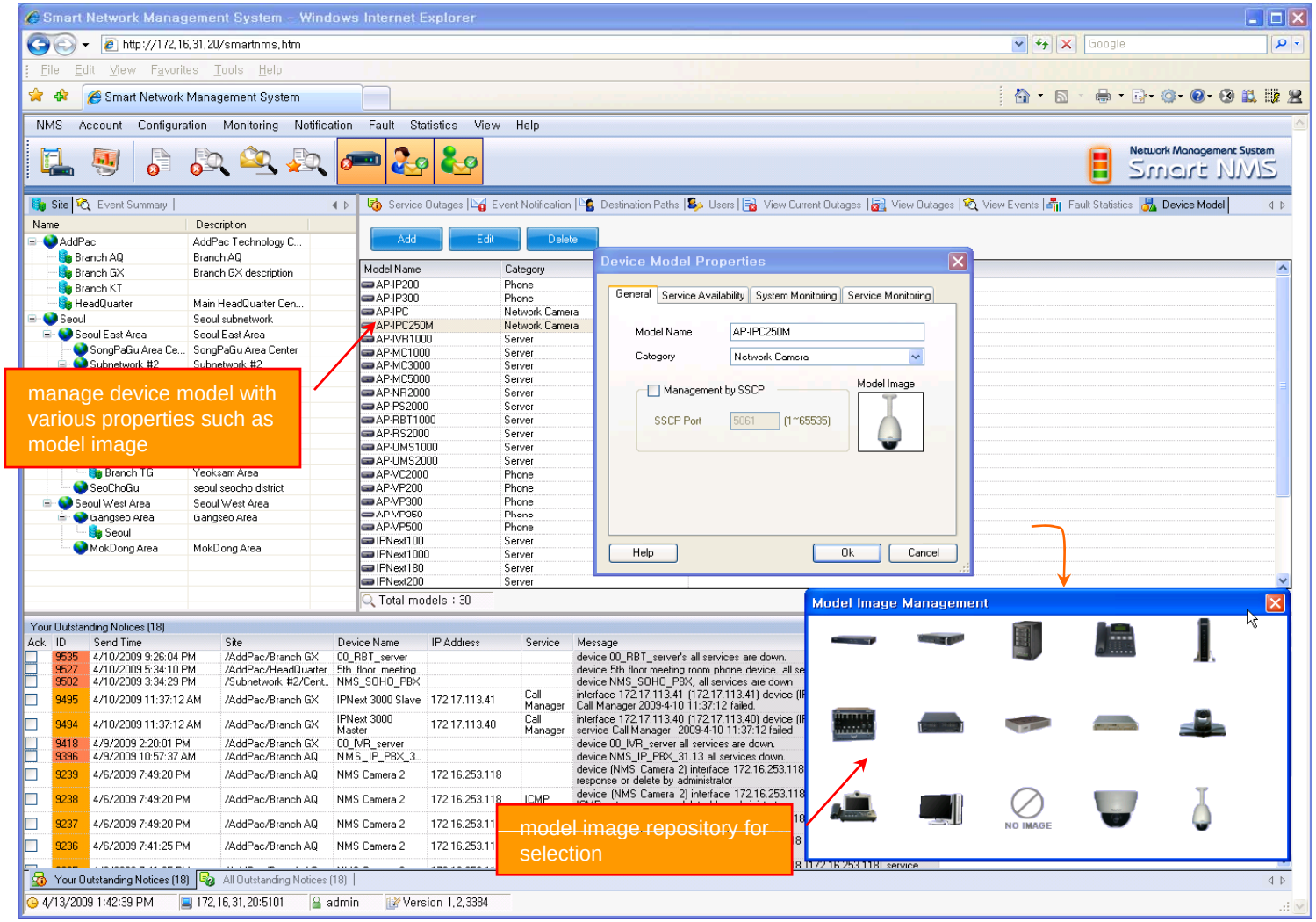
Time	Branch A	Branch AQ	Branch B	Branch GX	Branch KT	Branch TG	Center	HeadQuarter	Seoul	Total
00:00	0	0	0	2	0	0	0	0	0	2
01:00	0	0	0	3	0	0	0	0	0	3
02:00	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0
09:00	0	5	0	0	0	0	0	0	0	5
10:00	0	3	0	2	0	0	0	1	0	6
11:00	0	10	0	2	0	0	0	0	0	12
12:00	0	0	0	1	0	0	0	0	0	1
13:00	0	0	0	1	0	0	0	0	0	1
14:00	0	8	0	13	0	0	0	0	0	21
15:00	0	7	0	18	3	0	4	12	0	44
16:00	0	0	0	2	1	0	0	1	0	4
17:00	0	3	0	16	0	0	0	0	0	19
18:00	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0
Total	0	36	0	60	4	0	4	14	0	118

Print Time : 4/13/2009 11:50:15 AM

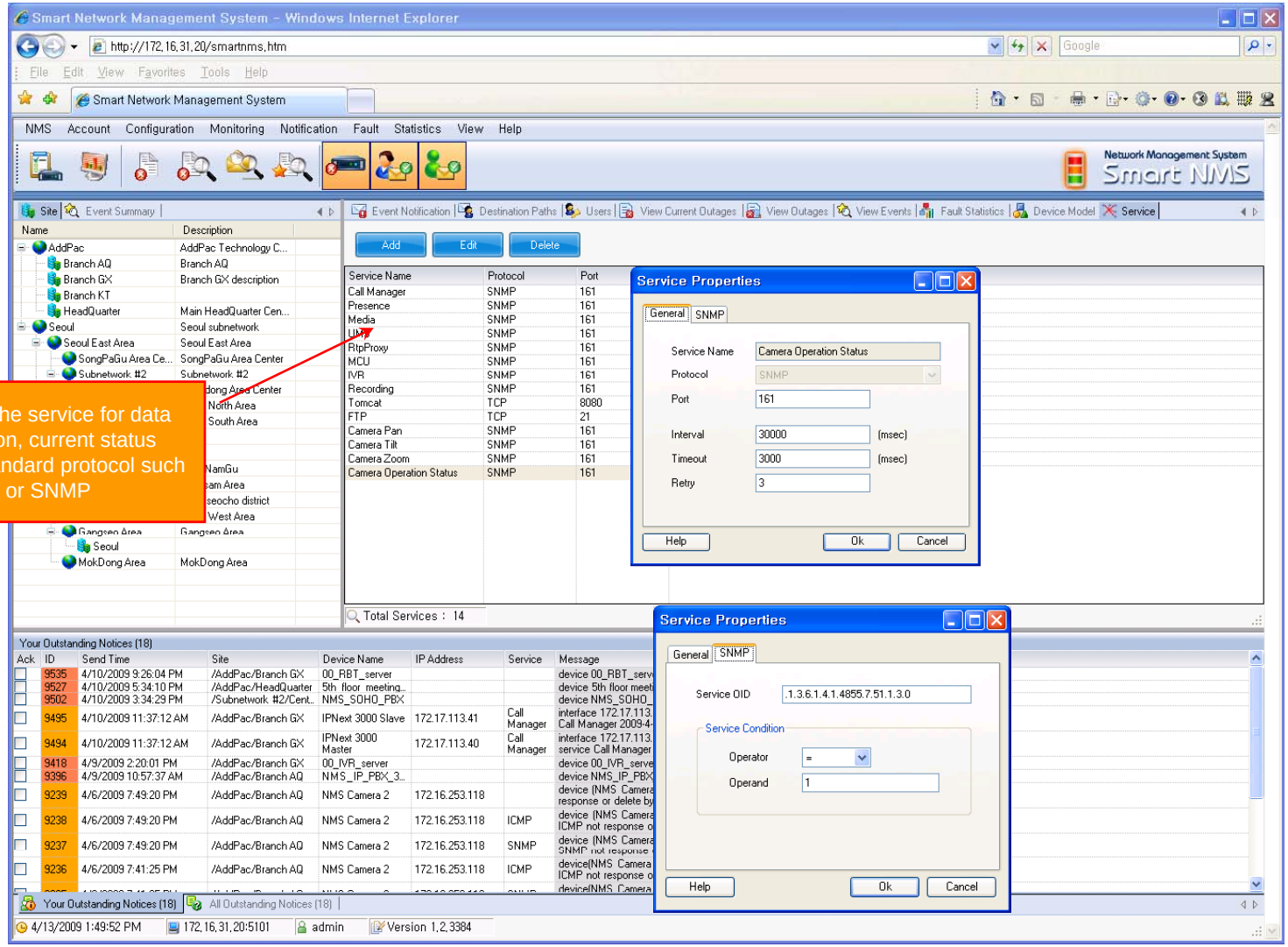
Model & Service Management

- Define new model with provided template image & properties
- Customize data collection with standard protocol such as TCP, SNMP

Device Model Management



Service Definition



define the service for data collection, current status with standard protocol such as TCP or SNMP

Thank you!

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