1~2 Port Analog VoIP Gateway Solution

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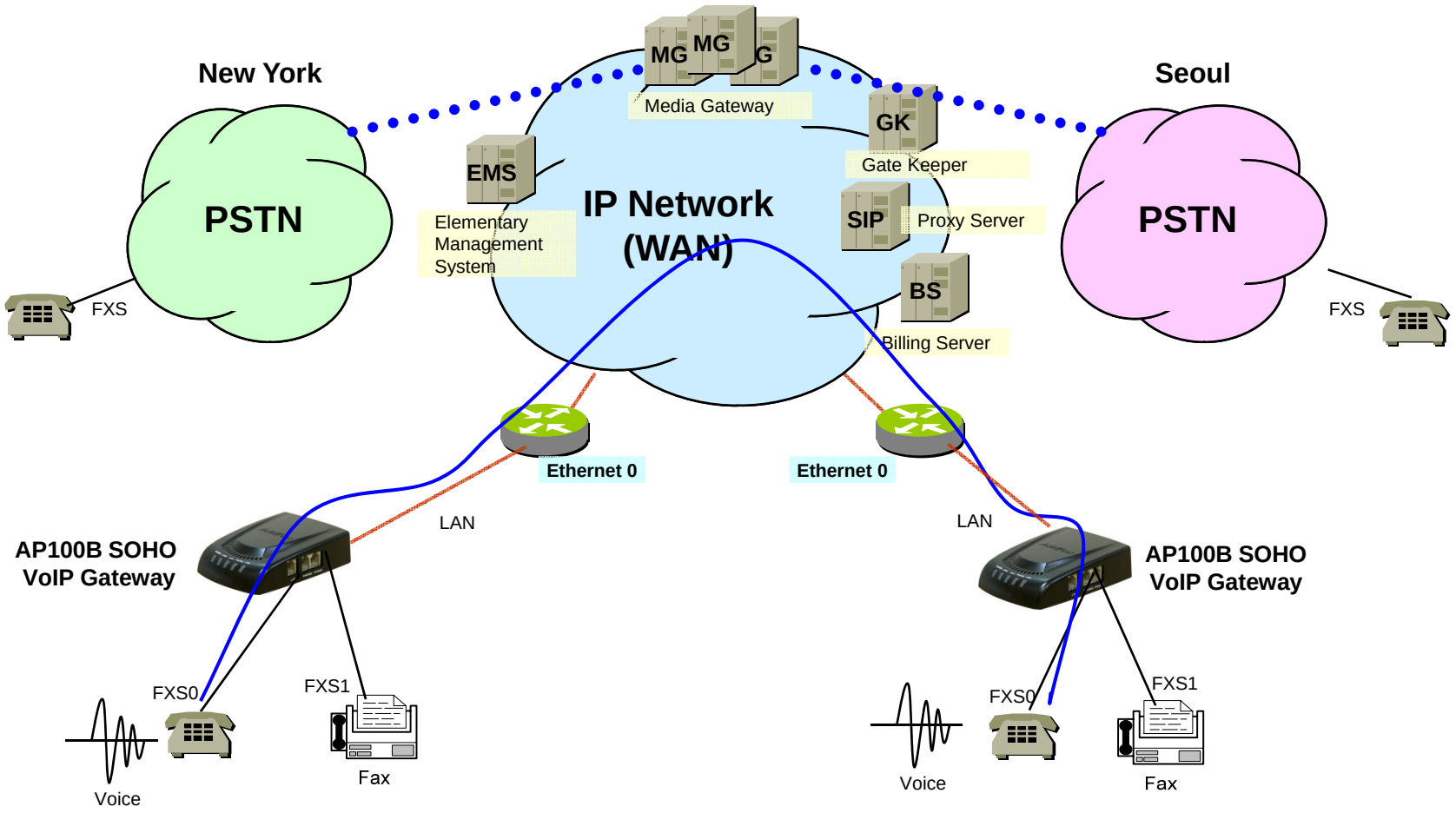
- VoIP Gateway Smart Web Manager
- VoIP Gateway Smart Network Management (AP-SNMS)

VoIP Gateway Service Diagram (FXS Port)



AP100 Analog VoIP Gateway Series

Product / Features	AP100	AP100P	AP100B	AP100E	AP100D	AP100F
						
FXS Ports	1	1	2	1	N/A	N/A
FXO Ports	N/A	N/A	N/A	1	2	1
PSTN Backup Relay	N/A	1	1	N/A	N/A	N/A
Signaling	SIP, H.323	SIP, H.323	SIP, H.323	SIP, H.323	SIP, H.323	SIP, H.323
LAN Port	2	2	2	2	2	2
Console	N/A	N/A	N/A	N/A	N/A	N/A
Power	External Adaptor	External Adaptor	External Adaptor	External Adaptor	External Adaptor	External Adaptor

AP100 1~2 Port
VoIP Gateway Series

AP100 1-Port FXS VoIP Gateway

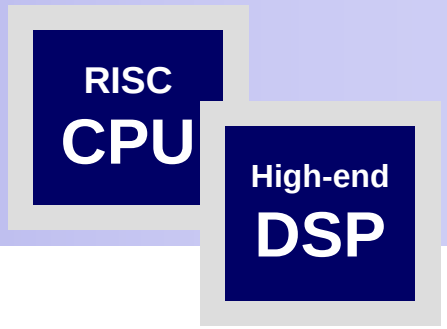
Product Overview

AP100 VoIP Gateway

- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- New Smart Easy Setup for AP100
- SNMS (Smart Network Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Small, Light and Compact Design
- Power Switch for Stability and Status LEDs
- Optional PSTN Backup Interface

Hardware Specification

AP100 VoIP Gateway



- RISC Microprocessor Computing Power
  + High End Programmable DSP
- VoIP FXS Port
  - AP100 Model : One(1) FXS Port
  - AP100P Model : One(1) FXS Port + PSTN Backup
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- Power Supply
  - External Power Adaptor (5V, 2A)
- Power On/Off Switch
- Power LED, LAN LED, FXS Port LED

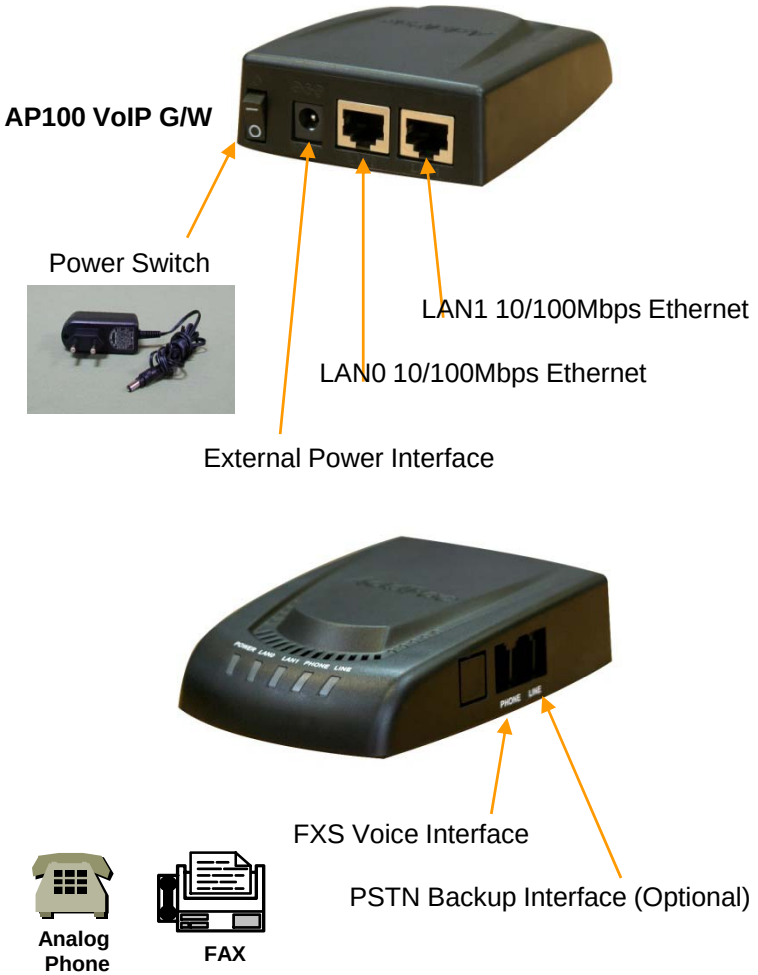
Hardware Specification

AP100 VoIP Gateway

Hardware Specifications

AP100 VoIP Gateway	**Basic Specifications**
CPU	32Bit RISC Microprocessor
Voice Interface	1-Ports FXS Voice Interface(RJ-11)
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
PSTN Backup Port (Optional)	1-Port PSTN Backup Port(RJ-11)
Flash Memory	2Mbyte High-speed Flash Memory
Base Memory	16Mbyte High-speed SDRAM
Power Requirement	External Power Supply Adaptor / VAC 110~220V, 50/60Hz, 10Watt
Operating Temperature	0ºC ~ 45ºC (32 ºF ~ 122ºF)
Storage Temperature	-40ºC ~ 85ºC (-40ºC ~ 185ºF)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	28.8mm x 77mm x 111mm (H x W x D)

Network interface Configurations



AP100B 2-Port FXS VoIP Gateway

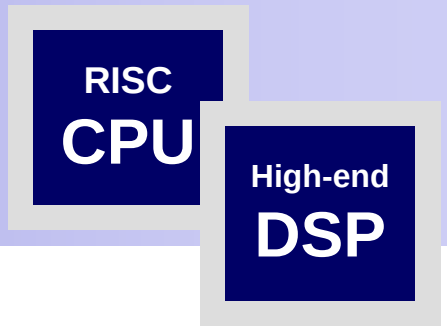
Product Overview

AP100B VoIP Gateway

- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- New Smart Easy Setup for AP100B
- SNMS (Smart Network Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Small, Light and Compact Design
- Power Switch for Stability and Status LEDs
- PSTN Backup Interface + Two(2) Port FXS Interface

Hardware Specification

AP100B VoIP Gateway



- RISC Microprocessor Computing Power
  + High End Programmable DSP
- VoIP FXS Port
  - AP100B Model : Two(2) FXS Port + PSTN Backup
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- Power Supply
  - External Power Adaptor (5V, 2A)
- Power On/Off Switch
- Power LED, LAN LED, FXS Port LED (Dual Color)

Hardware Specification

AP100B VoIP Gateway

Hardware Specifications

AP100B VoIP Gateway	**Basic Specifications**
CPU	32Bit RISC Microprocessor
Voice Interface	2-Ports FXS Voice Interface(RJ-11)
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
PSTN Backup Port	1-Port PSTN Backup Port(RJ-11)
Flash Memory	4Mbyte High-speed Flash Memory
Base Memory	16Mbyte High-speed SDRAM
Power Requirement	External Power Supply Adaptor / VAC 110~220V, 50/60Hz, 10Watt
Operating Temperature	0ºC ~ 45ºC (32 ºF ~ 122ºF)
Storage Temperature	-40ºC ~ 85ºC (-40ºC ~ 185ºF)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	28.8mm x 77mm x 111mm (H x W x D)

Network interface Configurations

AP100E 1-Port FXS + 1-Port FXO VoIP Gateway

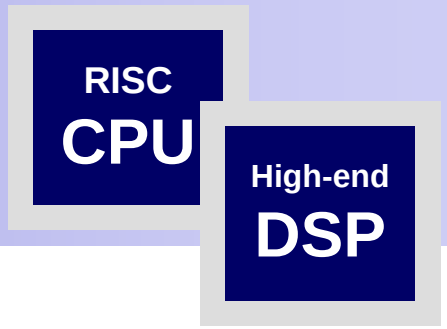
Product Overview

AP100E 1-Port FXO & 1-Port FXS VoIP Gateway

- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Web based Smart Easy Setup for AP100E
- SNMS (Smart Network Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Small, Light and Compact Design
- Power Switch for Stability and Status LEDs

Hardware Specification

AP100E 1-Port FXO & 1-Port FXS VoIP Gateway



- RISC Microprocessor Computing Power
  + High End Programmable DSP
- 1-Port FXO & 1-Port FXS VoIP Port
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- Power Supply
  - External Power Adaptor (5V, 2A)
- Power On/Off Switch
- Power LED, LAN LED, FXO Port LED

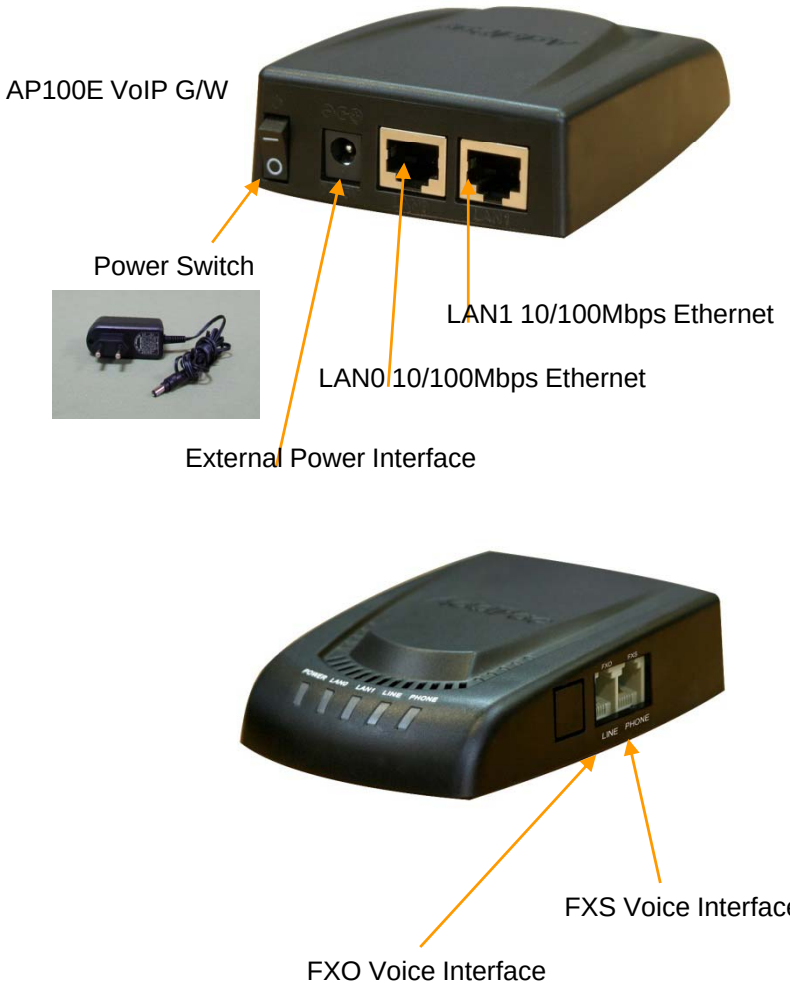
Hardware Specification

AP100E 1-Port FXO & 1-Port FXS VoIP Gateway

Hardware Specifications

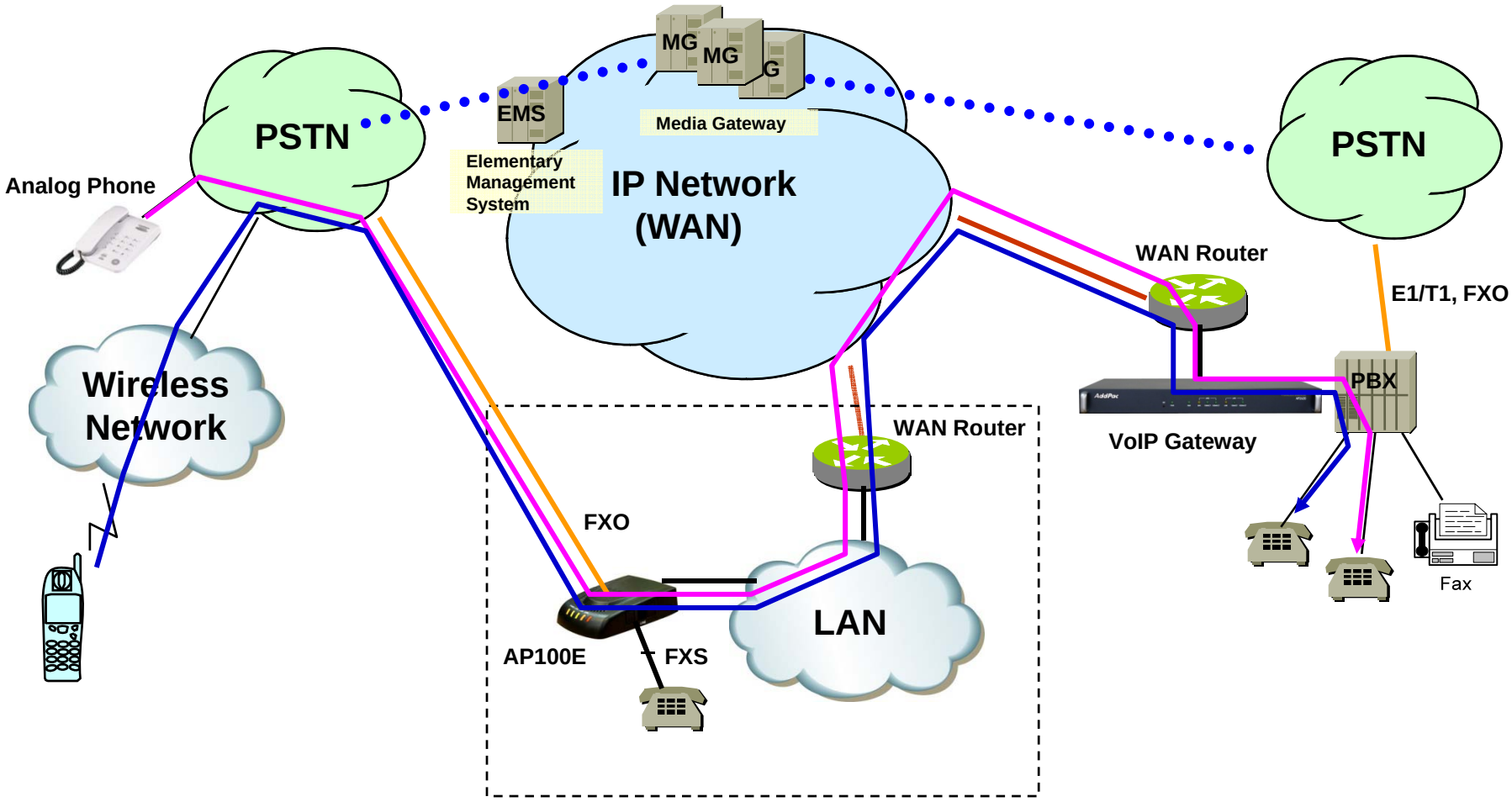
AP100E VoIP Gateway	**Basic Specifications**
CPU	32Bit RISC Microprocessor
Voice Interface	1-Port FXO & 1-Port FXS Voice Interface(RJ-11)
Ethernet Interface	2-Port 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	2Mbyte High-speed Flash Memory
Base Memory	16Mbyte High-speed SDRAM
Power Requirement	External Power Supply Adaptor / VAC 110~220V, 50/60Hz, 10Watt
Operating Temperature	0ºC ~ 45ºC (32 ºF ~ 122ºF)
Storage Temperature	-40ºC ~ 85ºC (-40ºC ~ 185ºF)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	28.8mm x 77mm x 111mm (H x W x D)

Network interface Configurations



Standard Application

AP100E 1-Port FXO & 1-Port FXS VoIP Gateway



AP100D 2-Port FXO VoIP Gateway

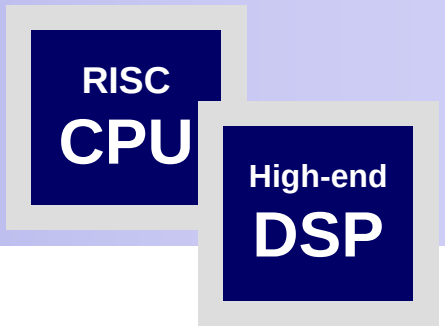
Product Overview

AP100D 2-Port FXO VoIP Gateway

- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2)-Port FXO Analog Interface
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Web based Smart Easy Setup for AP100D
- Smart NMS(Network Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Small, Light and Compact Design
- Power Switch for Stability and Status LEDs

Hardware Specification

AP100D 2-Port FXO VoIP Gateway



- RISC Microprocessor Computing Power
  + High End Programmable DSP
- 2-Port VoIP FXO Port
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- Power Supply
  - External Power Adaptor (5V, 2A)
- Power On/Off Switch
- Power LED, LAN LED, FXO Port LED

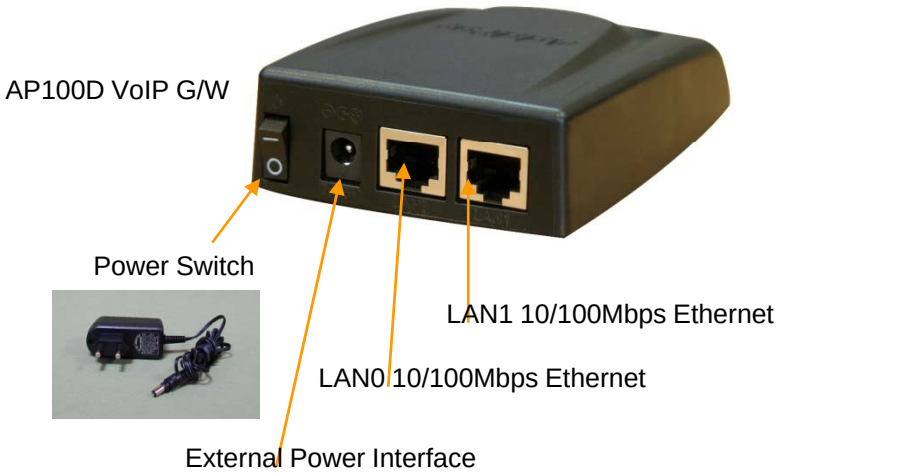
Hardware Specification

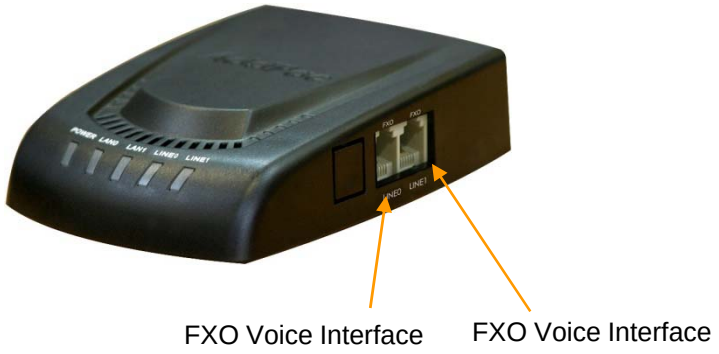
AP100D 2-Port FXO VoIP Gateway

Hardware Specifications

AP100D VoIP Gateway	**Basic Specifications**
CPU	32Bit RISC Microprocessor
Voice Interface	2-Port FXO Voice Interface(RJ-11)
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	2Mbyte High-speed Flash Memory
Base Memory	16Mbyte High-speed SDRAM
Power Requirement	External Power Supply Adaptor / VAC 110~220V, 50/60Hz, 10Watt
Operating Temperature	0ºC ~ 45ºC (32 ºF ~ 122ºF)
Storage Temperature	-40ºC ~ 85ºC (-40ºC ~ 185ºF)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	28.8mm x 77mm x 111mm (H x W x D)

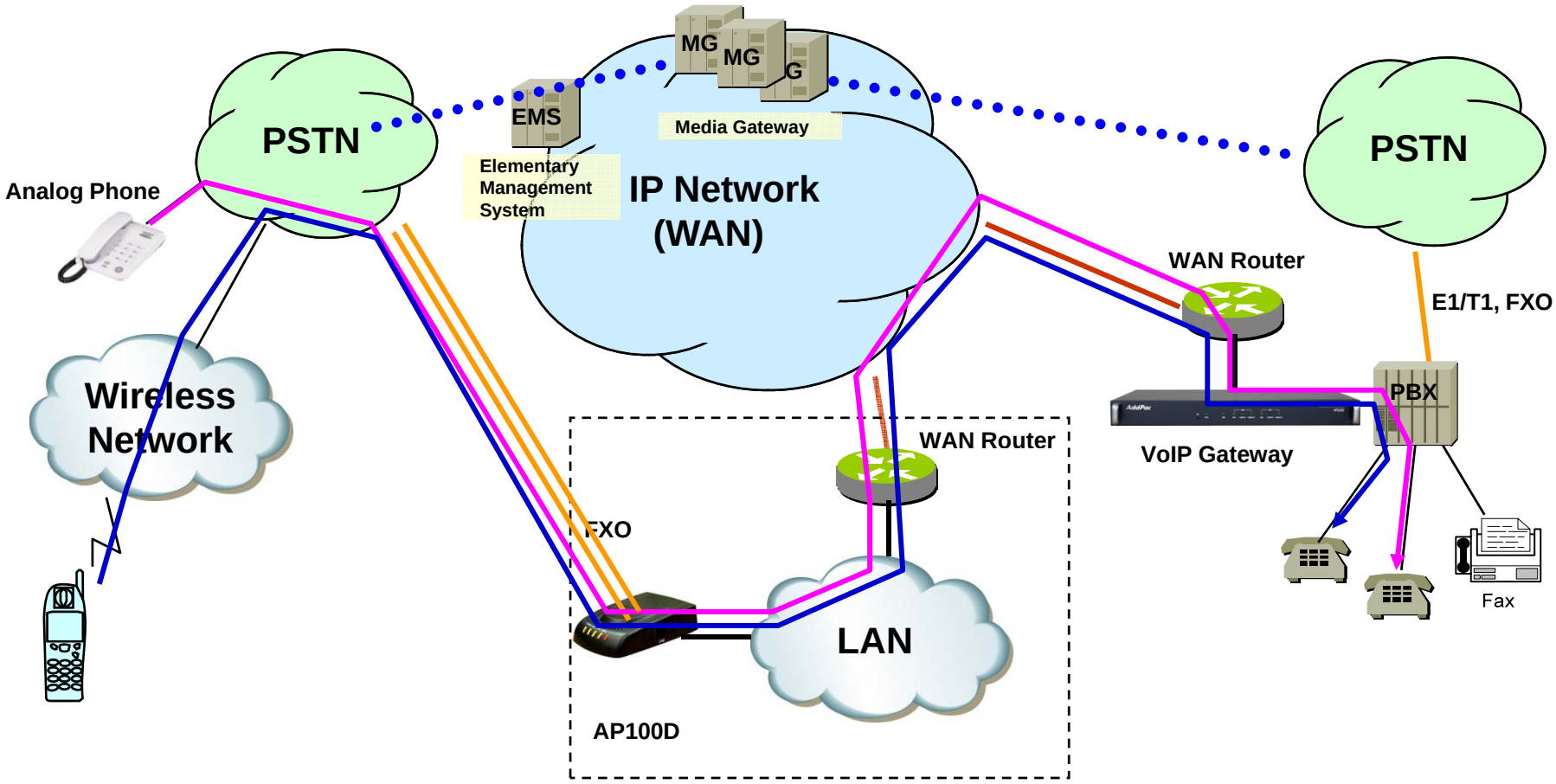
Network interface Configurations





Standard Application

AP100D 2-Port FXO VoIP Gateway



AP100F 1-Port FXO VoIP Gateway

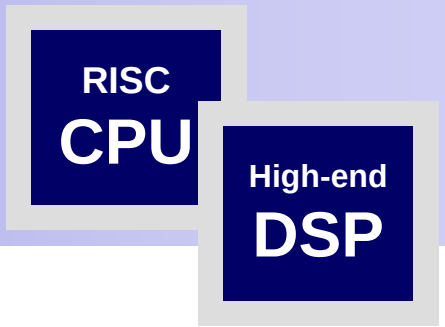
Product Overview

AP100F 1-Port FXO VoIP Gateway

- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- One(1)-Port FXO Analog Interface
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Web based Smart Easy Setup for AP100F
- Smart NMS(Network Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Small, Light and Compact Design
- Power Switch for Stability and Status LEDs

Hardware Specification

AP100F 1-Port FXO VoIP Gateway



- RISC Microprocessor Computing Power
  + High End Programmable DSP
- 1-Port VoIP FXO Port
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- Power Supply
  - External Power Adaptor (5V, 2A)
- Power On/Off Switch
- Power LED, LAN LED, FXO Port LED

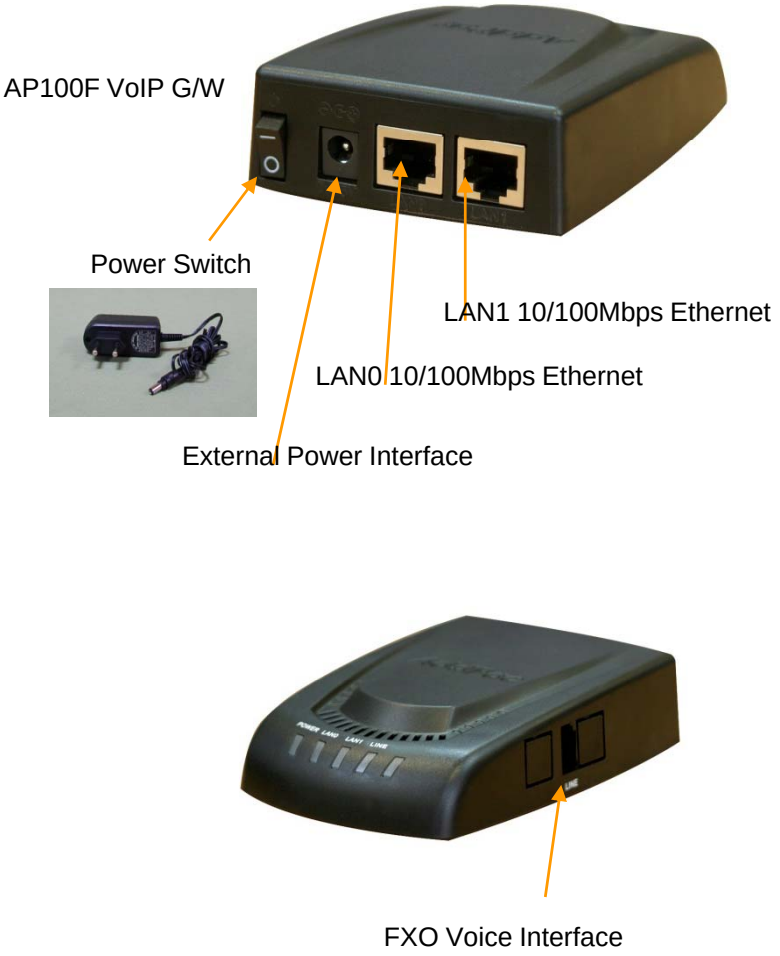
Hardware Specification

AP100F 1-Port FXO VoIP Gateway

Hardware Specifications

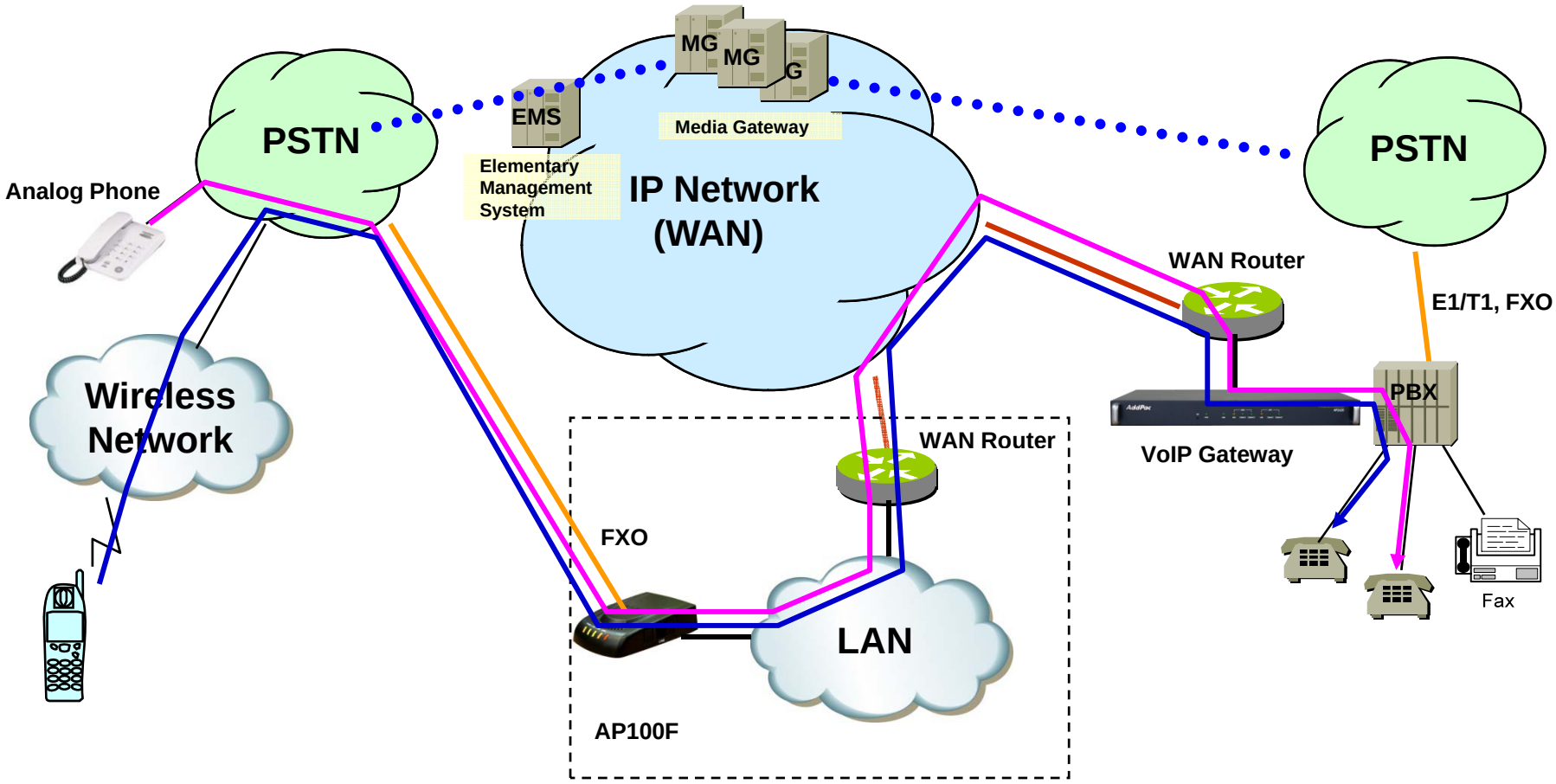
AP100F VoIP Gateway	Basic Specifications
CPU	32Bit RISC Microprocessor
Voice Interface	1-Port FXO Voice Interface(RJ-11)
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	2Mbyte High-speed Flash Memory
Base Memory	16Mbyte High-speed SDRAM
Power Requirement	External Power Supply Adaptor / VAC 110~220V, 50/60Hz, 10Watt
Operating Temperature	0ºC ~ 45ºC (32 ºF ~ 122ºF)
Storage Temperature	-40ºC ~ 85ºC (-40ºC ~ 185ºF)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	28.8mm x 77mm x 111mm (H x W x D)

Network interface Configurations



Standard Application

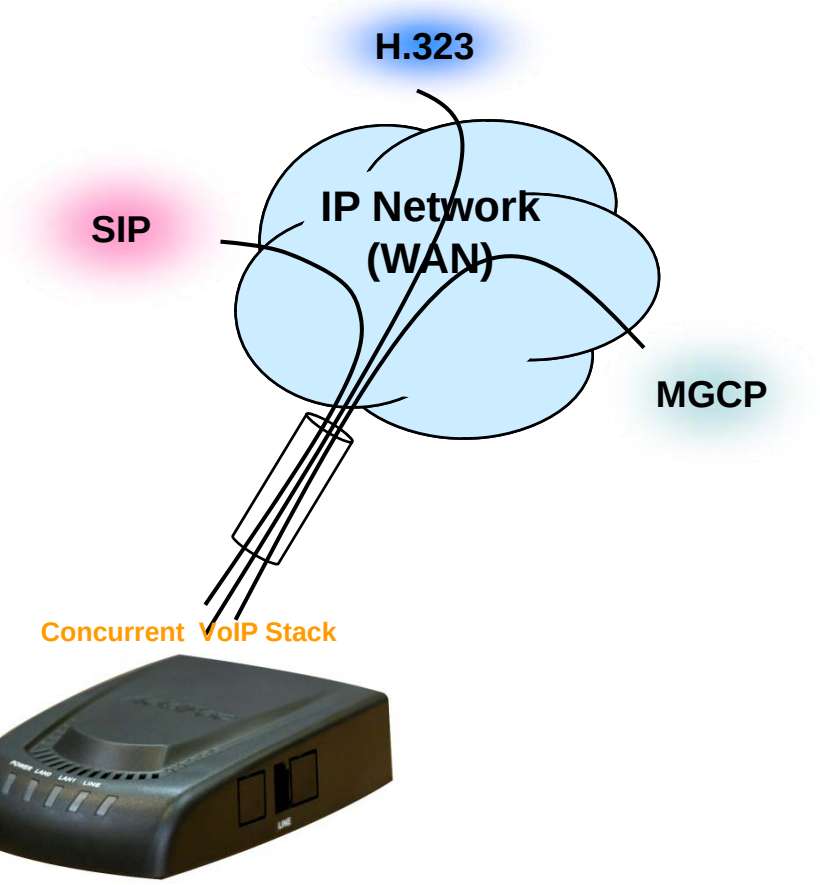
AP100F 1-Port FXO VoIP Gateway

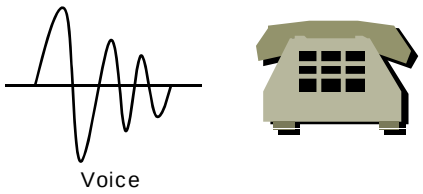


VoIP Gateway
Service Features

VoIP (Voice over IP) Service

- H.323, SIP Concurrent VoIP Stack
- H.323
  - ITU-T Standard H.323 v3 Support
  - Support H.245 Tunneling
  - Including H.235 Security Features
- SIP
  - IETF RFC3261 or RFC2543 SIP Standard



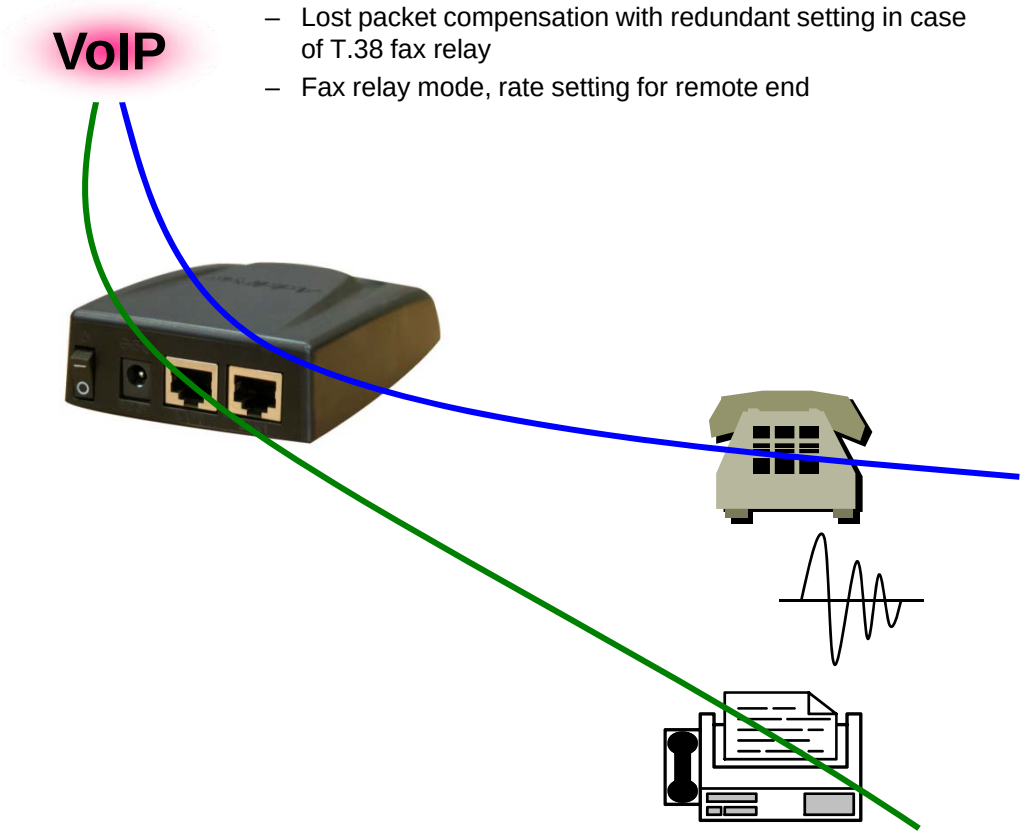


VoIP (Voice over IP) Service

- H.323
  - Fast connect, normal connect support
  - H.245 tunneling support
  - Q.931 response message setting for inbound VoIP calls
  - H.245 logical channel open timing selection function
  - Start H.245 procedure support
  - DTMF / Hook flash relay with H.245 alphanumeric / signal
  - Secondary gatekeeper support
  - Gatekeeper assignment according to the domain name
  - Gatekeeper discovery with multicast
  - Lightweight RRQ support
  - Signaling TCP port assignment
  - Resource threshold setting with RAI
  - H.235 clear-token, crypto-token support
  - canMapAlias support
  - Technical prefix (supported prefix) support
  - Public IP assignment in NAT environment
- SIP
  - Gateway-based / Endpoint-based registration support
  - Secondary proxy-server assignment function
  - SIP signaling port change function
  - SIP proxy server assignment according to the domain name
  - T.38 real-time fax relay support
  - DTMF relay support with RFC2833 / OPTION message
  - Re-INVITE support

VoIP (Voice over IP) Service

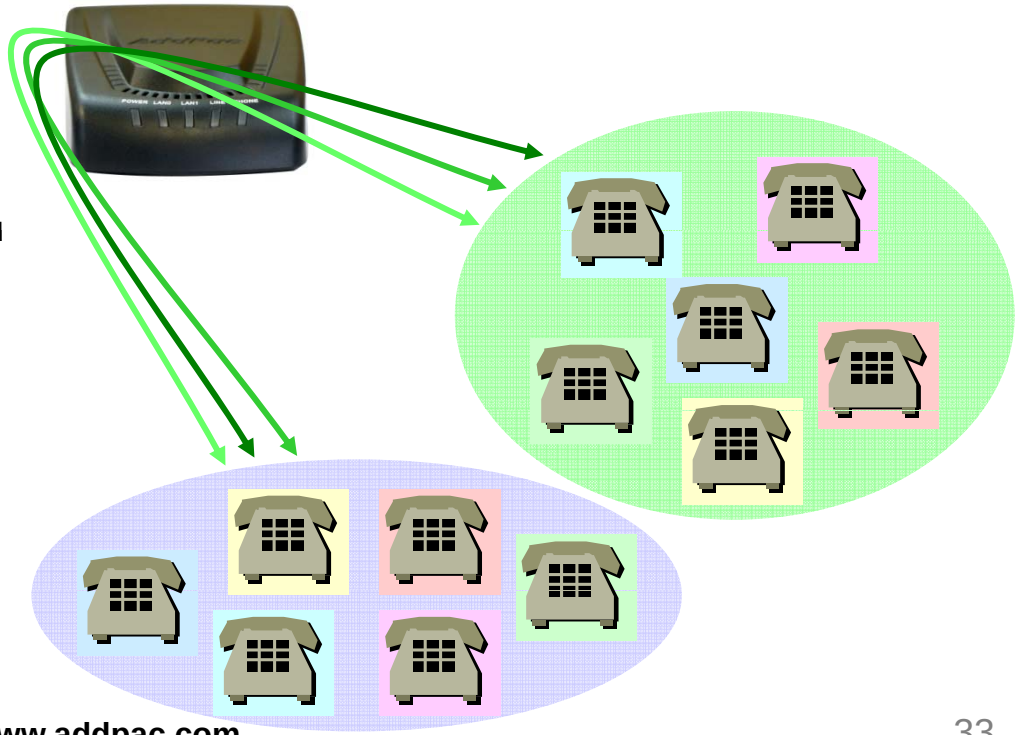
- Voice Codec
  - G.711 A-Law, G.711 U-Law
  - G.726 r16, G.726 r32
  - G.729A
  - G.723.1 r63, G.723.1 r53
  - VAD (Voice Activity Detection) function support
  - DTMF relay support (H.323, SIP, MGCP common) based on RFC2833
- RTP
  - Redundant RTP packet transmission in case of severe packet loss
  - Dynamic jitter buffer management and RPT packet jitter and loss compensation with heuristic & DSP error concealment
  - Static jitter buffer setting support
  - Voice frame per RTP packet number control for each codec
  - In-band ring-back tone support
  - Virtual ring-back tone support
  - Tone parameter change support
- FAX
  - Fax relay mode supporting T.38, inband-T.38, bypass mode
  - Lost packet compensation with redundant setting in case of T.38 fax relay
  - Fax relay mode, rate setting for remote end



VoIP (Voice over IP) Service

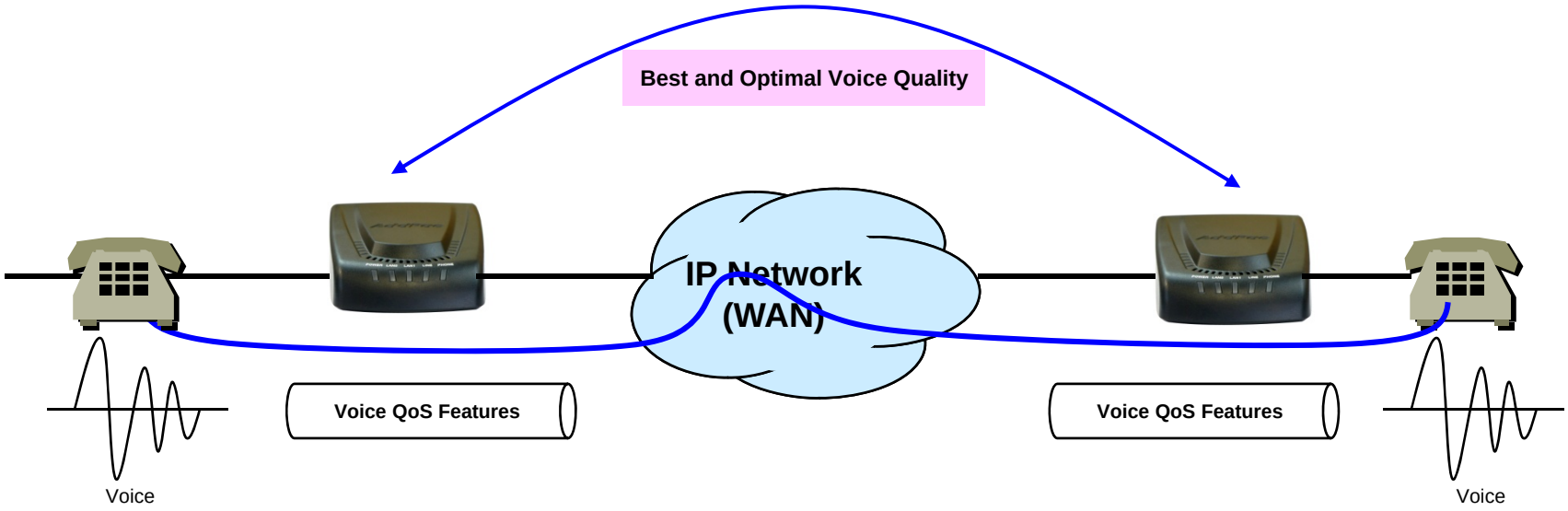
- VoIP Call Controls
  - Hot line connection function with PLAR (Private Line Auto Ring Down)
  - Leased line emulation function
  - Connection monitoring function
  - Fault tolerant with Redundancy and Call Distribution among Gateways for load balancing
  - Call attempt with IP address
  - H.323, SIP inbound call connection for each voice port
  - Multiple E.164 setting for one voice port
  - One E.164 or digit pattern can be assigned to more than one voice port
  - Hunting with Longest match/ priority/ sequence/ random
  - One stage call setup by Digit forwarding
  - Call barring with specific digit patterns
  - Calling and called number conversion for PSTN outbound calls
  - PSTN rerouting in case of VoIP call attempt failure

- VoIP Call Controls (cont.)
  - Call transfer for internal calls
  - Call pickup for internal calls
  - Calling and called number conversion for VoIP outbound calls
  - Calling and called number conversion for VoIP inbound calls
  - Fax broadcasting call control



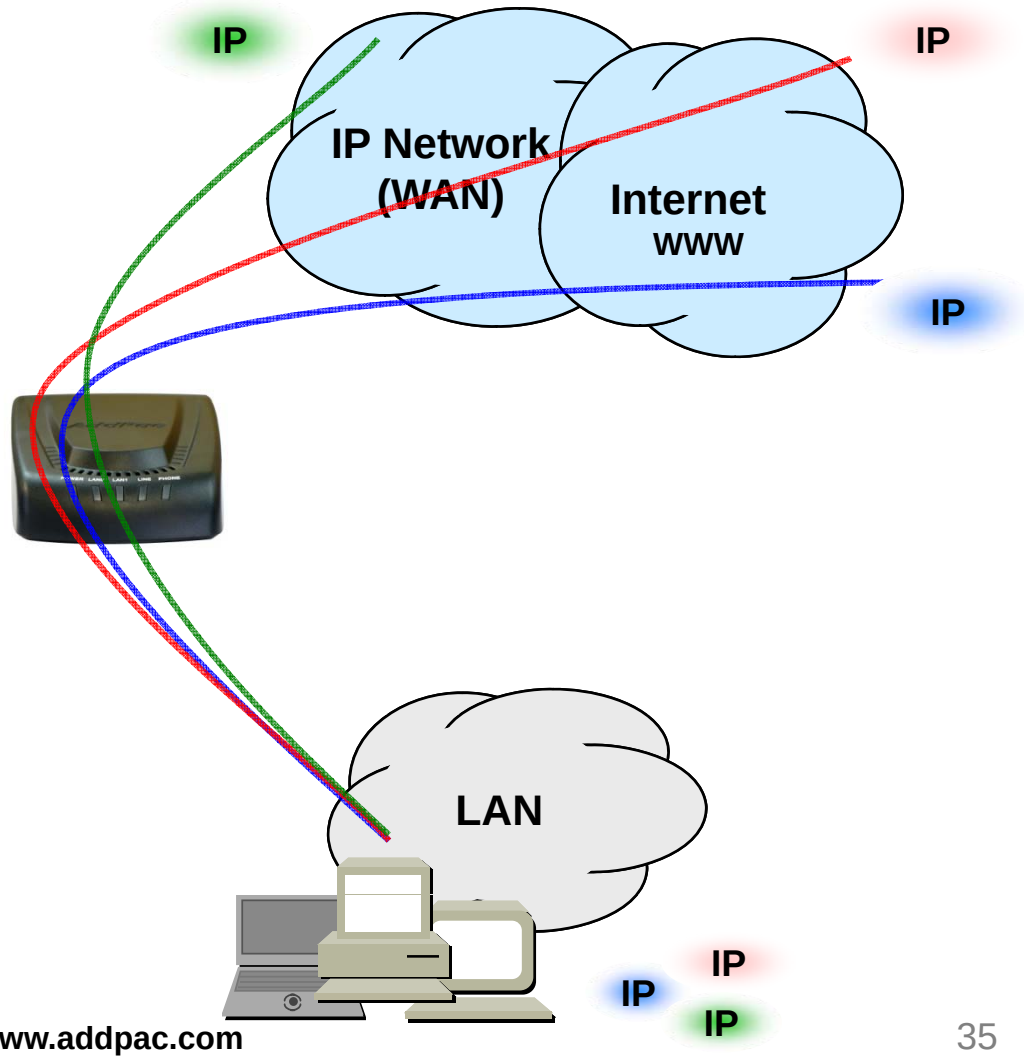
Advanced QoS Features

- Enhances Transmit Voice QoS Features
  - Voice Traffic Priority Queuing
  - QoS Service Profiling
  - Providing Virtual Network Transmit Algorithm
  - Real-time Voice Traffic QoS Support
  - RTP Packet Transmit Interval Control
  - Supporting RTP Packet Redundancy Scheme
  - IP Header Control such as ToS, Diffserv
- Enhances Receive Voice QoS Features
  - Dynamic Jitter Buffer Management
  - Error Concealment
  - Support T.38 FAX Data Error Recovery Scheme



Network Protocols

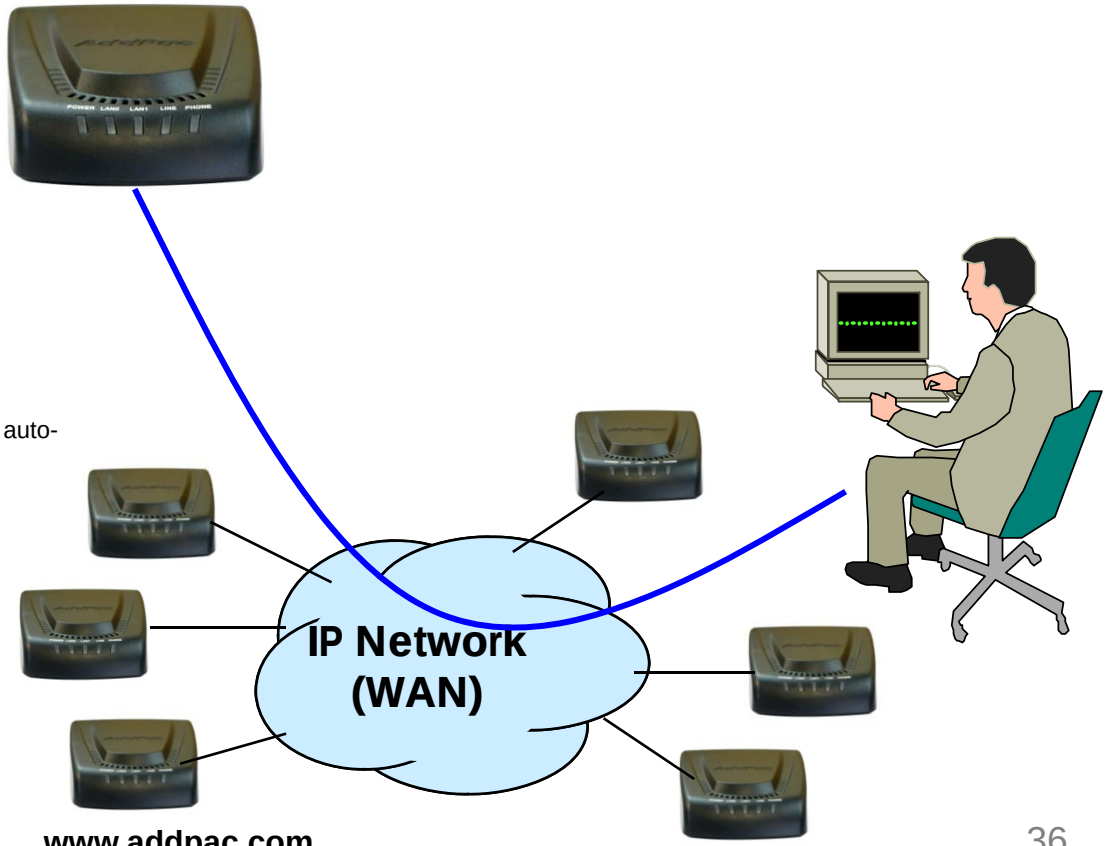
- Basic Network Protocols
  - ARP, IPv4, TCP, UDP, ICMP, SCTP, IGMP, MLD
- Routing Protocol
  - IPv4 : Static
- Service Protocol
  - FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
  - CDP (Cisco Discovery Protocol)
  - DNS Resolver , DDNS(nsupdate)
  - Bridge
  - Syslog
- IPv4 Address Configuration
  - Fixed (Static)
  - DHCP
  - PPPoE
- Miscellaneous
  - Cisco Style CLI
  - Standard & Extended IPv4 Access List
  - Multi-level User Account Management
  - IP accounting
  - STUN Client



Network Management

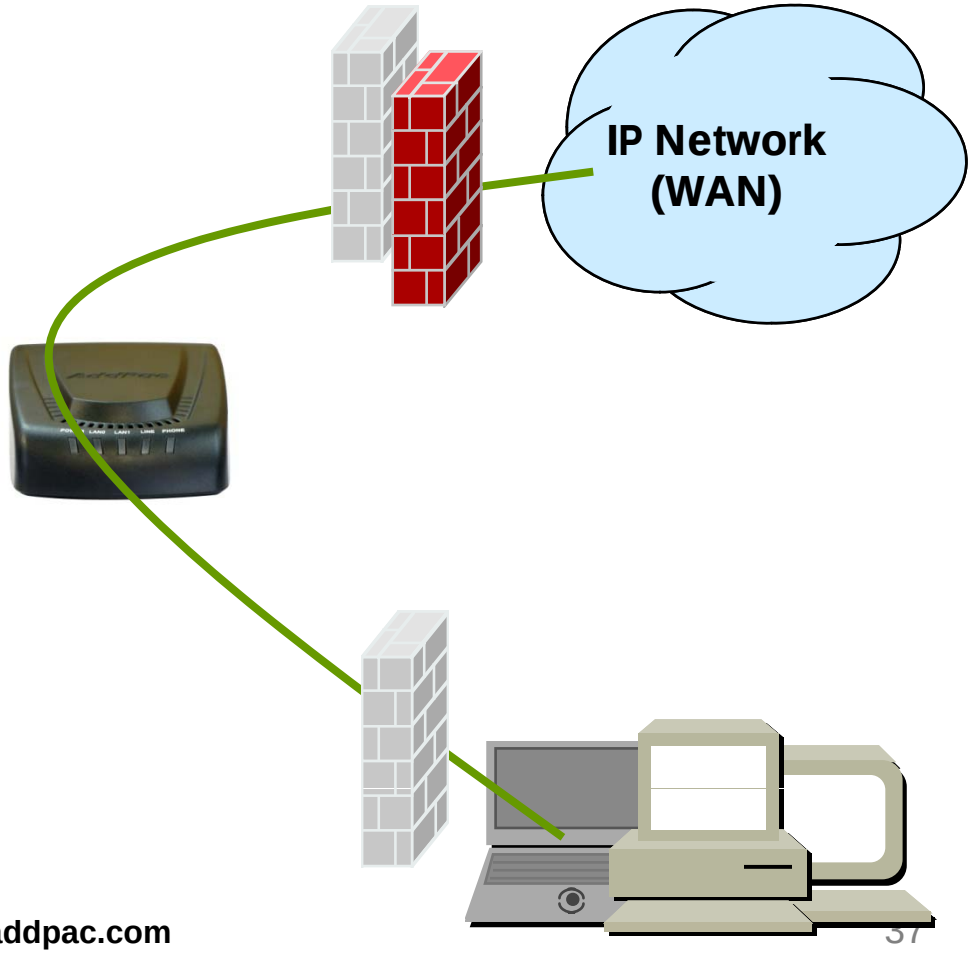
- SNMP
  - Standard Simple Network Management Protocol(SNMP) Agent support
  - MIB v1 and v2 Support
- Web-based Management
  - Smart Easy Setup
  - Standard Voice Interface
  - Standard PSTN Back-up Interface
- Watch-dog Function
  - Hardware, Software watch-dog services
- Remote Management
  - Telnet
  - Rlogin
- Auto Upgrade Service
  - HTTP server based APOS image and configuration file auto-upgrade support
- Batch Job Function
  - Text based script downloading

- Interoperable with AP-VPMS Service
  - AddPac VoIP Plug & Play Management System (AP-VPMS)



Security Management

- IP packet filtering
- IP access list
- User authentication function
  - Password Authentication Protocol (PAP)
  - Challenge Handshake Authentication Protocol (CHAP)
- Enable/Disable specific protocols
- Auto-square connect of Telnet session
- Account Management function for multi-level user
- SNMP/TELNET/FTP/HTTP/TFTP port assignment function
- SNMP/TELNET/FTP access list management
- Boot mode security checking function



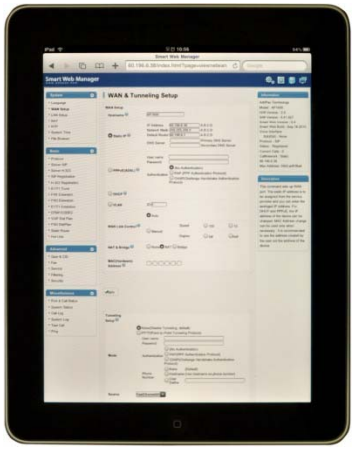
Smart Web Manager for VoIP Gateway Series

AddPac Technology

2015, Sales and Marketing

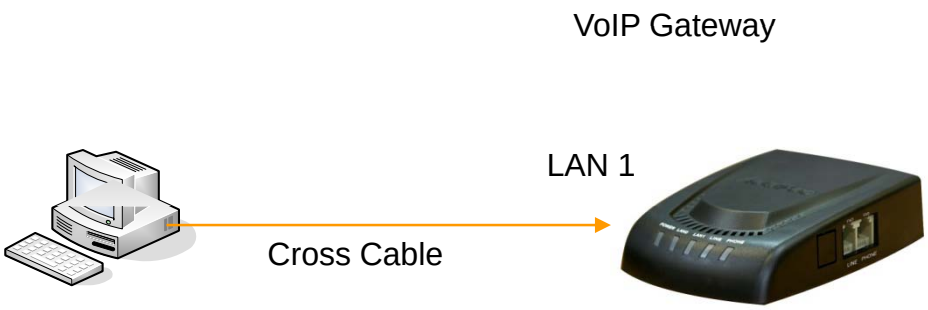
Contents

- Web Connection
- Main Page Layout
- System Configuration
  - Language, WAN Setup, LAN Setup, NAT, NTP, System Time, File Browser
- Basic Configuration
  - Protocol : SIP Server , H.323 Server
  - Analog Port : FXS Extension, FXO Extension, FXO Dial Plan, Hot Line
  - Digital Port : E1/T1 Trunk, E1/T1 Extension
  - VoIP : DTMF/CODEC, VoIP Dial Plan, Static Route
- Advanced Configuration
  - Gain/CID, FAX, Service, Filtering, Security
- Miscellaneous Configuration
  - Port & Call Status, System Status
  - Call Log, System Log, Test Call, Ping



Web Connection

Web Connection via LAN 1 Port



LAN 1 Default IP address
IP Address : 192.168.10.1
Subnet mask : 255.255.255.0

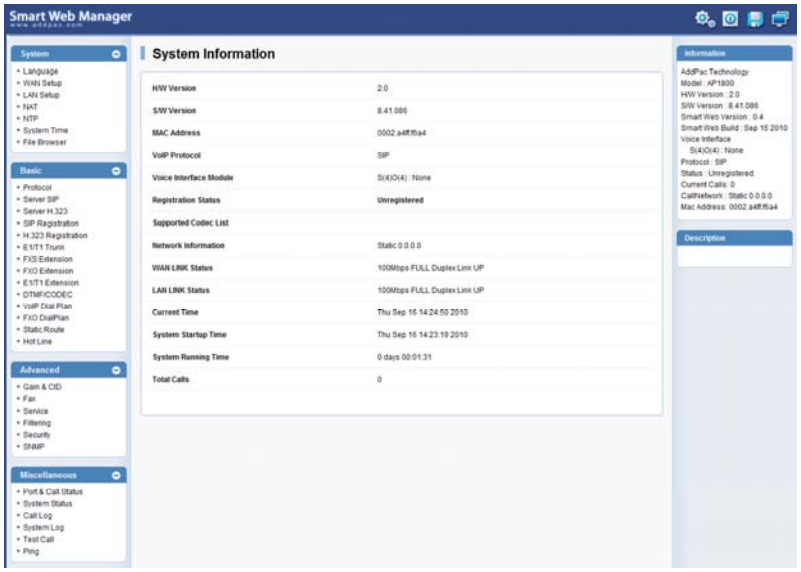
1. It is the way to connect to VoIP Gateway via LAN 1 port
2. The factory default of LAN 1 port
   - IP Address : 192.168.10.1
   - Subnet mask : 255.255.255.0
3. After set PC with same IP address subnet, connect to VoIP Gateway
   - Connect PC to VoIP Gateway using Cross UTP-Cable. You may use Ethernet switch with normal UTP-cable
   - Enter IP address 192.168.10.1 on your web browser

WEB Connection

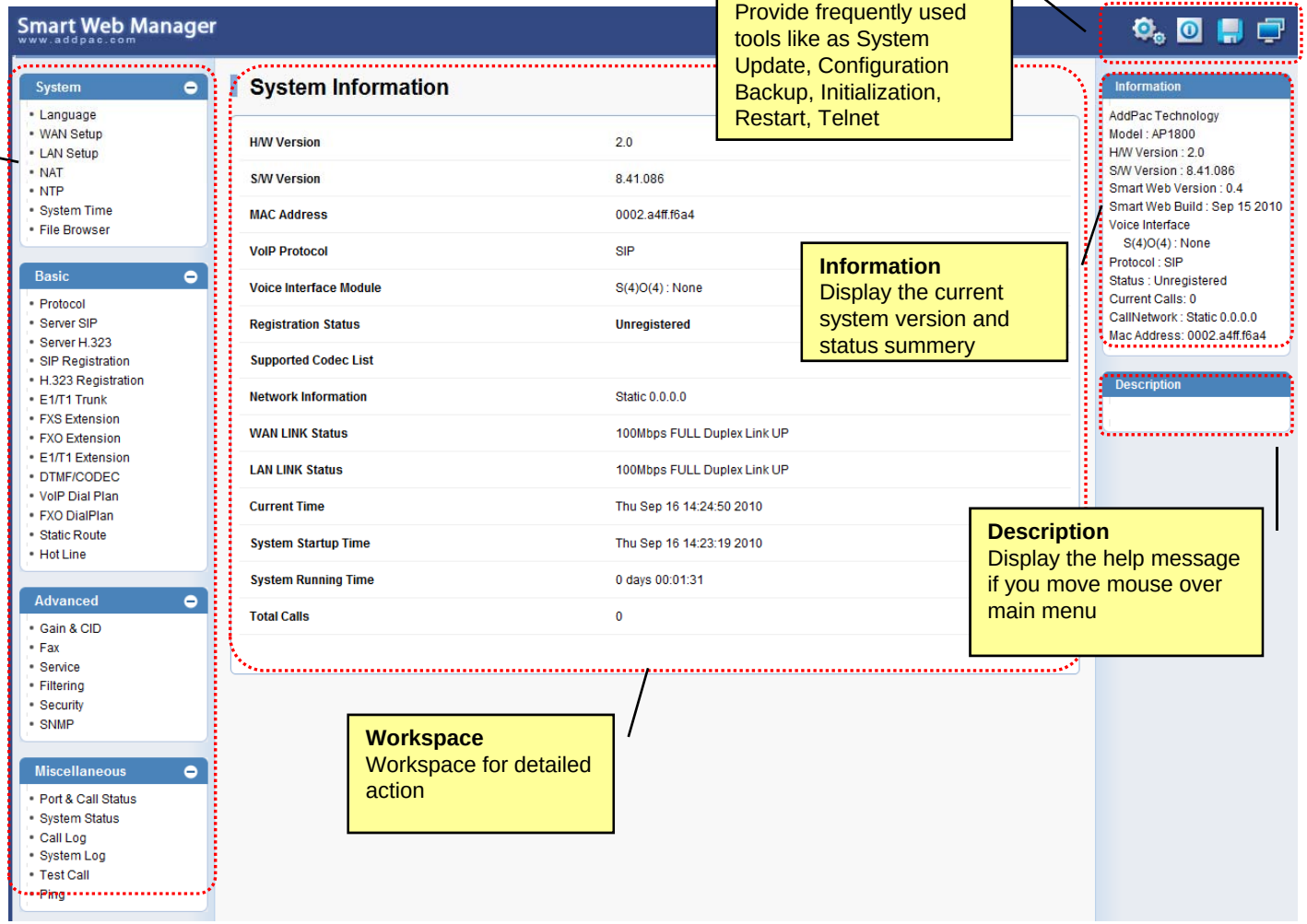
Connect to VoIP Gateway

Please enter the below log-in information to access Smart Web Manager

ID : root
Password : router



Main Page Layout



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

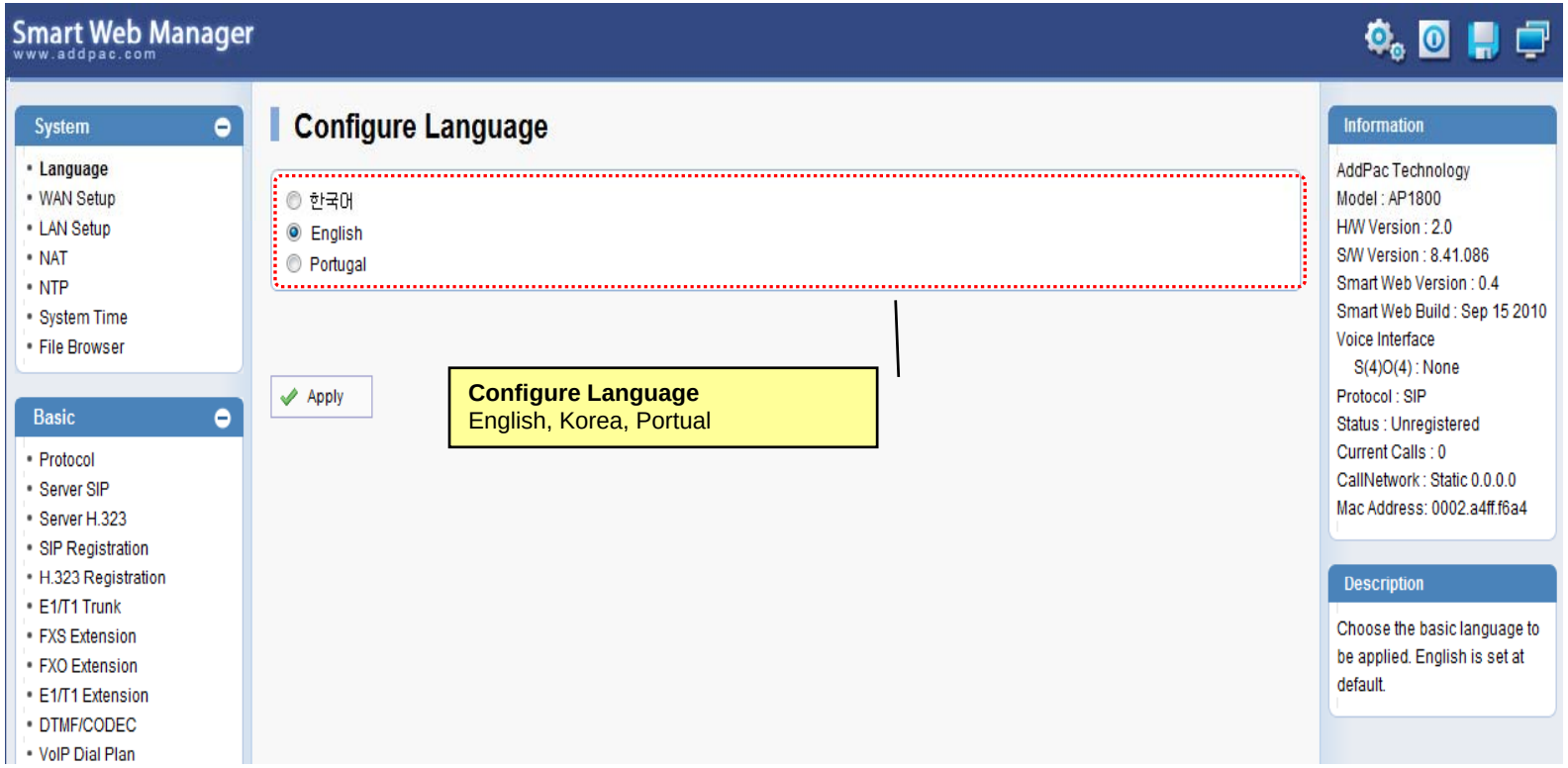
Tool Bar
Provide frequently used tools like as System Update, Configuration Backup, Initialization, Restart, Telnet

Information
Display the current system version and status summery

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

Workspace
Workspace for detailed action

System - Language



System – WAN 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

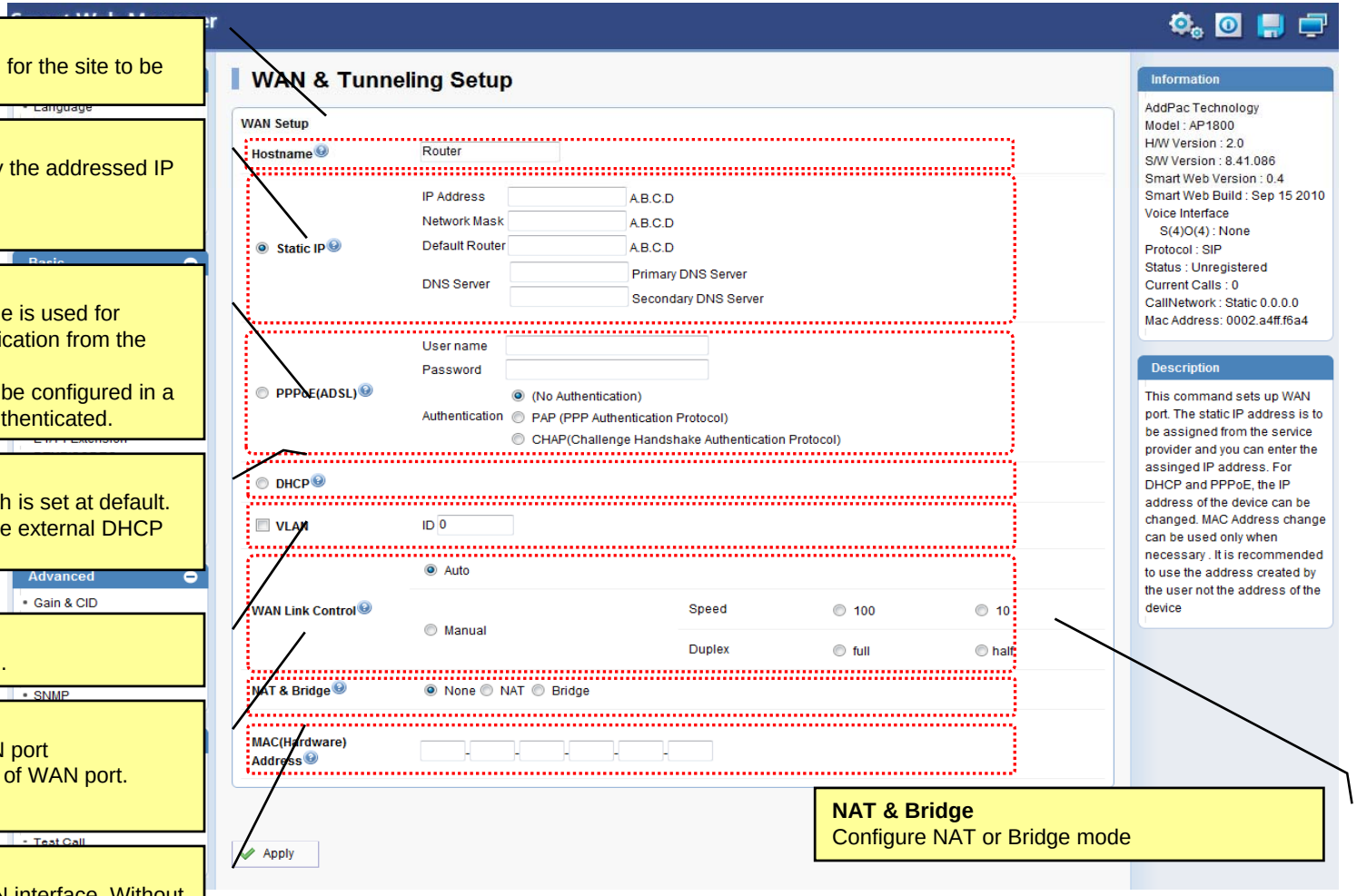
PPPoE
This is ADSL mode. This mode is used for addressing IP though authentication from the modem.
At this time, the modem must be configured in a way that the device can be authenticated.

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.



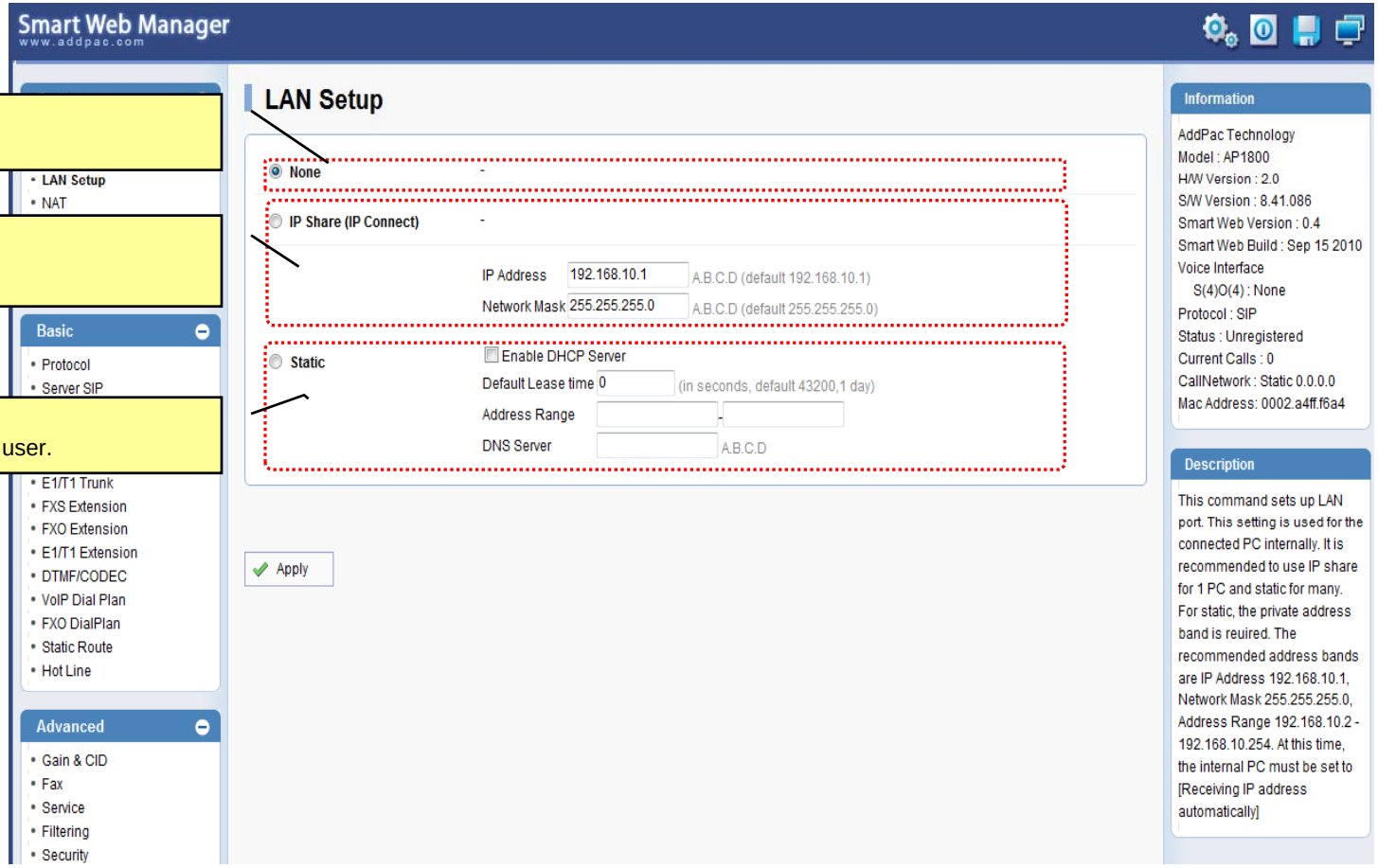
NAT & Bridge
Configure NAT or Bridge mode

System – LAN Setup

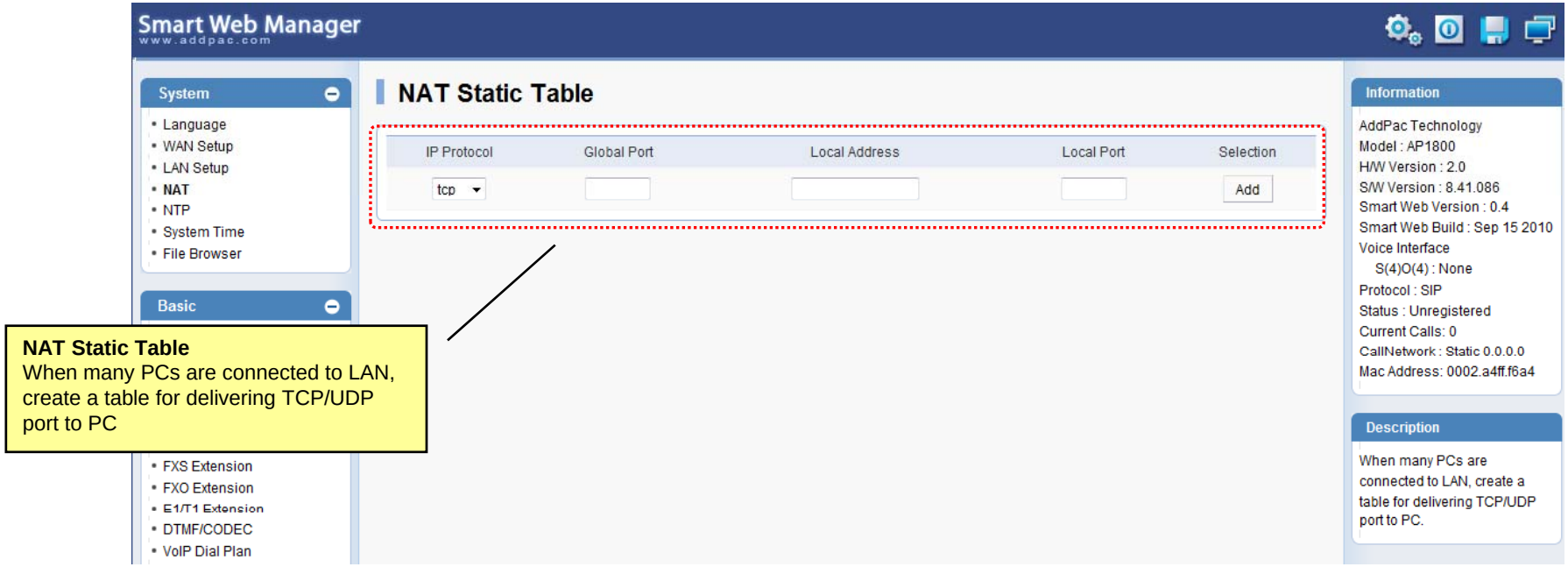
None
It is configured by default IP.

IP Share
This is sharing of LAN0.

Static
This is configured directly by user.

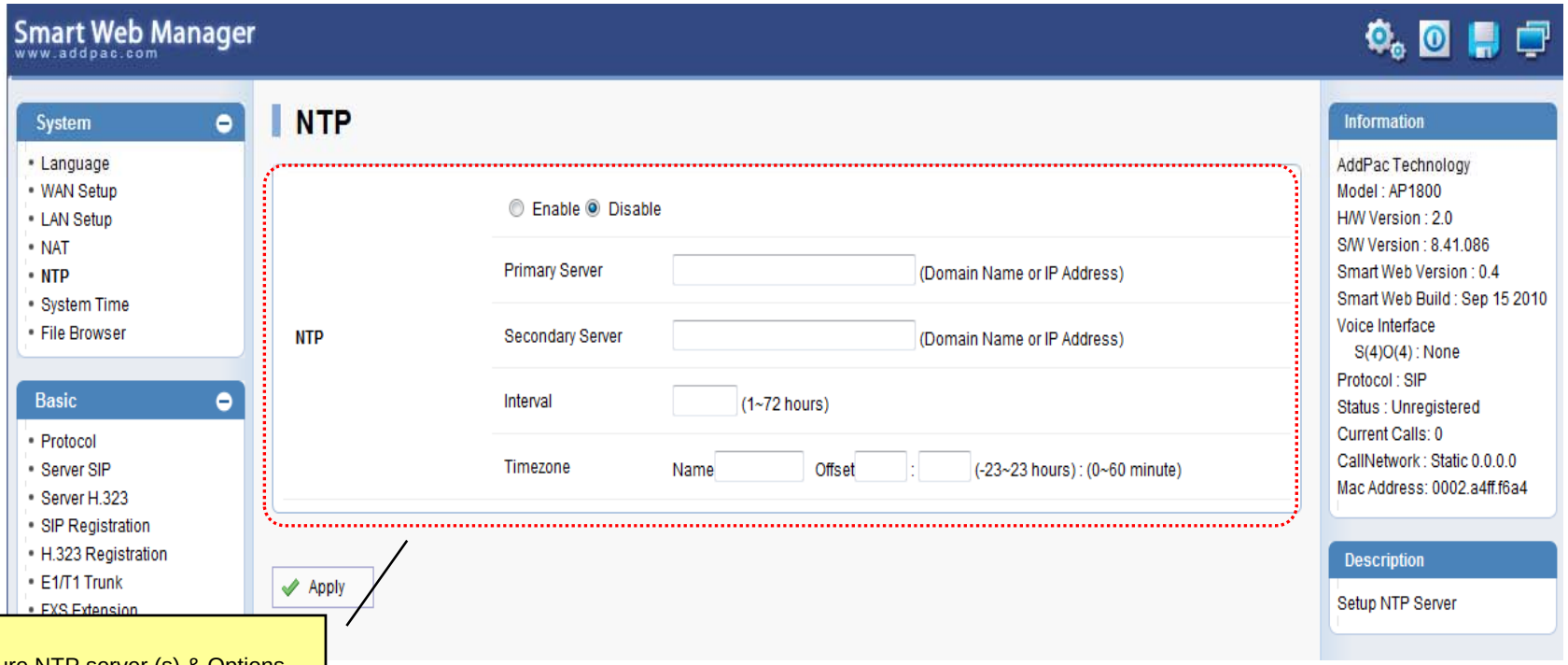


System - NAT



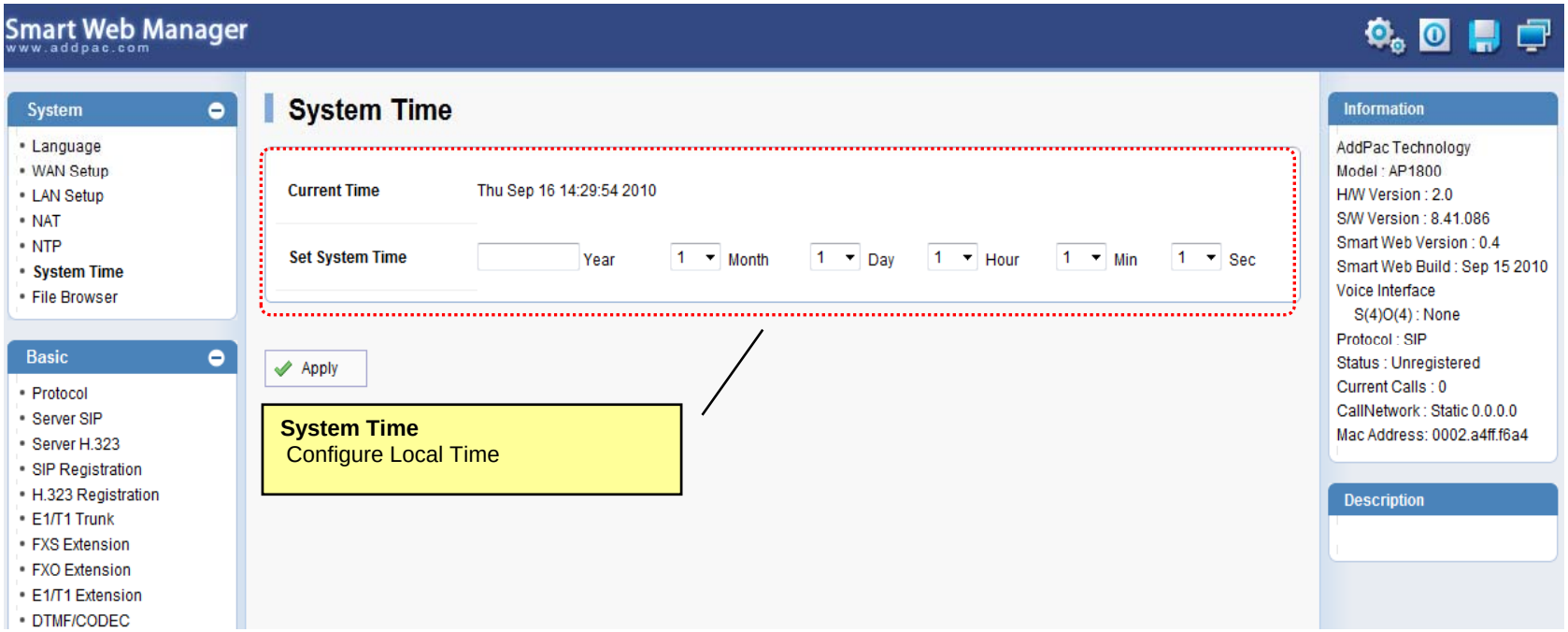
NAT Static Table
When many PCs are connected to LAN, create a table for delivering TCP/UDP port to PC

System - NTP



NTP
Configure NTP server (s) & Options

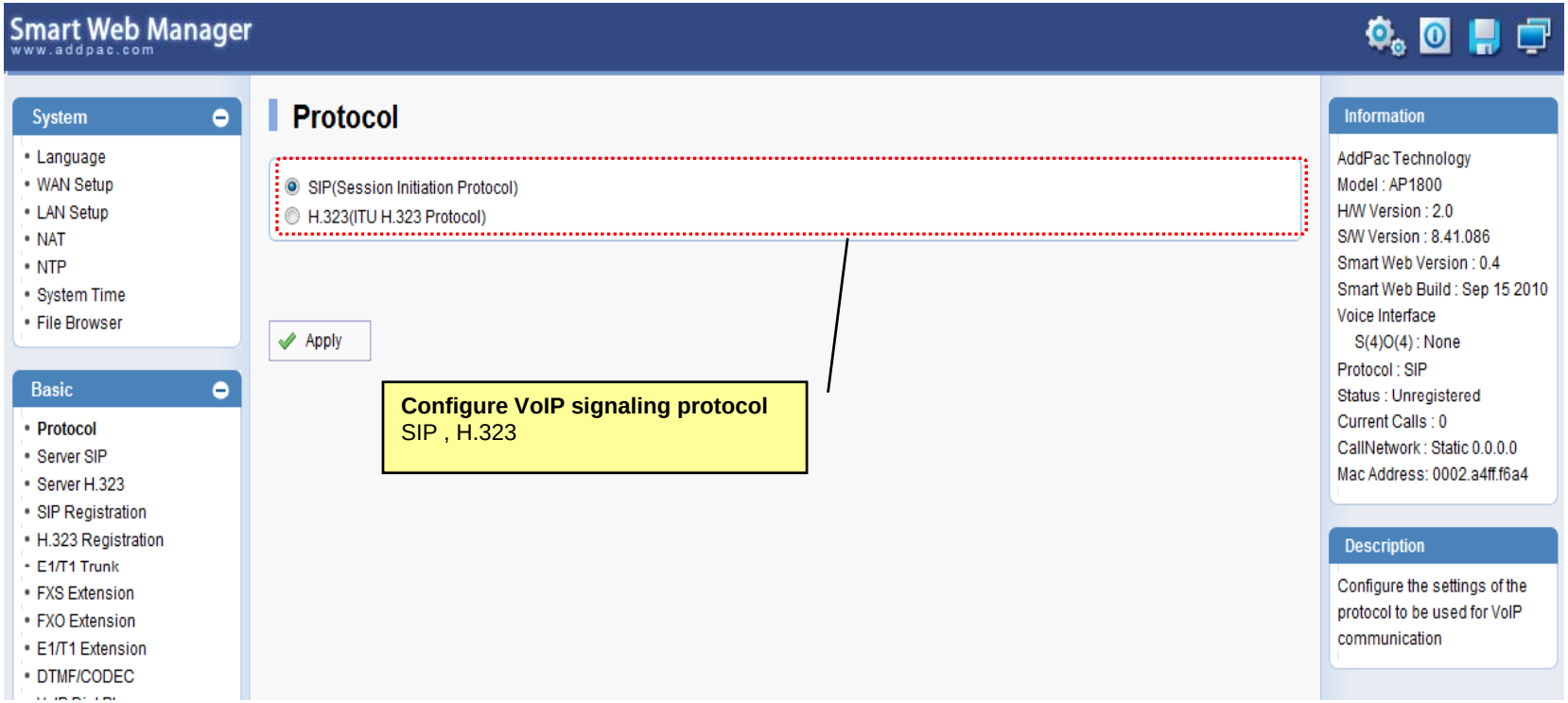
System – System Time



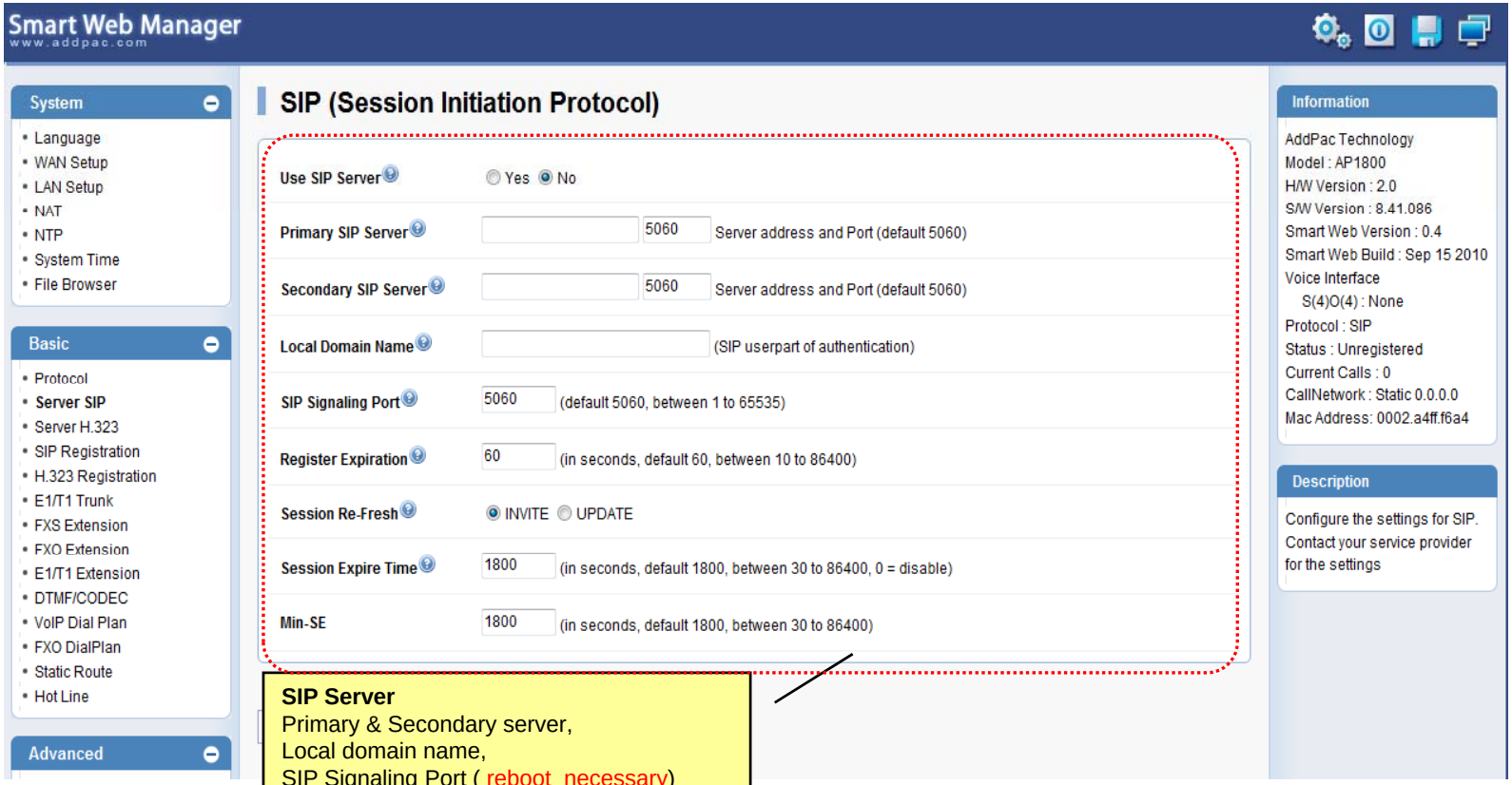
System – File Browser

File Browser
Download and Upload Gateway's firmware or configuration file.

Basic - Protocol

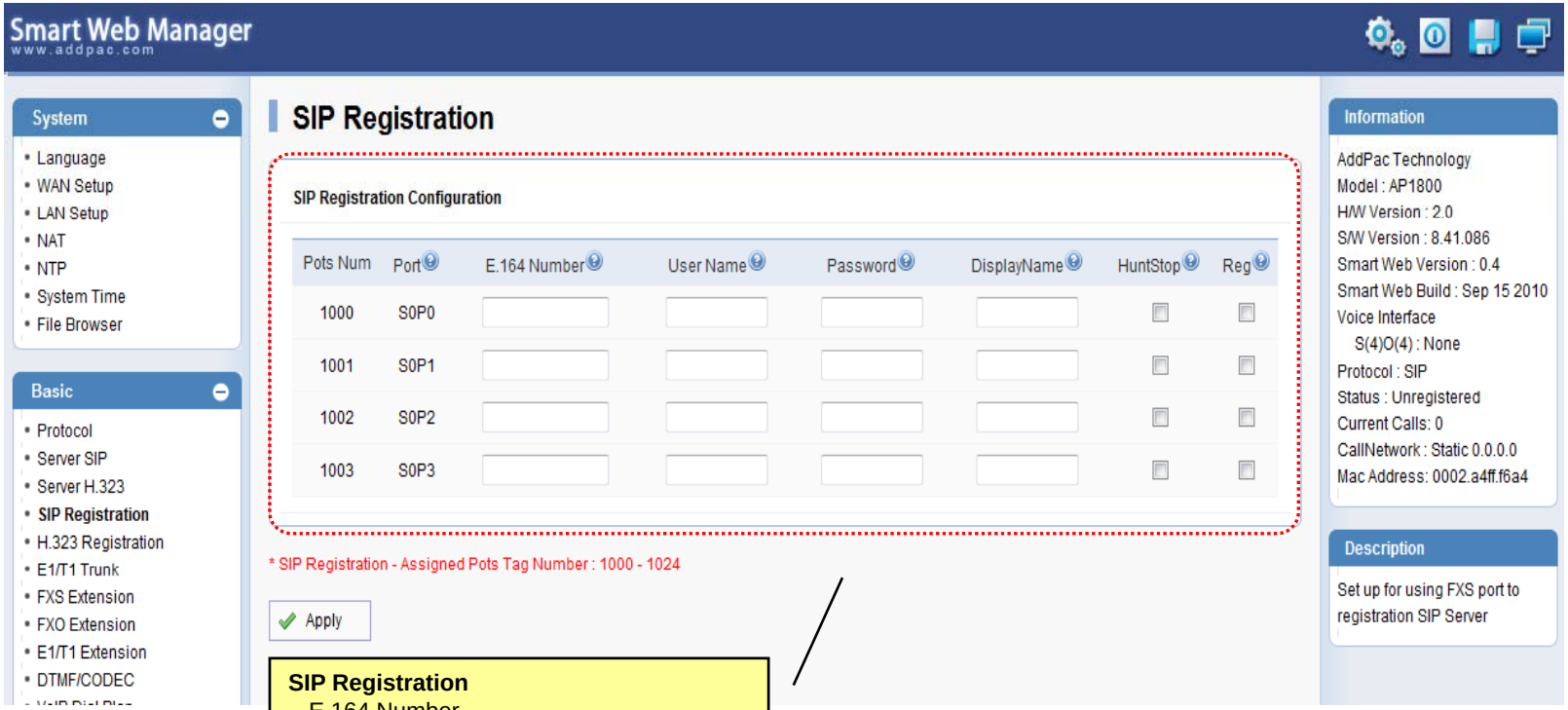


Basic – SIP Server



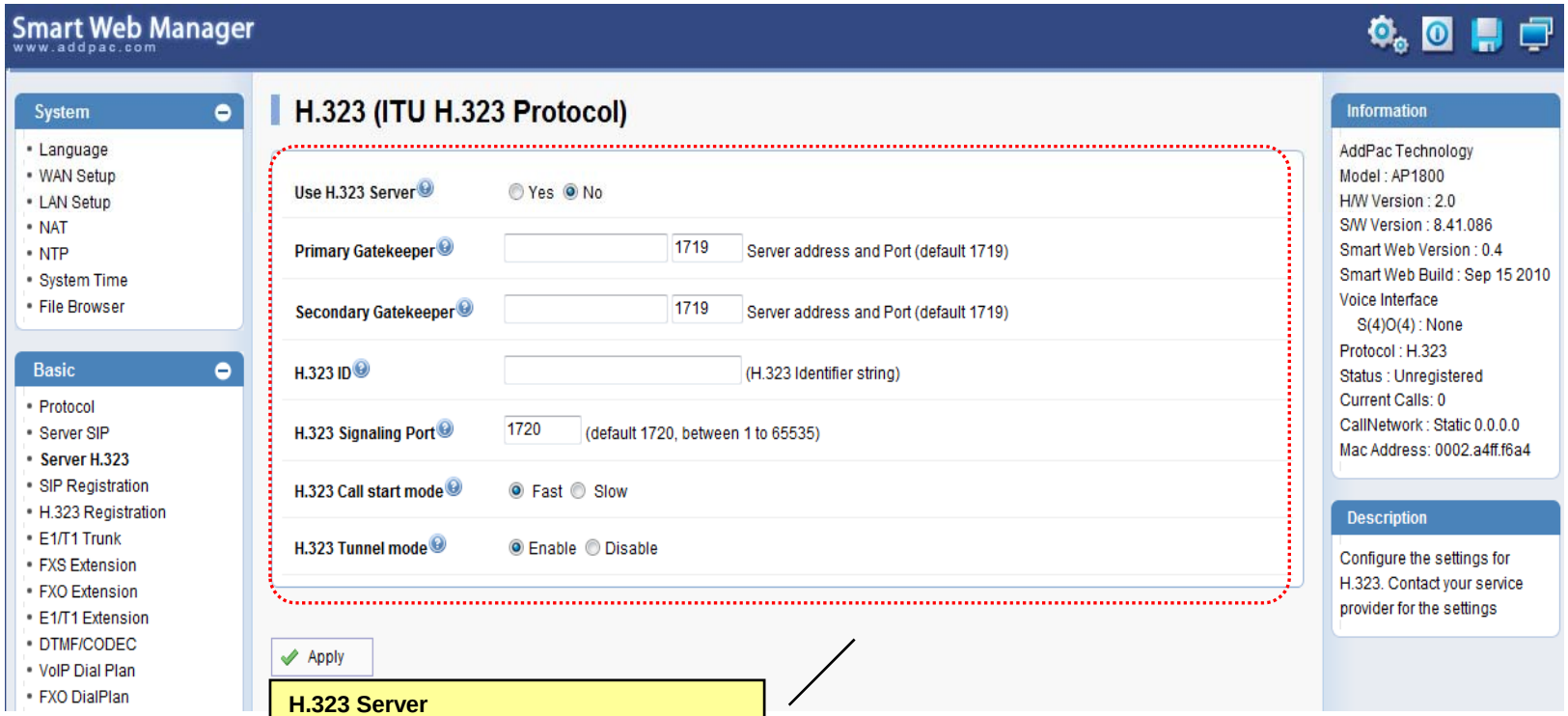
SIP Server
Primary & Secondary server,
Local domain name,
SIP Signaling Port (reboot necessary)
Timer
* register expire
* session refresh
* session expire

Basic – SIP Registration



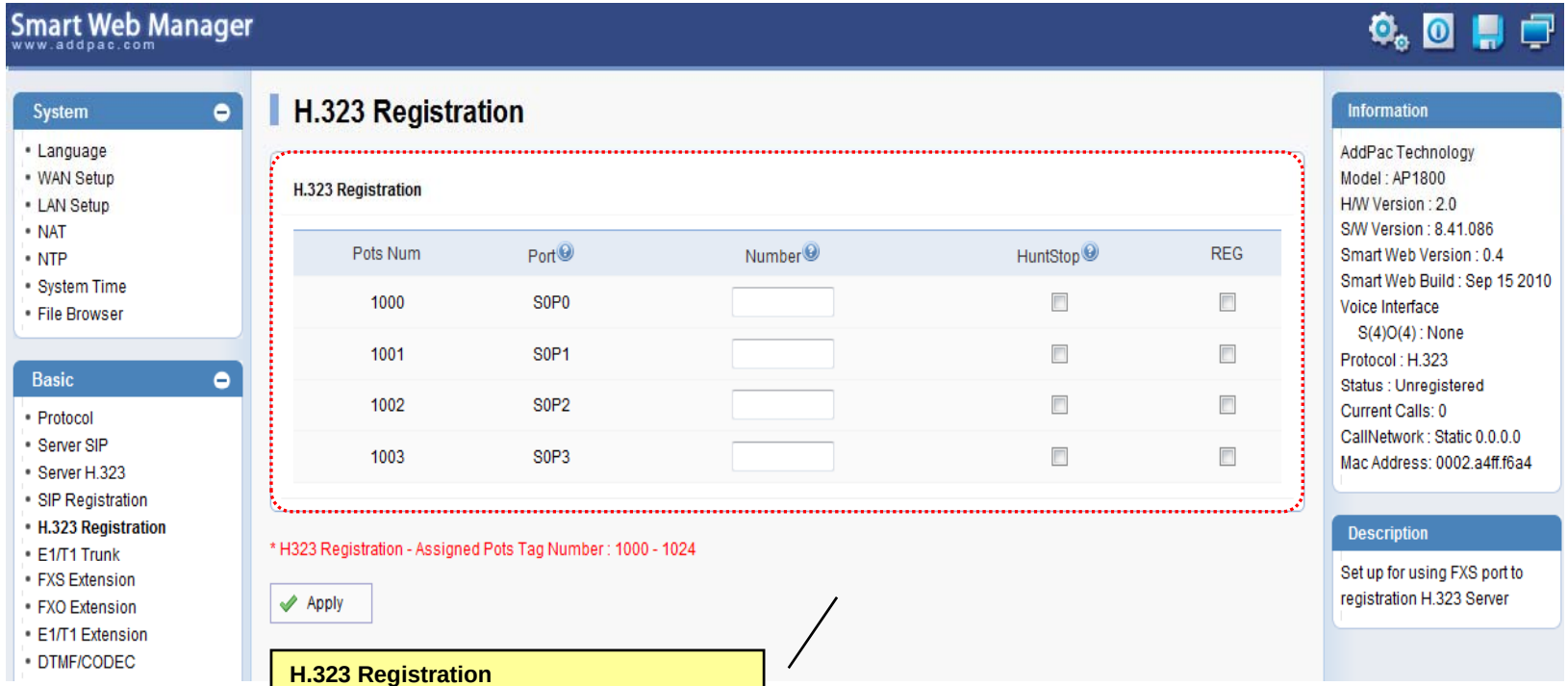
SIP Registration
- E.164 Number
- User Name
- Password
- Display Name
- Hunt Stop
- Registration checking

Basic – H.323 Server



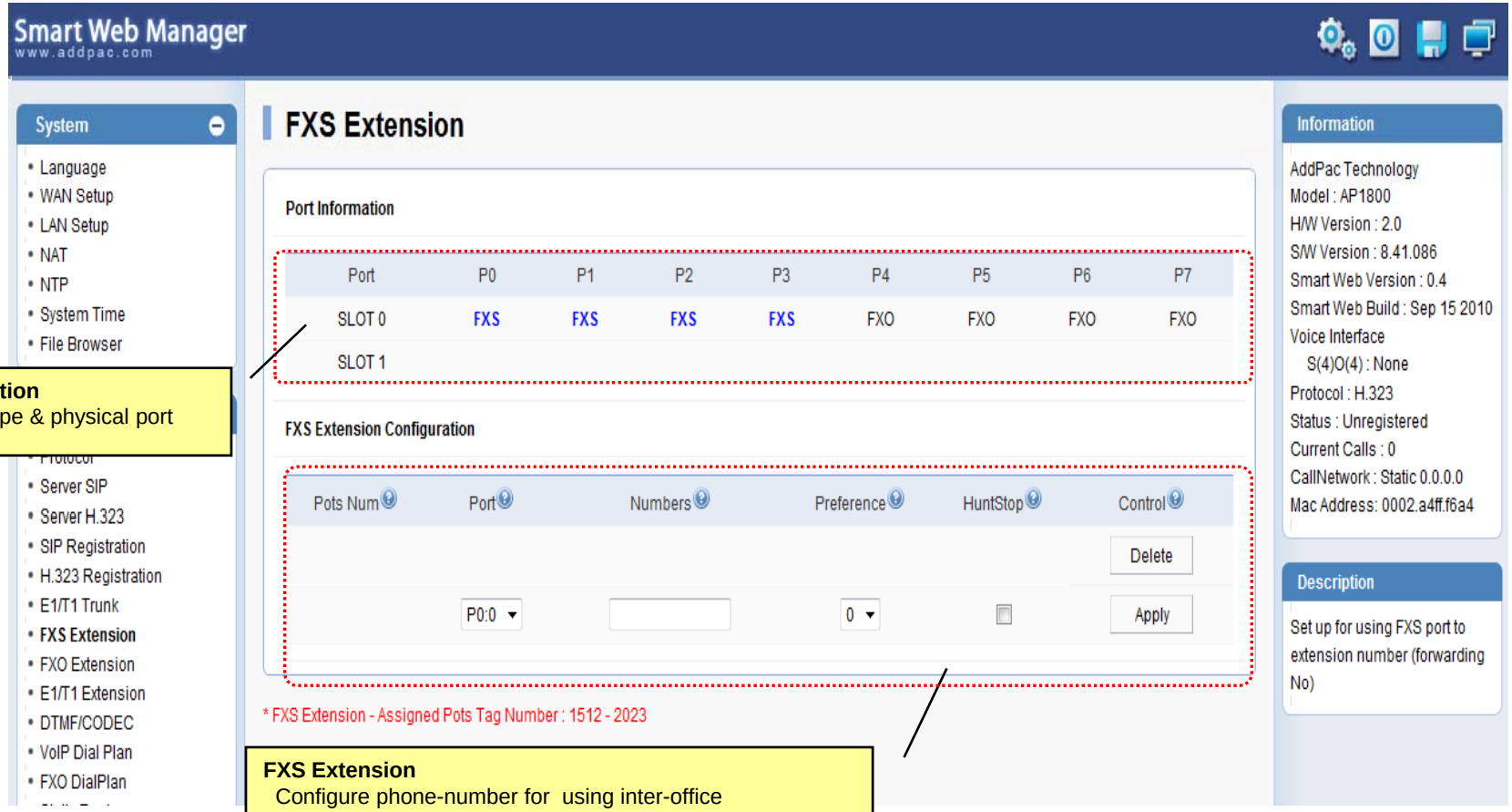
H.323 Server
Primary & Secondary server,
H.323 ID
SIP Signaling Port (reboot necessary)
H.323 Call start mode
H.323 Tunnel mode

Basic – H.323 Registration



H.323 Registration
- Number
- Hunt Stop
- Registration checking

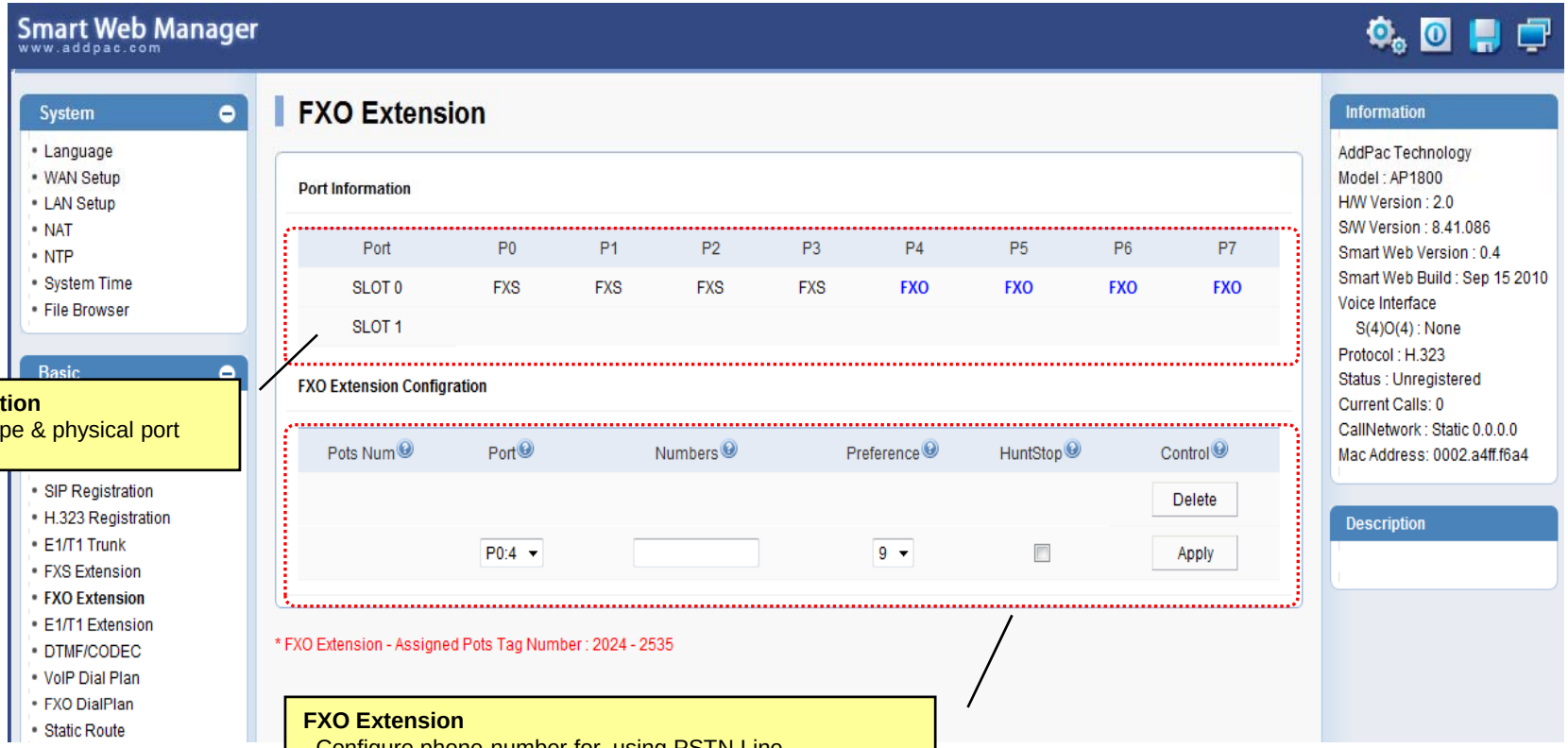
Basic – Analog : FXS Extension



Port Information
voice port type & physical port

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

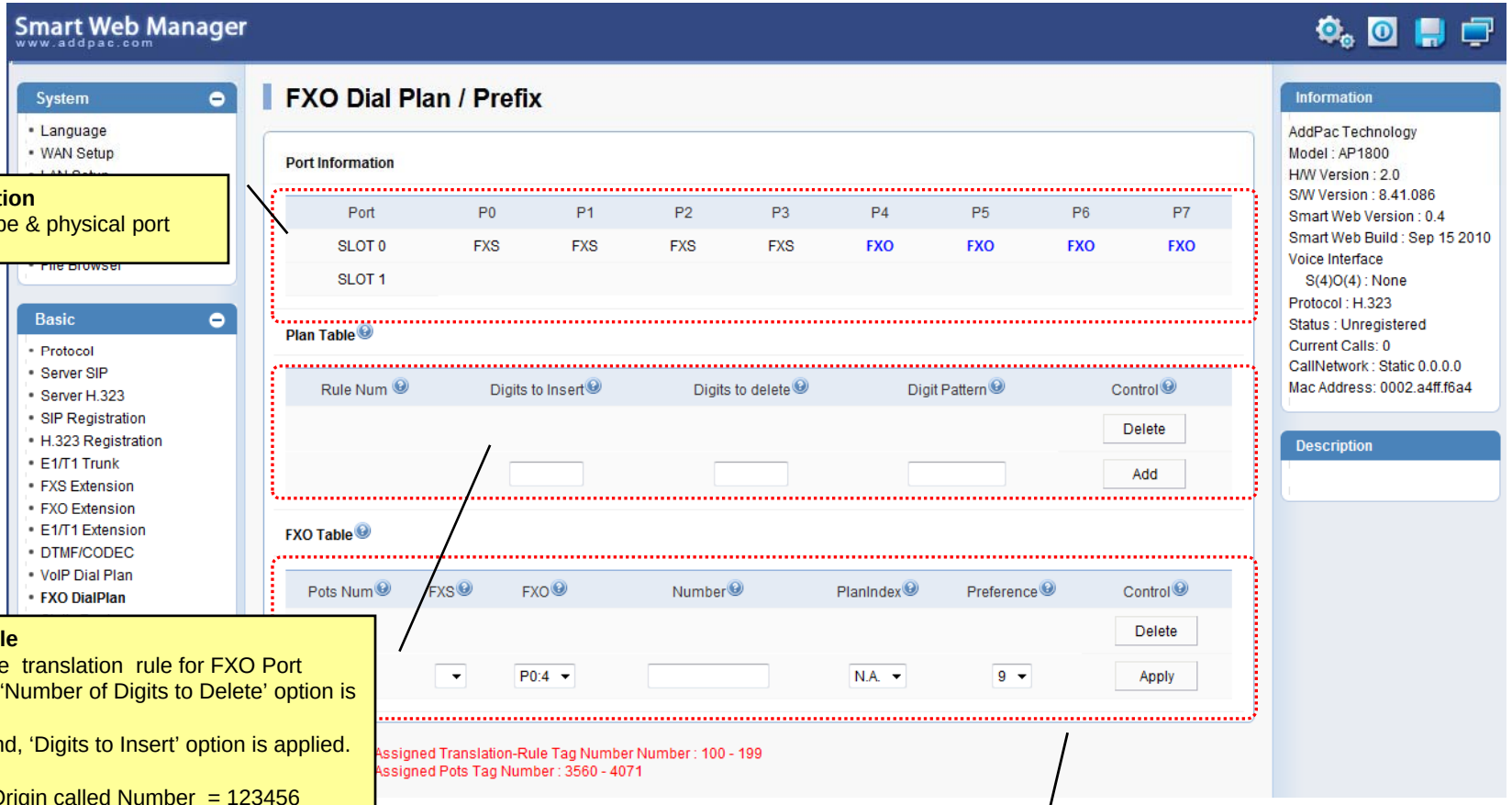
Basic – Analog : FXO Extension



Port Information
voice port type & physical port

FXO Extension
Configure phone-number for using PSTN Line
Preference (0 : highest)

Basic – Analog : FX0 Dial Plan



Port Information
voice port type & physical port

Plan Table
Configure translation rule for FXO Port
- 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

FXO Table
Configure FXO Port with translation rule.

Basic – Digital : E1/ T1 Trunk

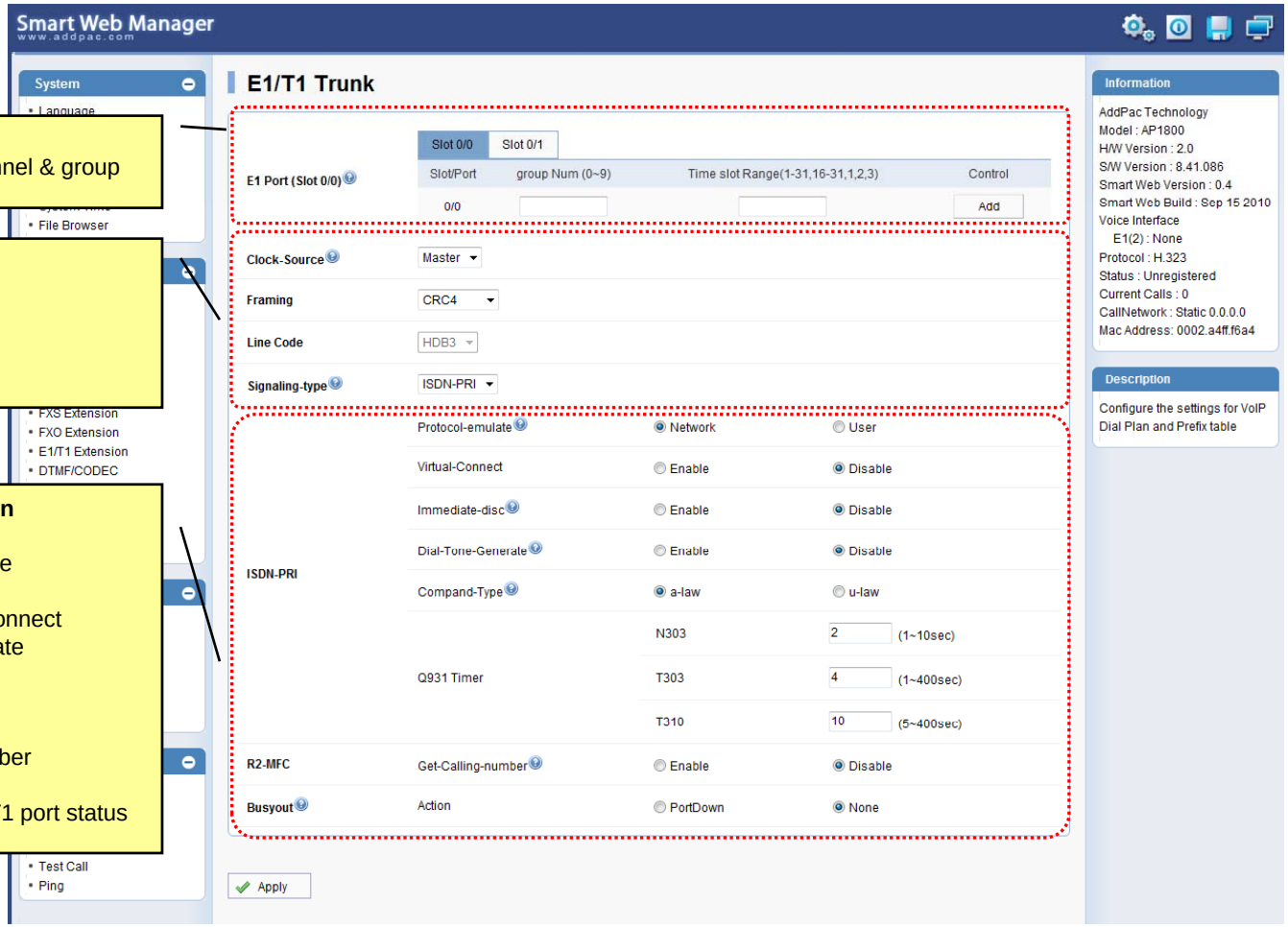
E1/T1 Port
Configure E1 channel & group

E1/T1 value
Clock-Source
Framing
Line Code
Signaling type

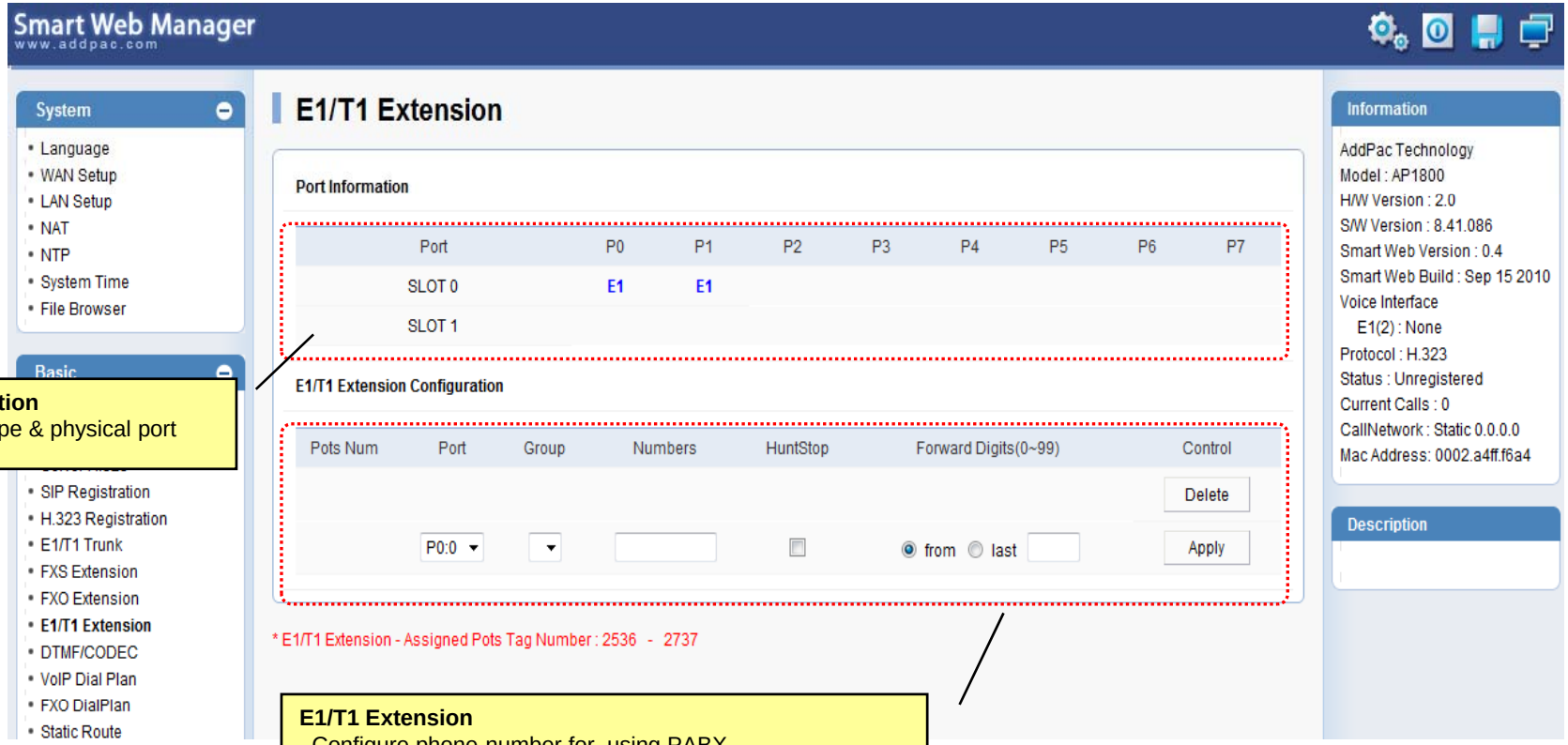
E1/T1Sub function
ISDN-PRI
- Protocol-emulate
- virtual-Connect
- immediate-disconnect
- dial-tone generate
- Compand type
- Q931 Timer

R2-MFC
- Get calling number

Busyout
- monitoring E1/T1 port status



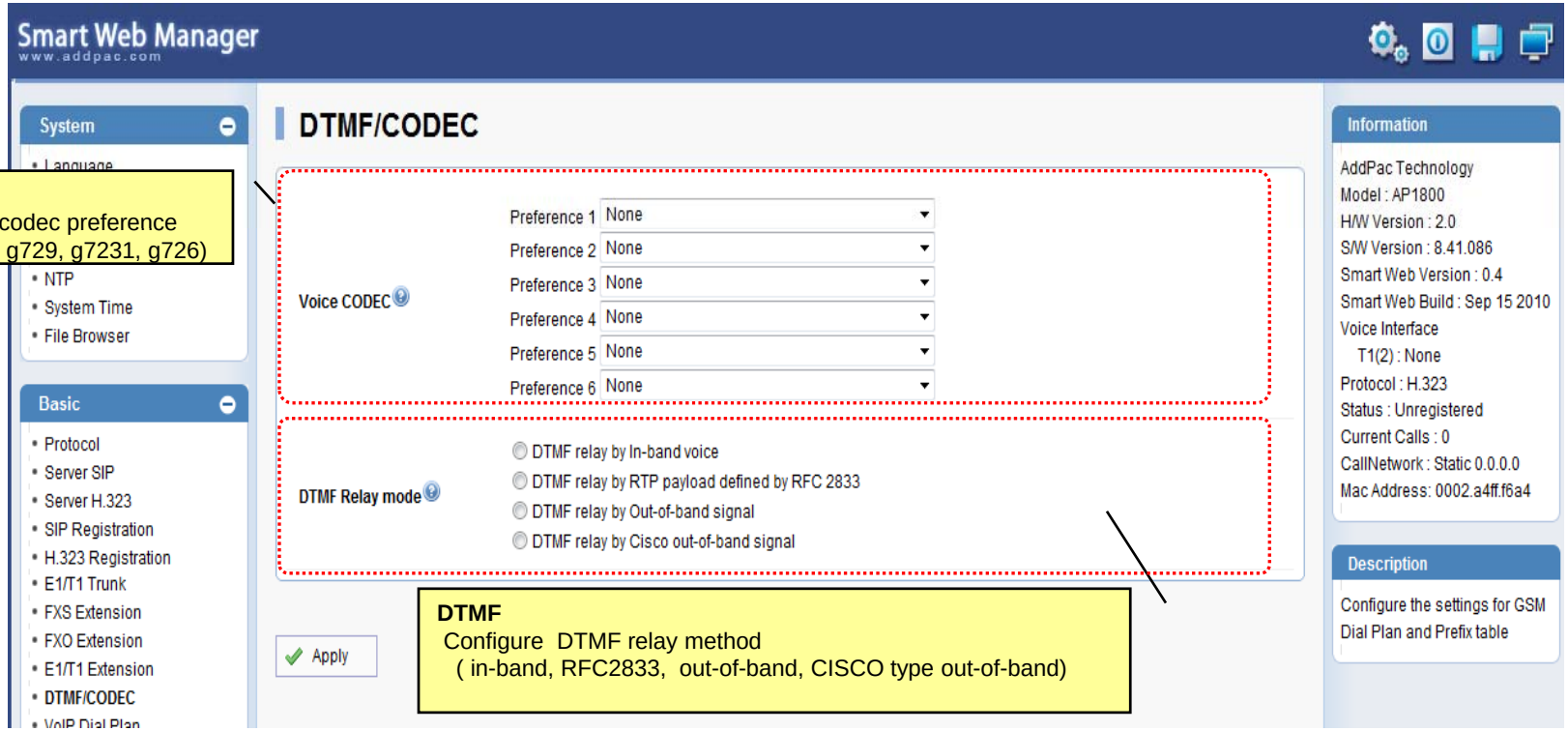
Basic – Digital : E1/ T1 Extension



Port Information
voice port type & physical port

E1/T1 Extension
Configure phone-number for using PABX
- Forward-Digits (from / last)

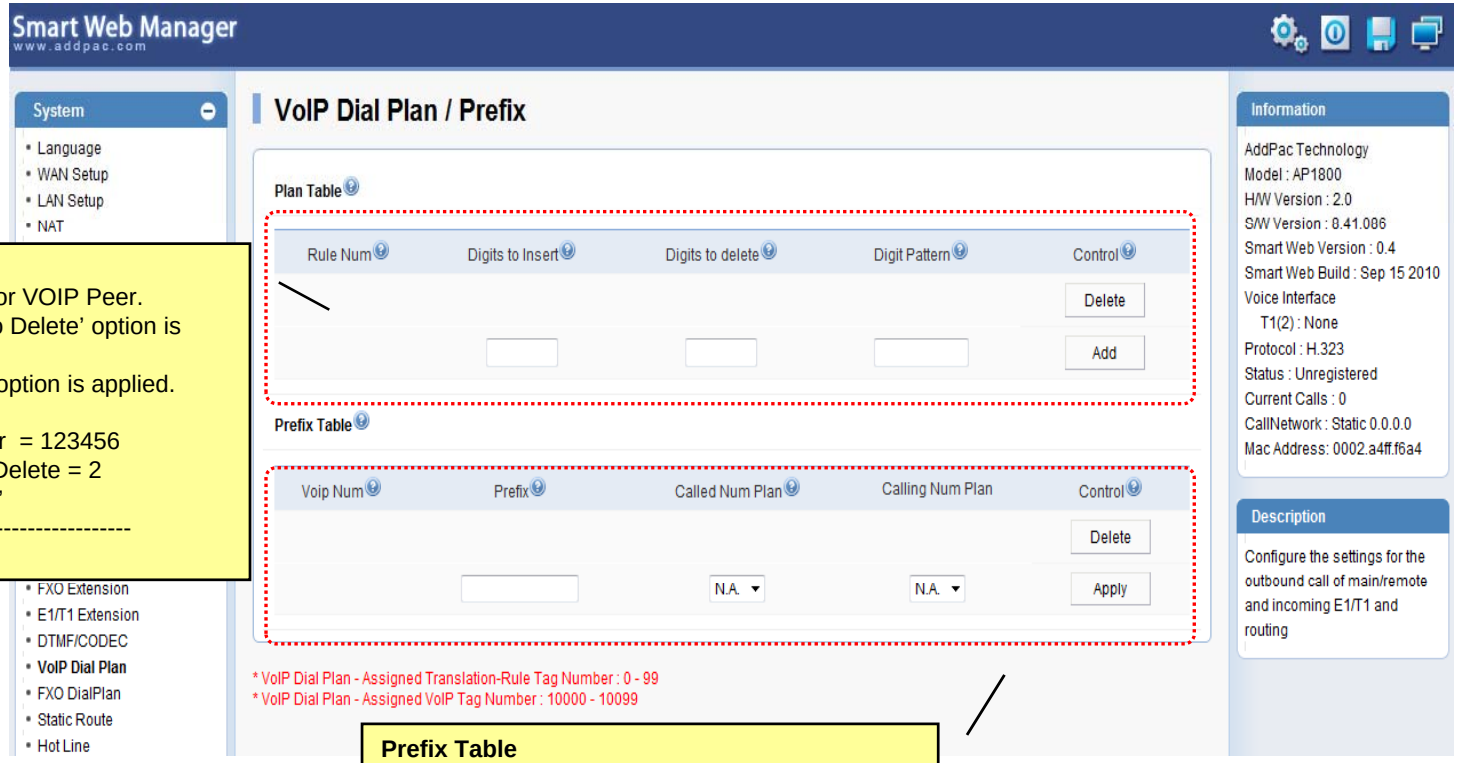
Basic – DTMF/CODEC



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

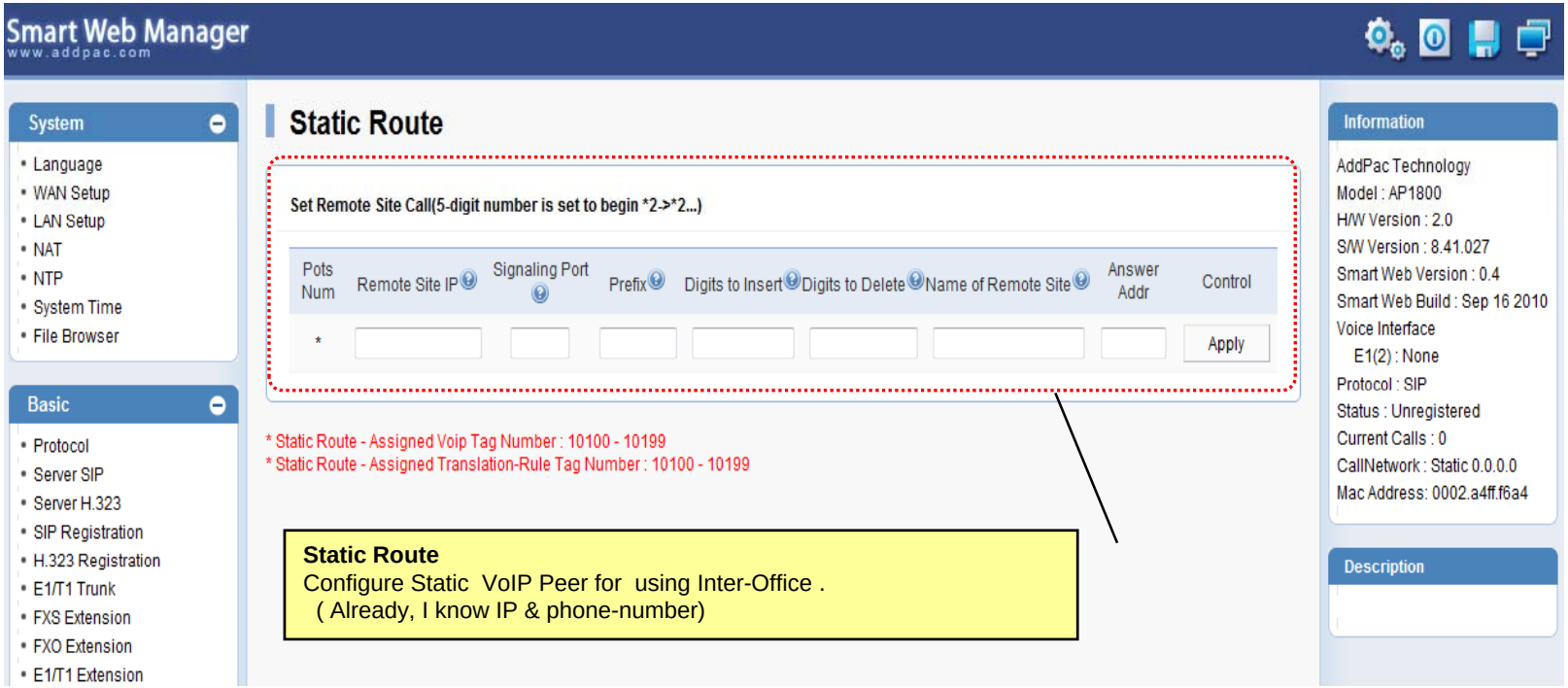


VoIP PLAN
Configure translation rule for VOIP Peer.
- first, 'Number of Digits to Delete' option is applied.
- second, 'Digits to Insert' option is applied.

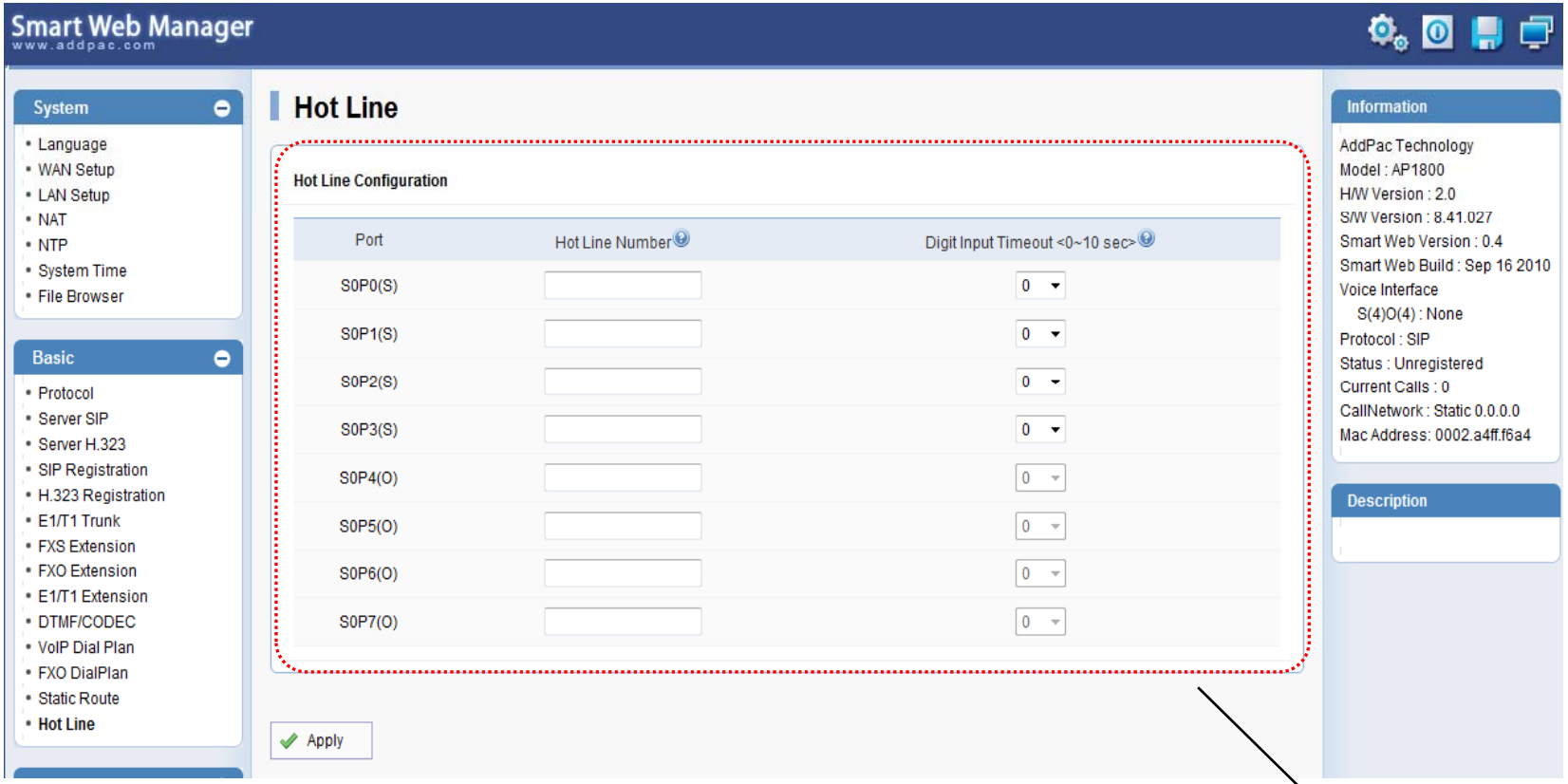
(ex) Origin called Number = 123456
Number of Digits to Delete = 2
Digits to Insert = "88"
---
result = 883456

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

Basic – Static Route

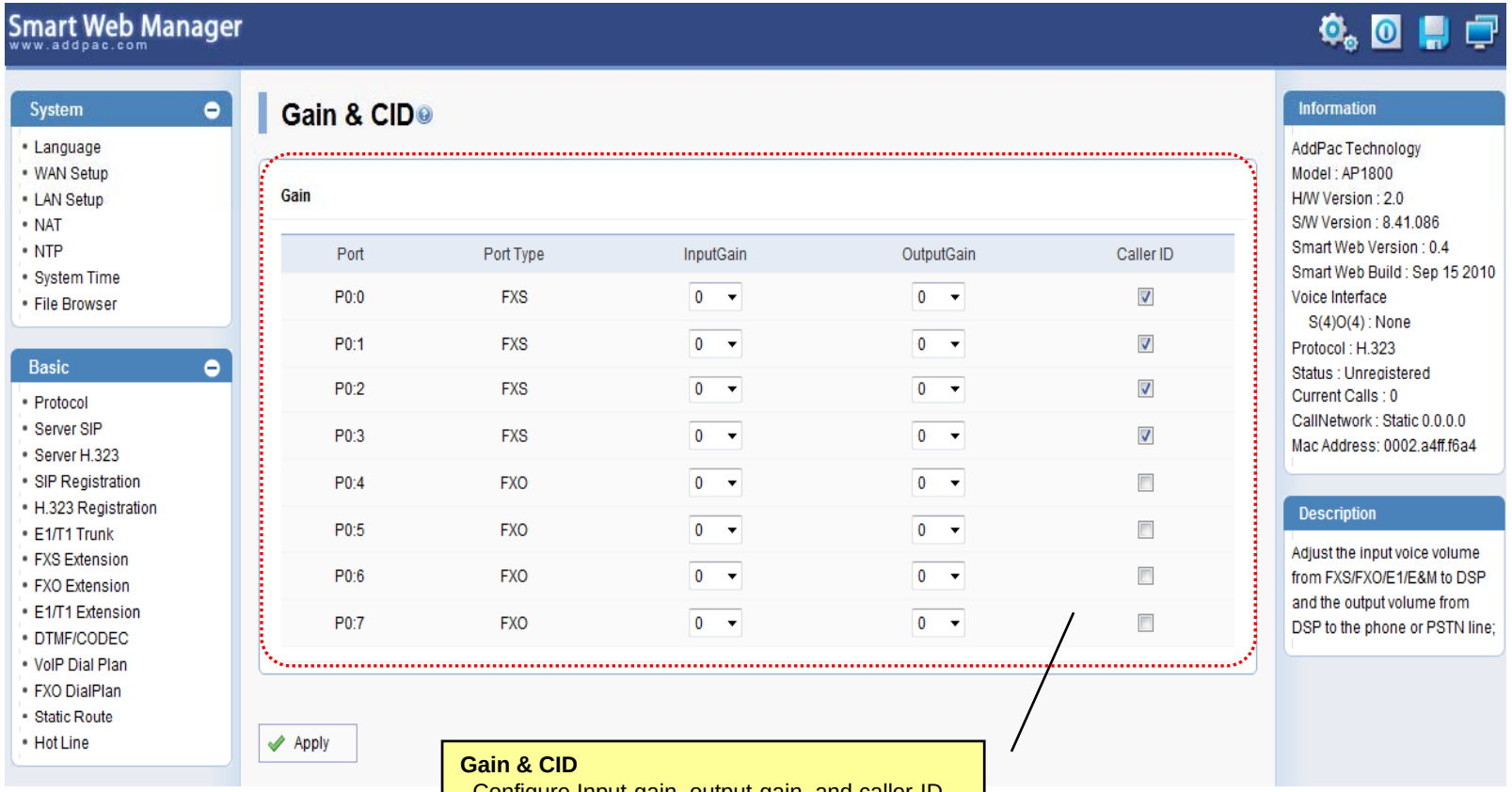


Basic – Hot Line



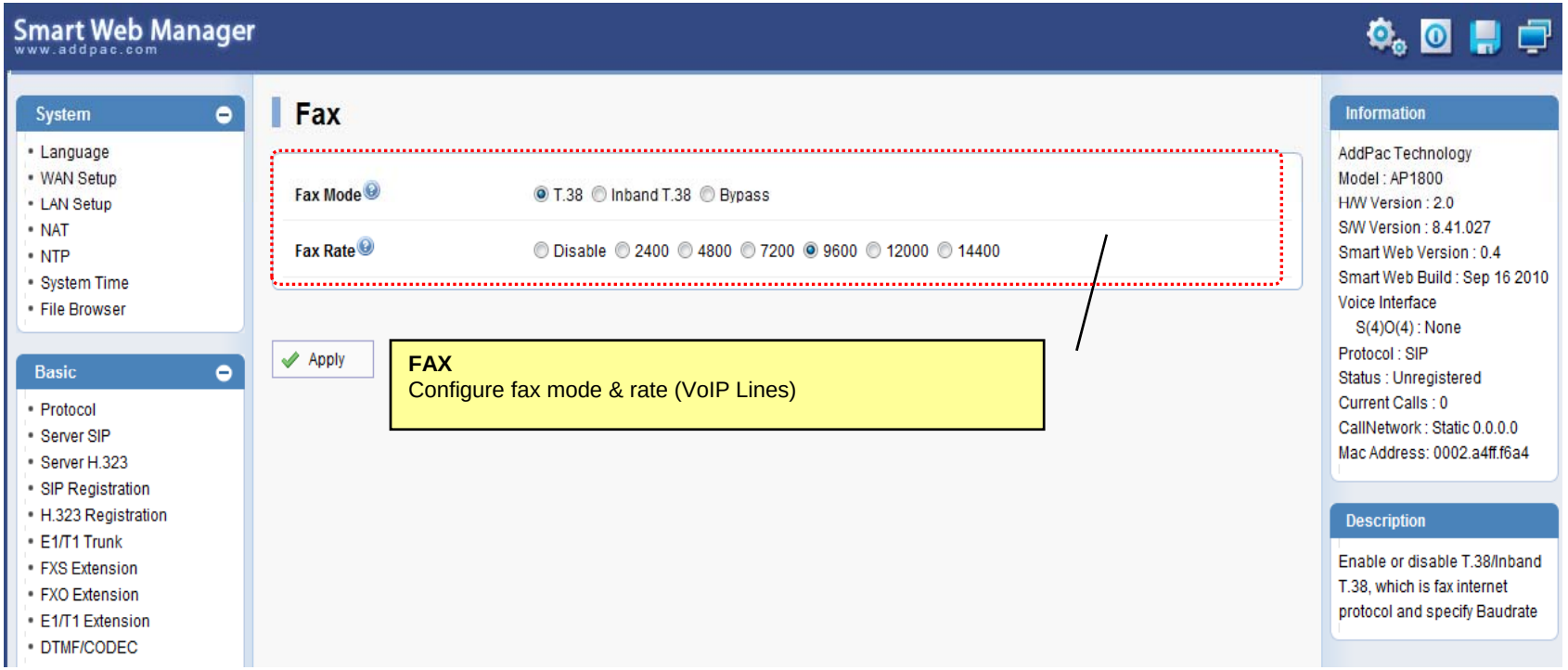
Hot Line
- Used as incoming direct call of FXO port(Connection PLAR)
- Timer (FXS port only : No Digit event is occurred for configured timer value, Auto-Dialing will be started)

Advanced – Gain & CID

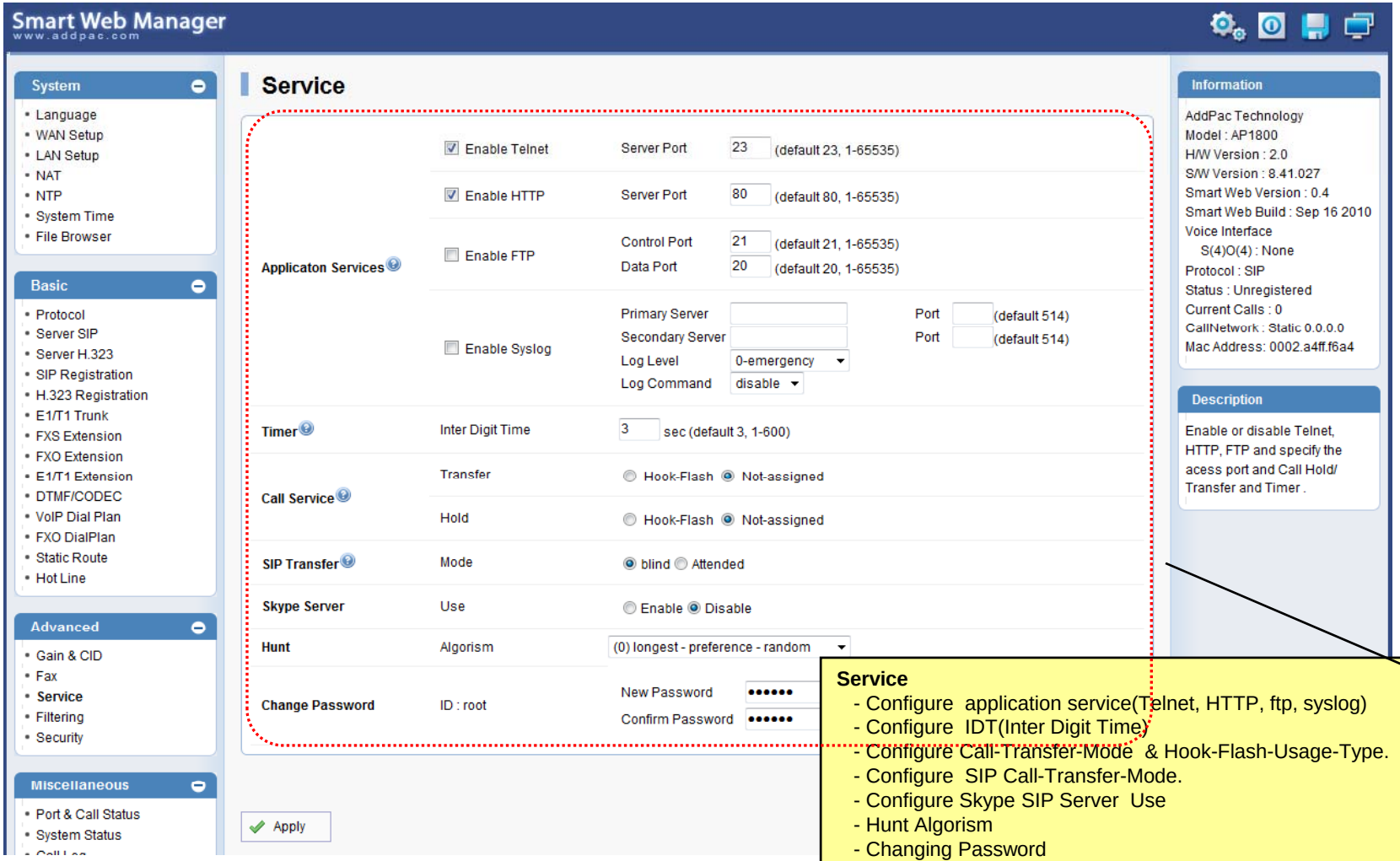


Gain & CID
Configure Input-gain, output-gain and caller-ID.

Advanced - Fax

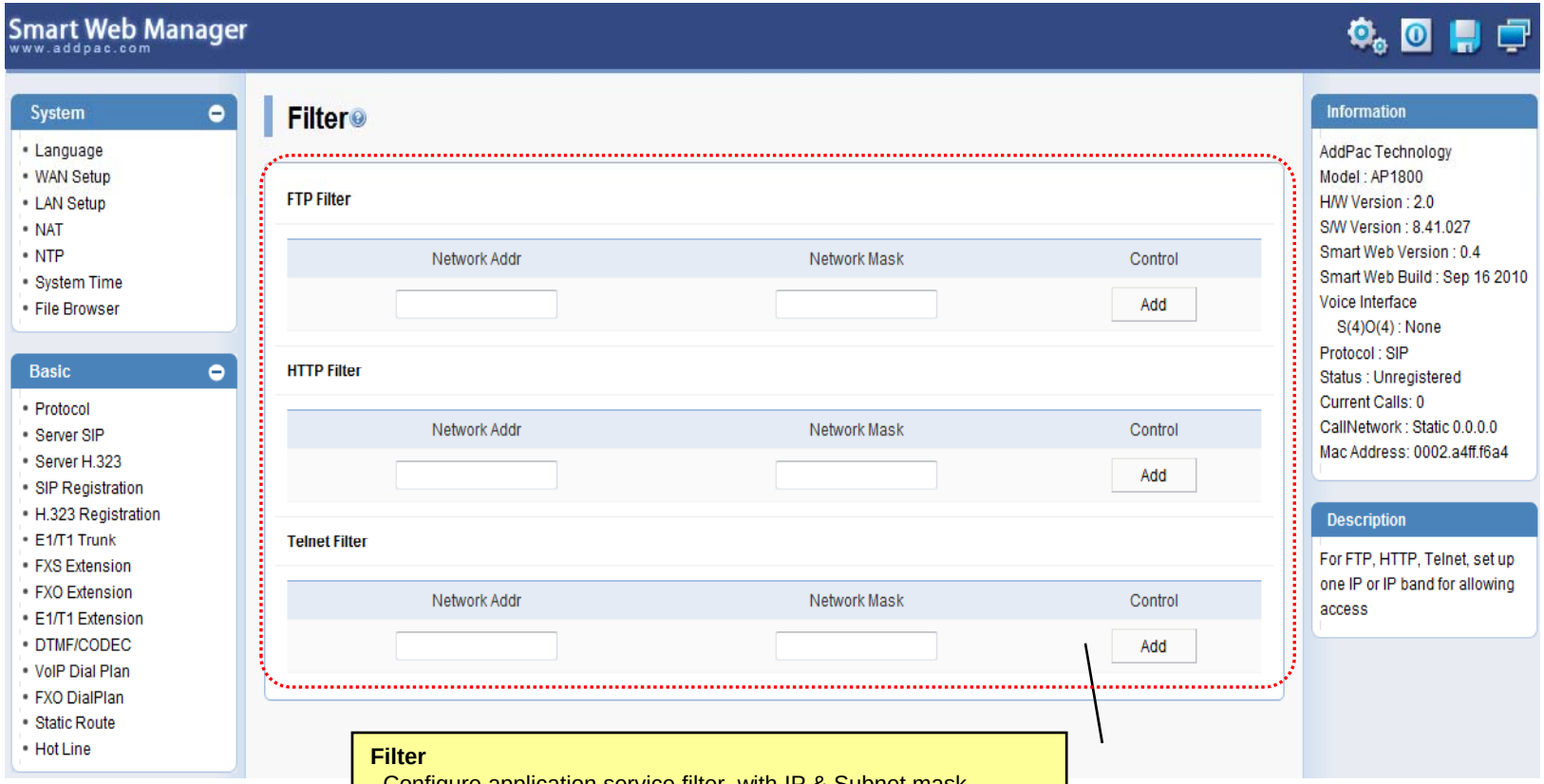


Advanced - Service



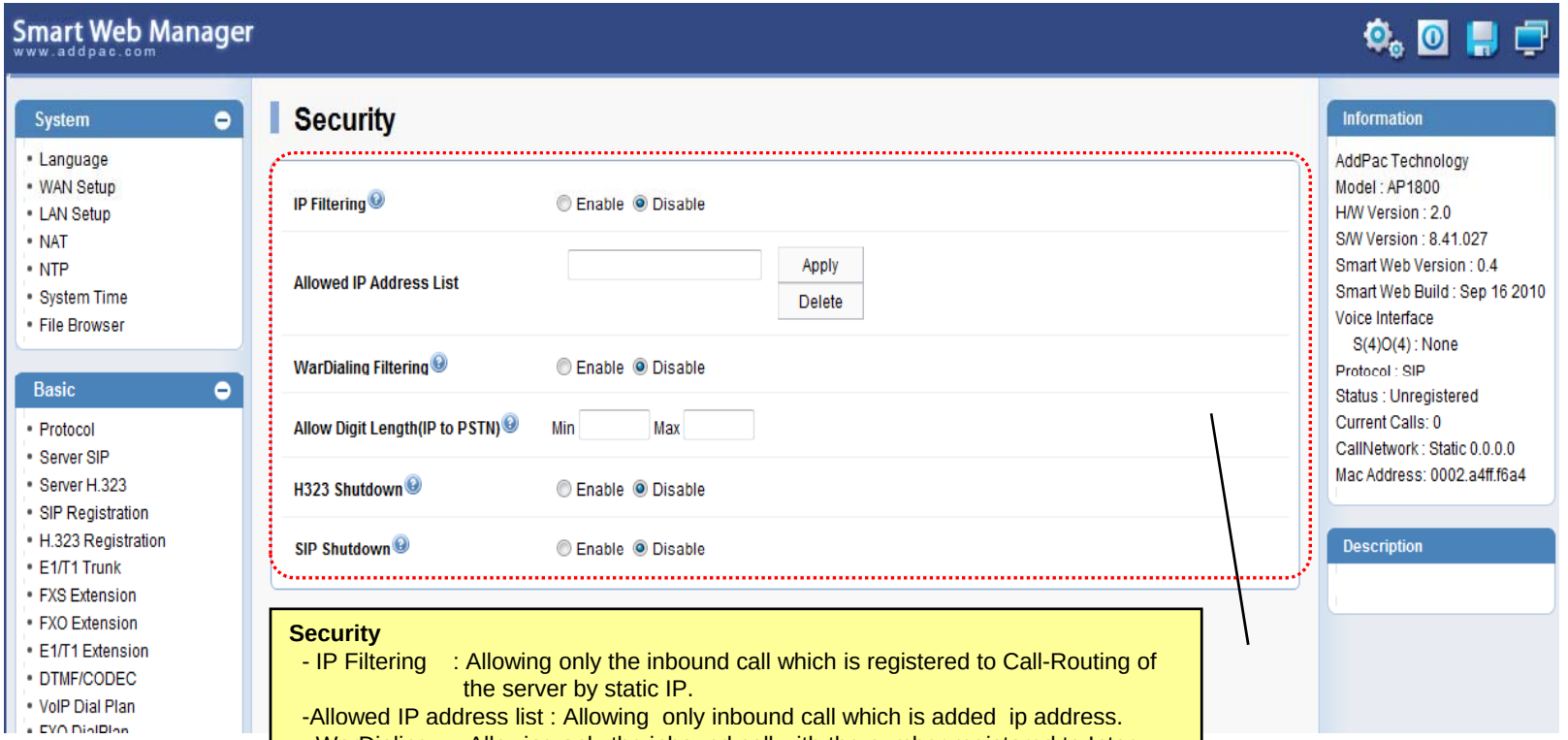
Service
- Configure application service(Telnet, HTTP, ftp, syslog)
- Configure IDT(Inter Digit Time)
- Configure Call-Transfer-Mode & Hook-Flash-Usage-Type.
- Configure SIP Call-Transfer-Mode.
- Configure Skype SIP Server Use
- Hunt Algorism
- Changing Password

Advanced - Filtering



Filter
Configure application service filter with IP & Subnet mask.

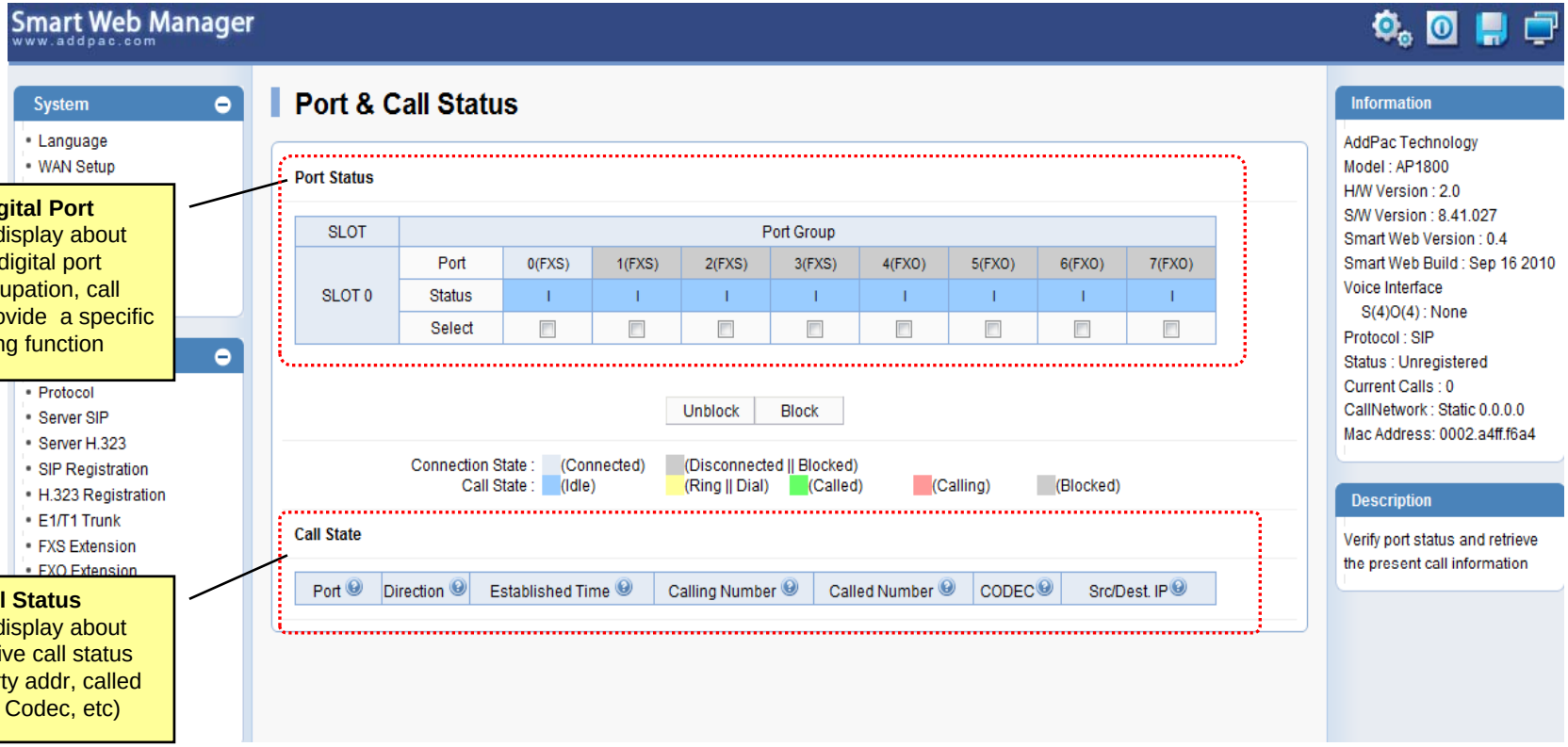
Advanced - Security



Security

- IP Filtering : Allowing only the inbound call which is registered to Call-Routing of the server by static IP.
- Allowed IP address list : Allowing only inbound call which is added ip address.
- 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
- H.323 : H.323 signaling packets are filtered.
- SIP : SIP signaling packets are filtered.

Miscellaneous – Port & Call Status

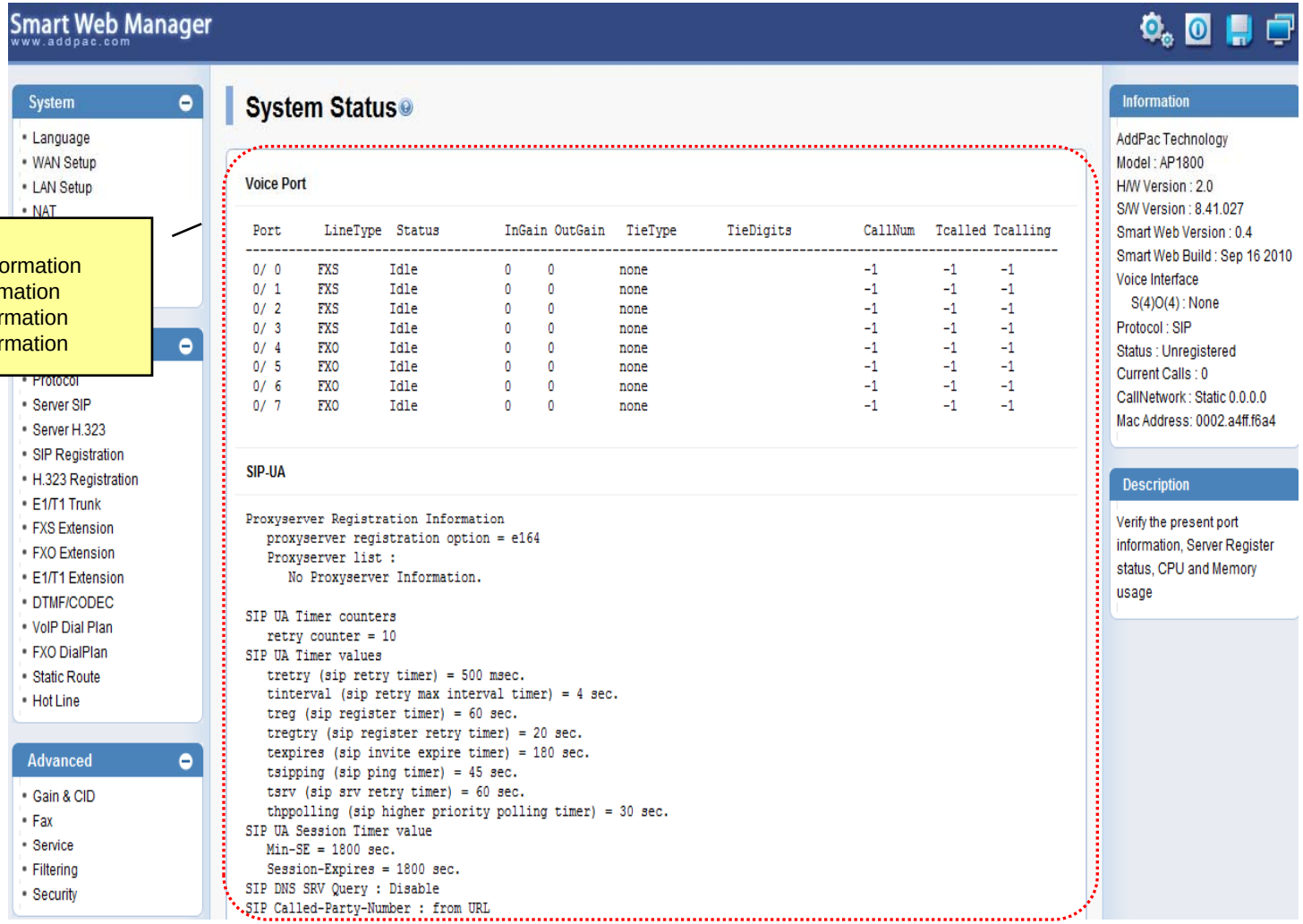


Analog/Digital Port
Real-time display about analog or digital port status (occupation, call status). Provide a specific port blocking function

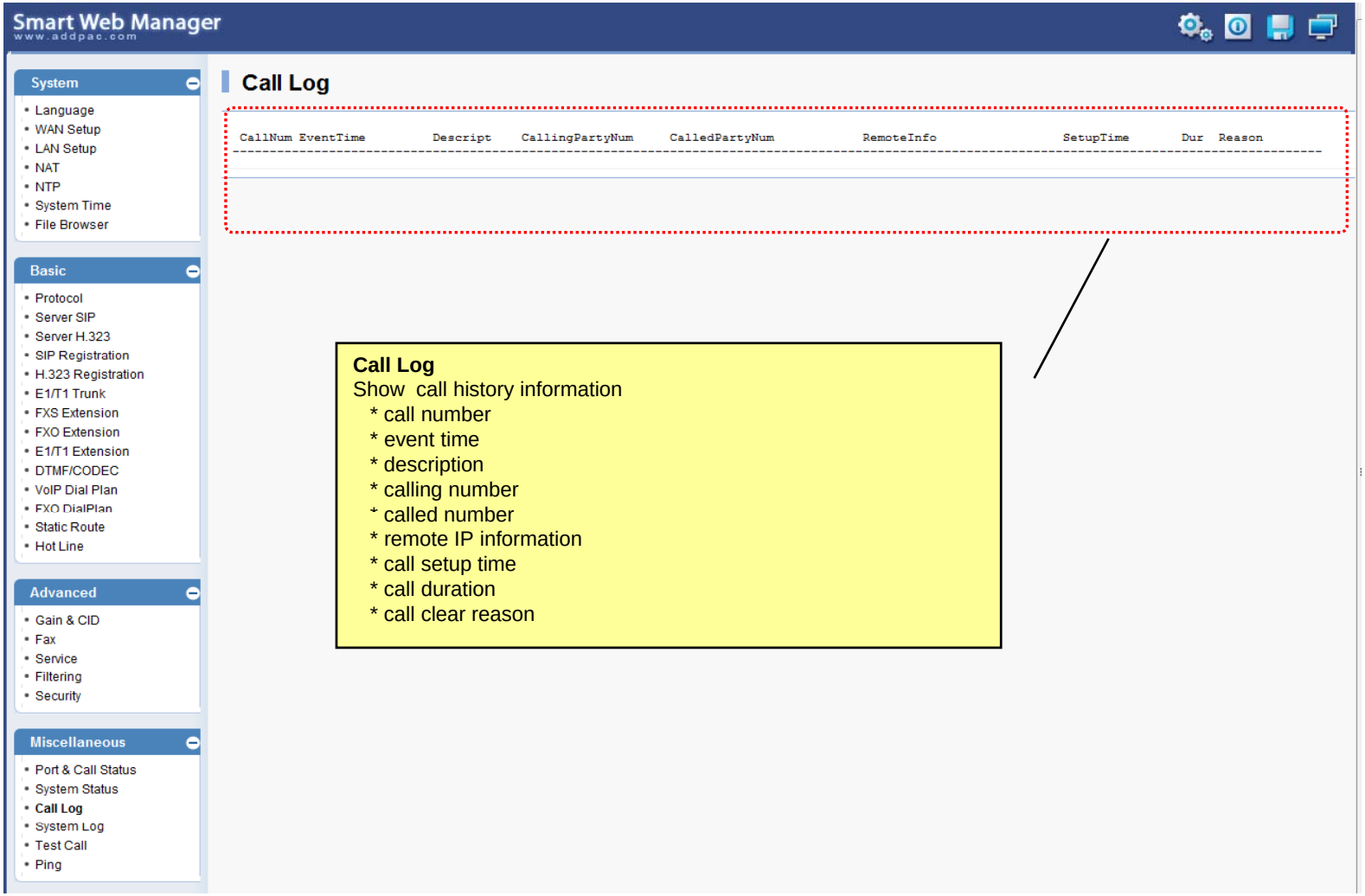
Active Call Status
Real-time display about current active call status (calling party addr, called party addr. Codec, etc)

Miscellaneous – System Status

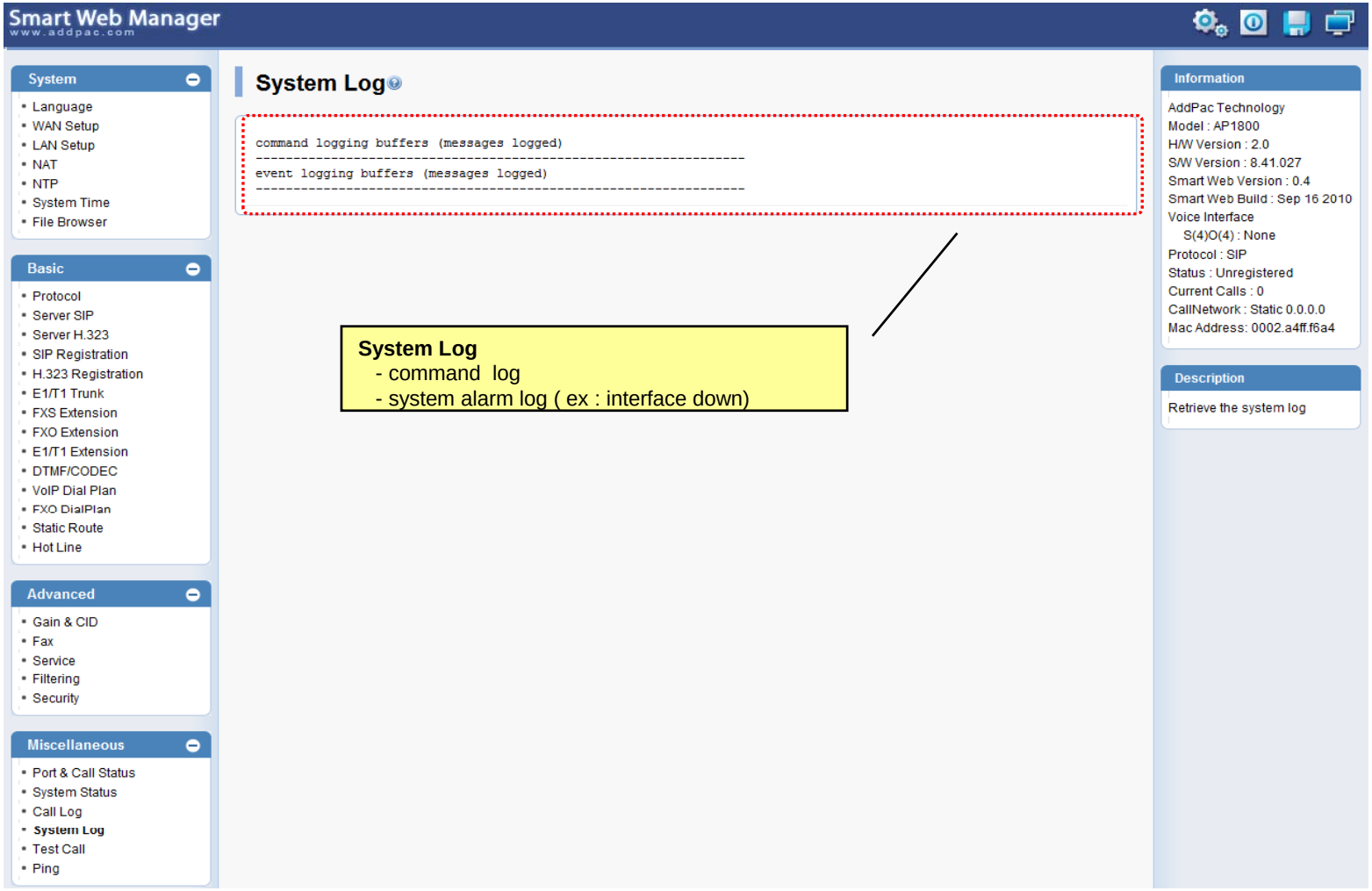
System Status
- voice port status & information
- SIP-UA status & information
- gateway status & information
- system utilization information



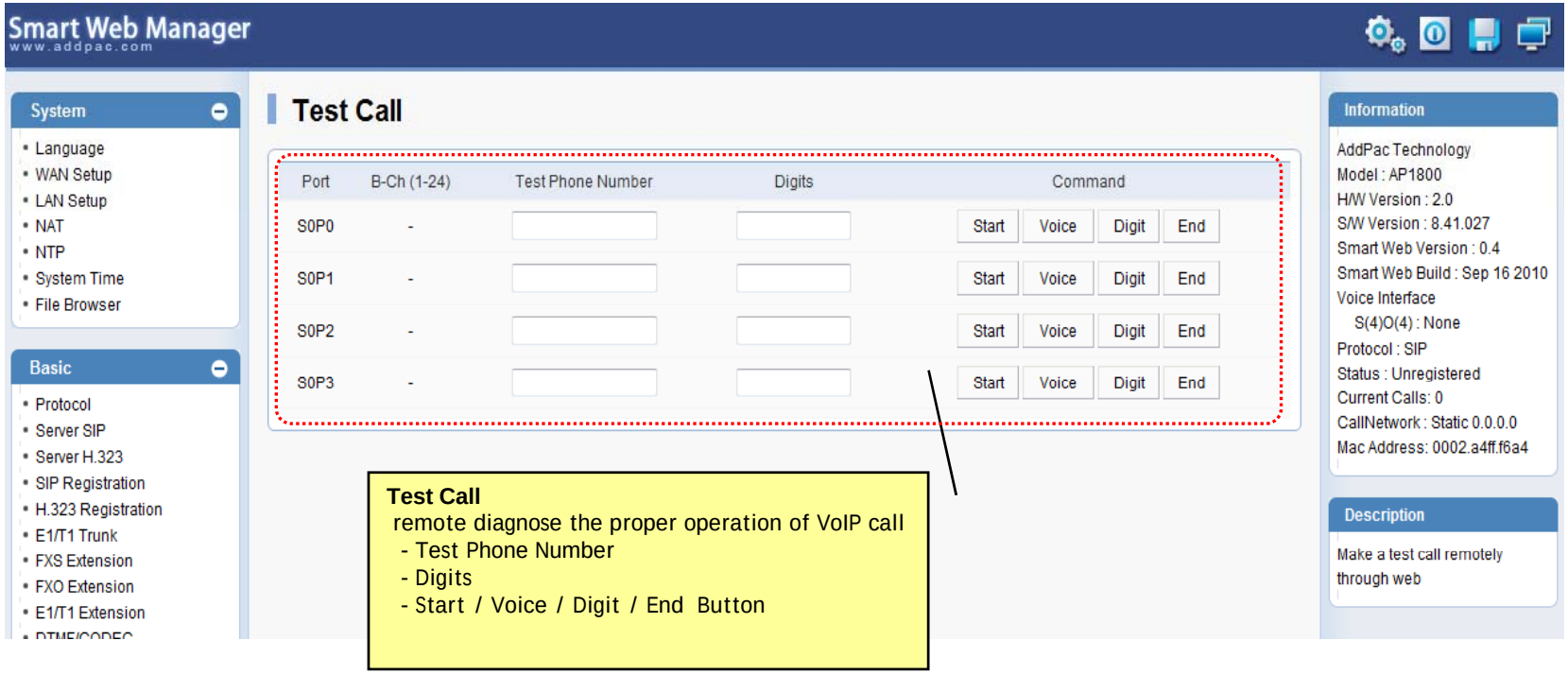
Miscellaneous – Call Log



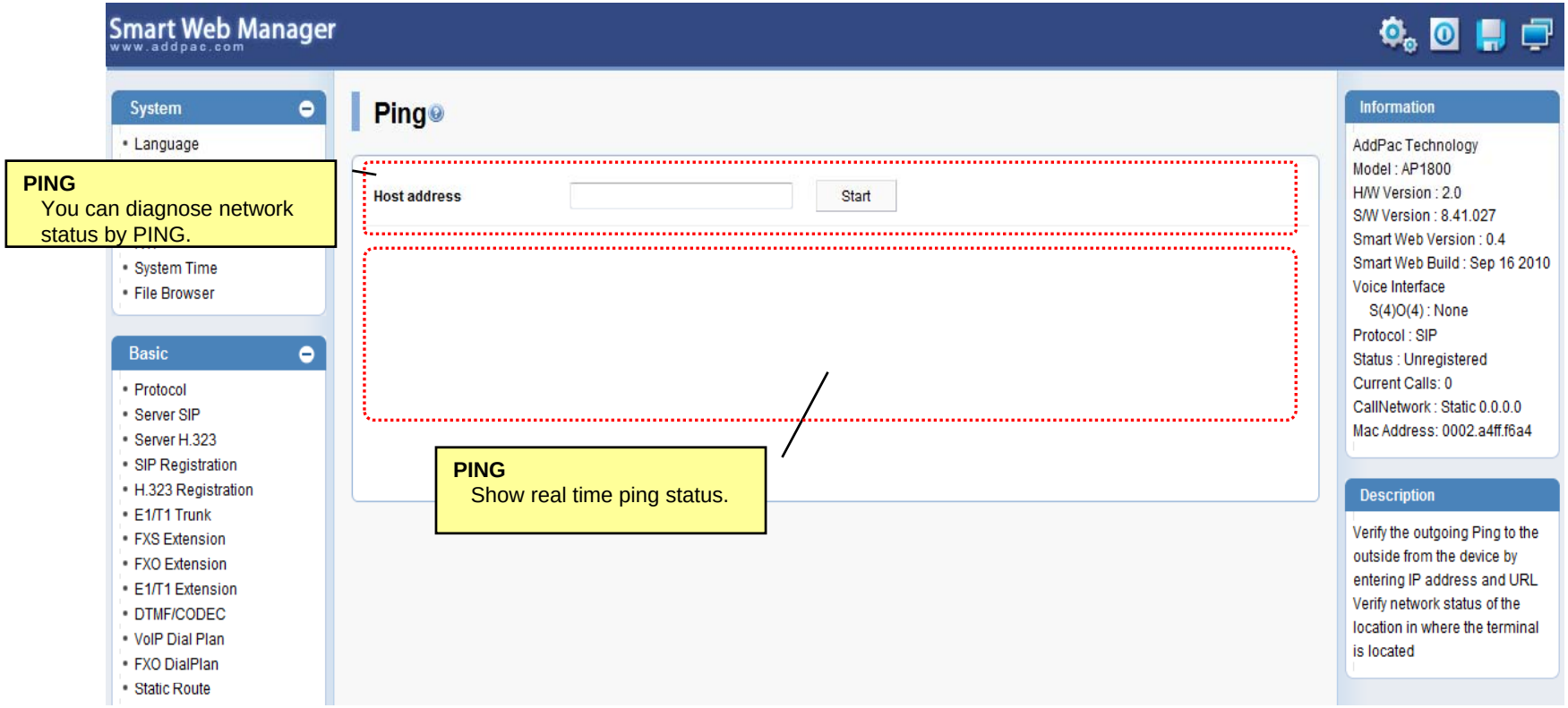
Miscellaneous – System Log



Miscellaneous – Test Call

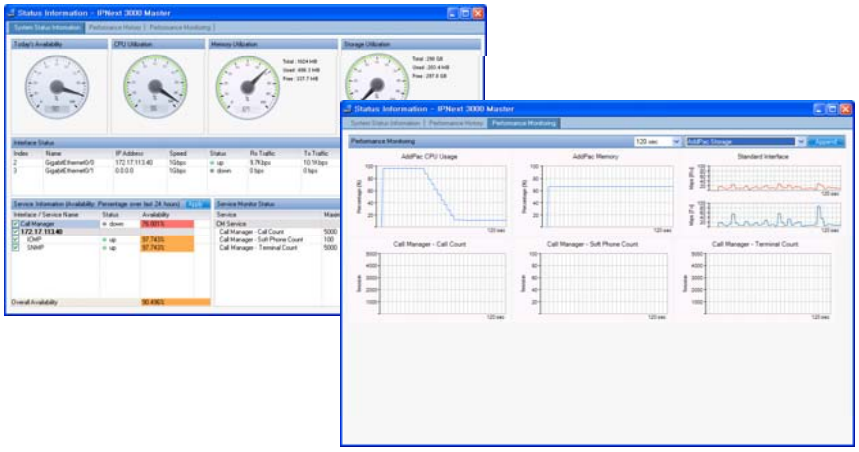


Miscellaneous - Ping



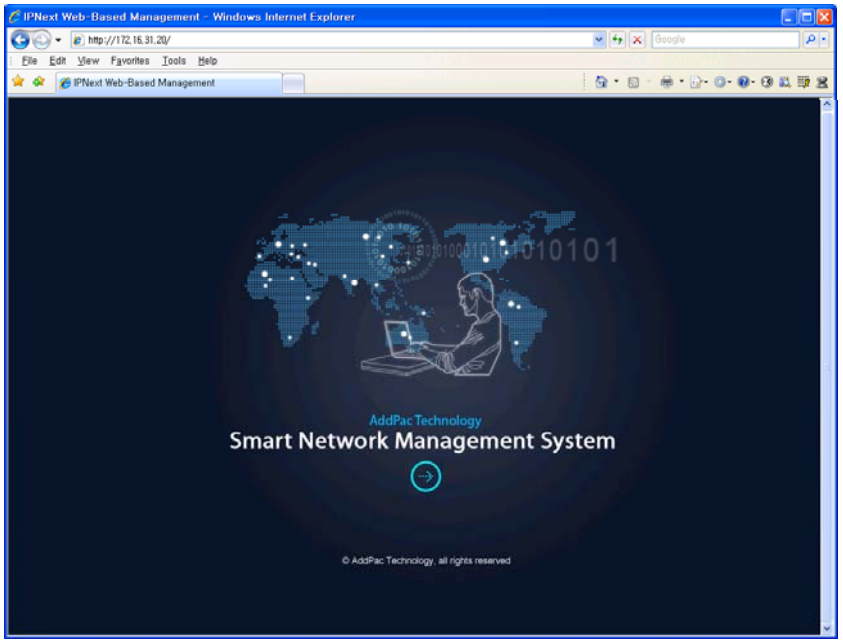
Smart NMS

Smart Network Management System for Large Scale VoIP Gateway Deployment



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

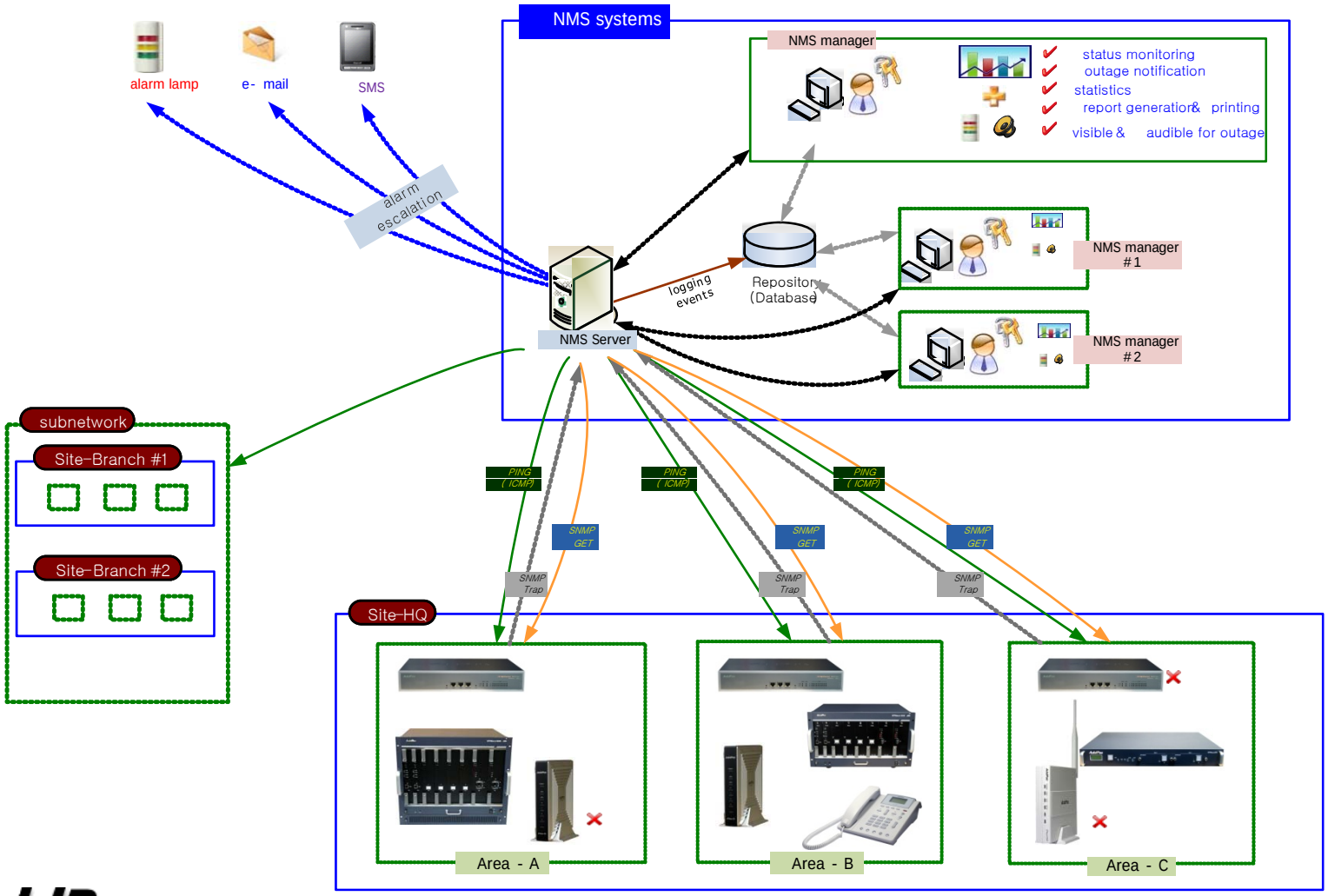
NMS Server

- 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

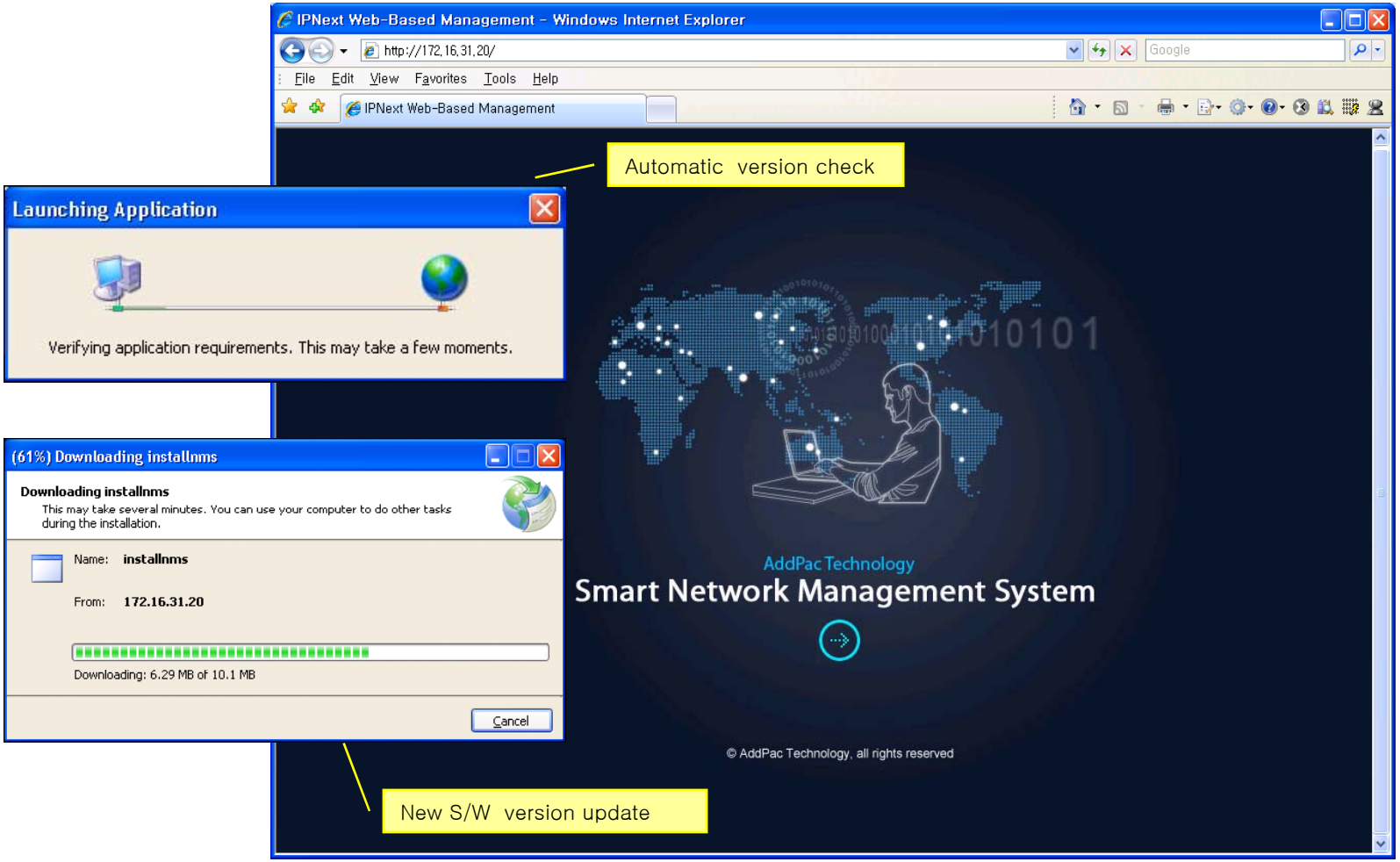
NMS Networking Diagram



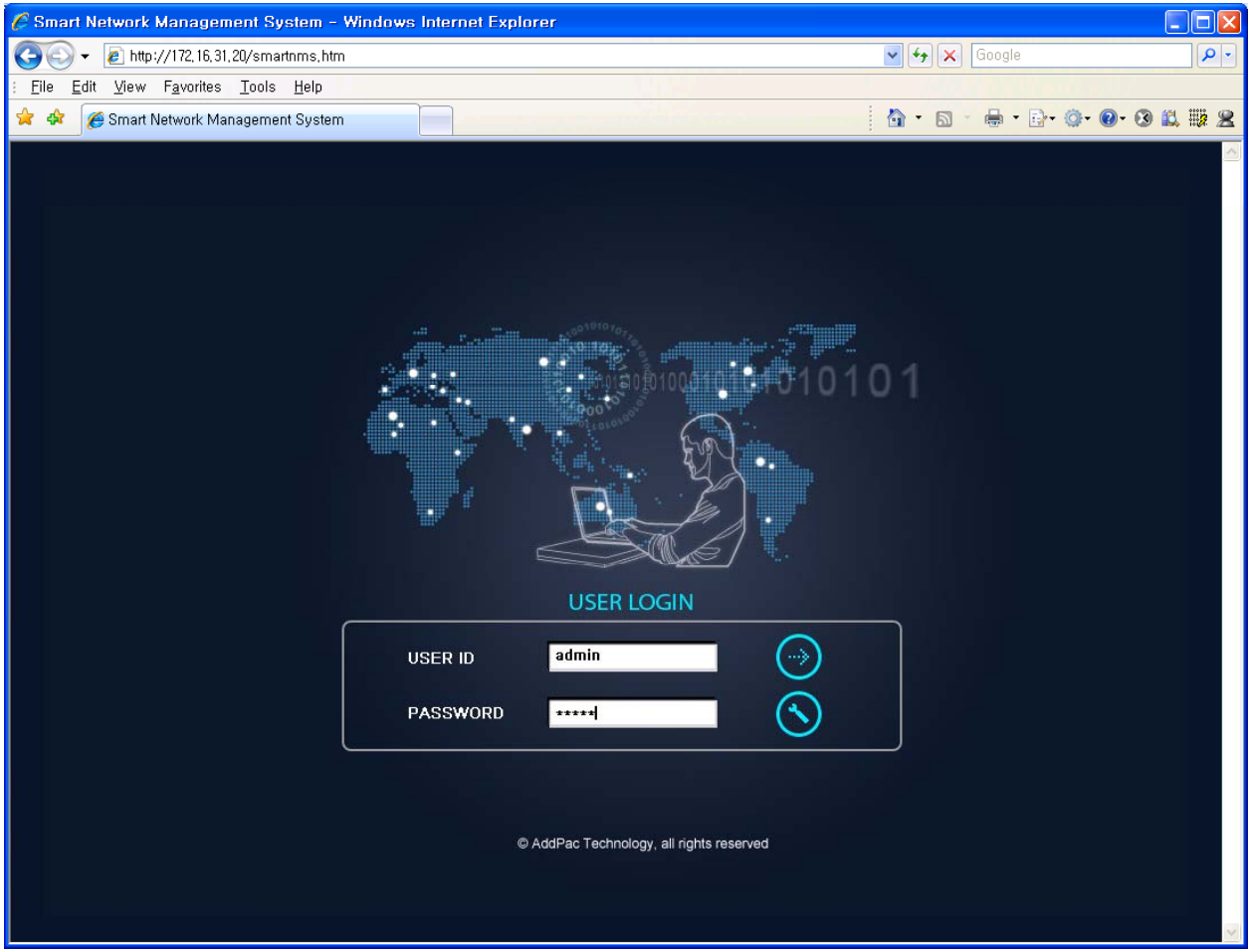
Web-based Management

- **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

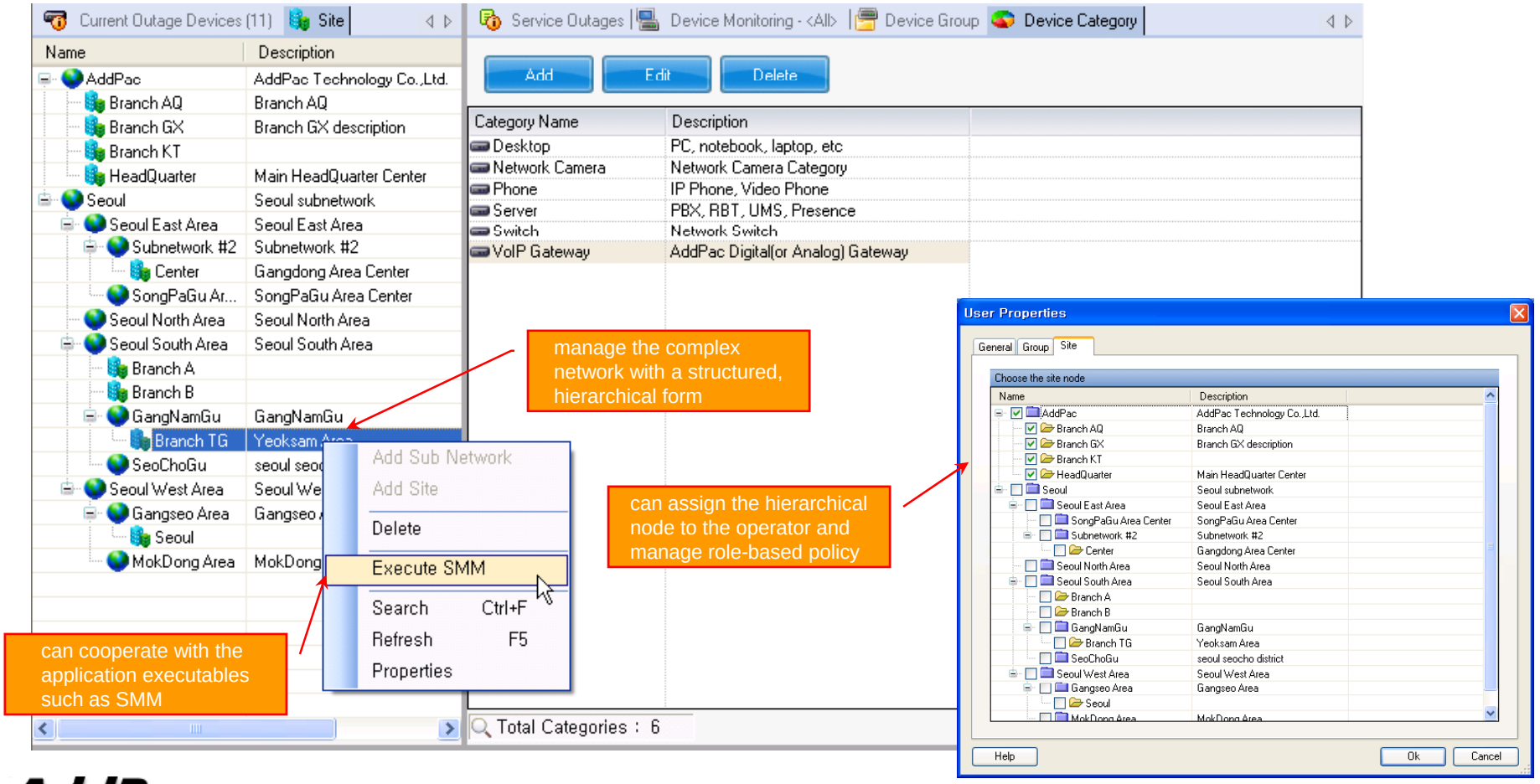


Web-based Login



Network Resource Management

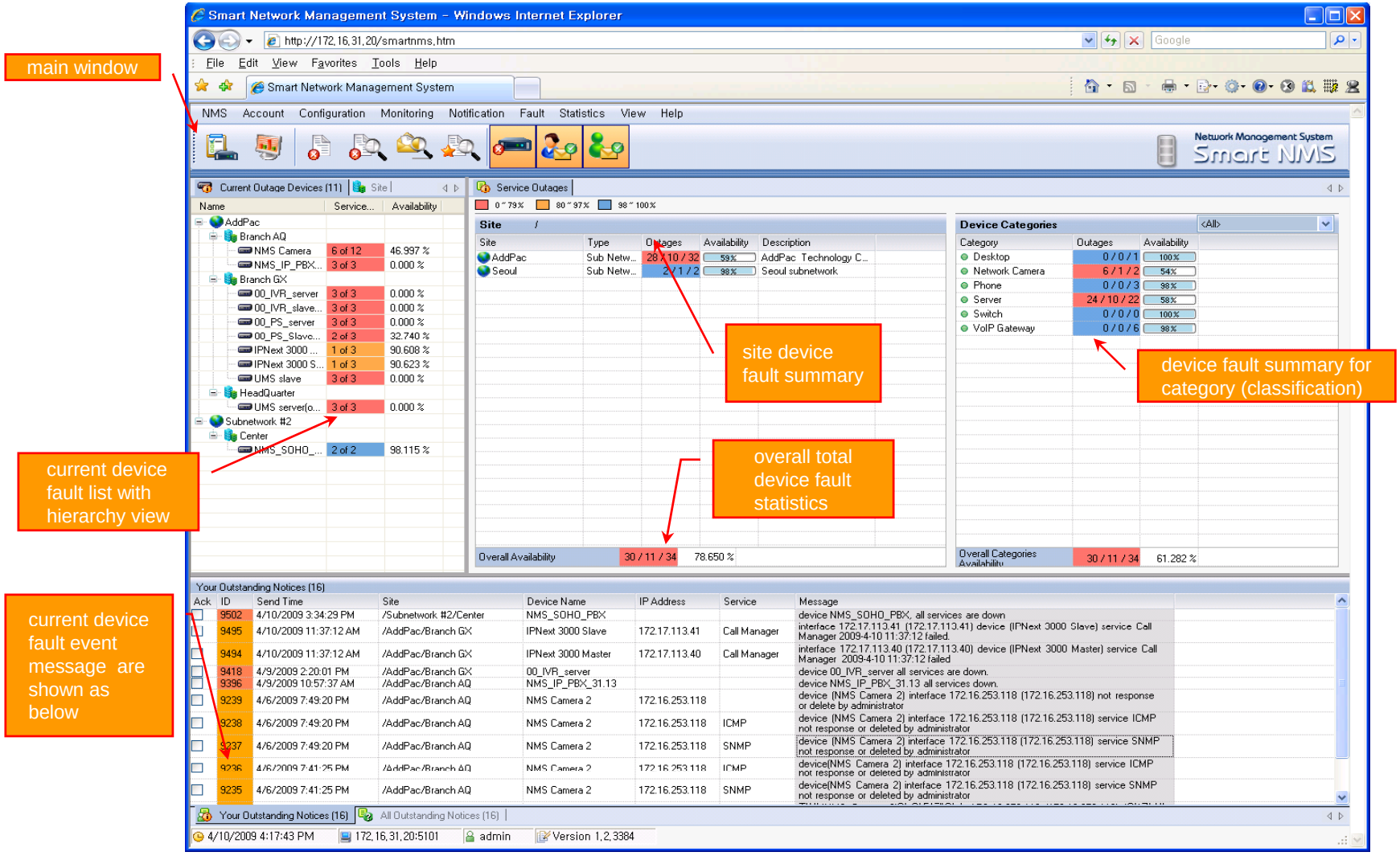
- Network resource management with hierarchical structure
- Role-based resource management for each administrator



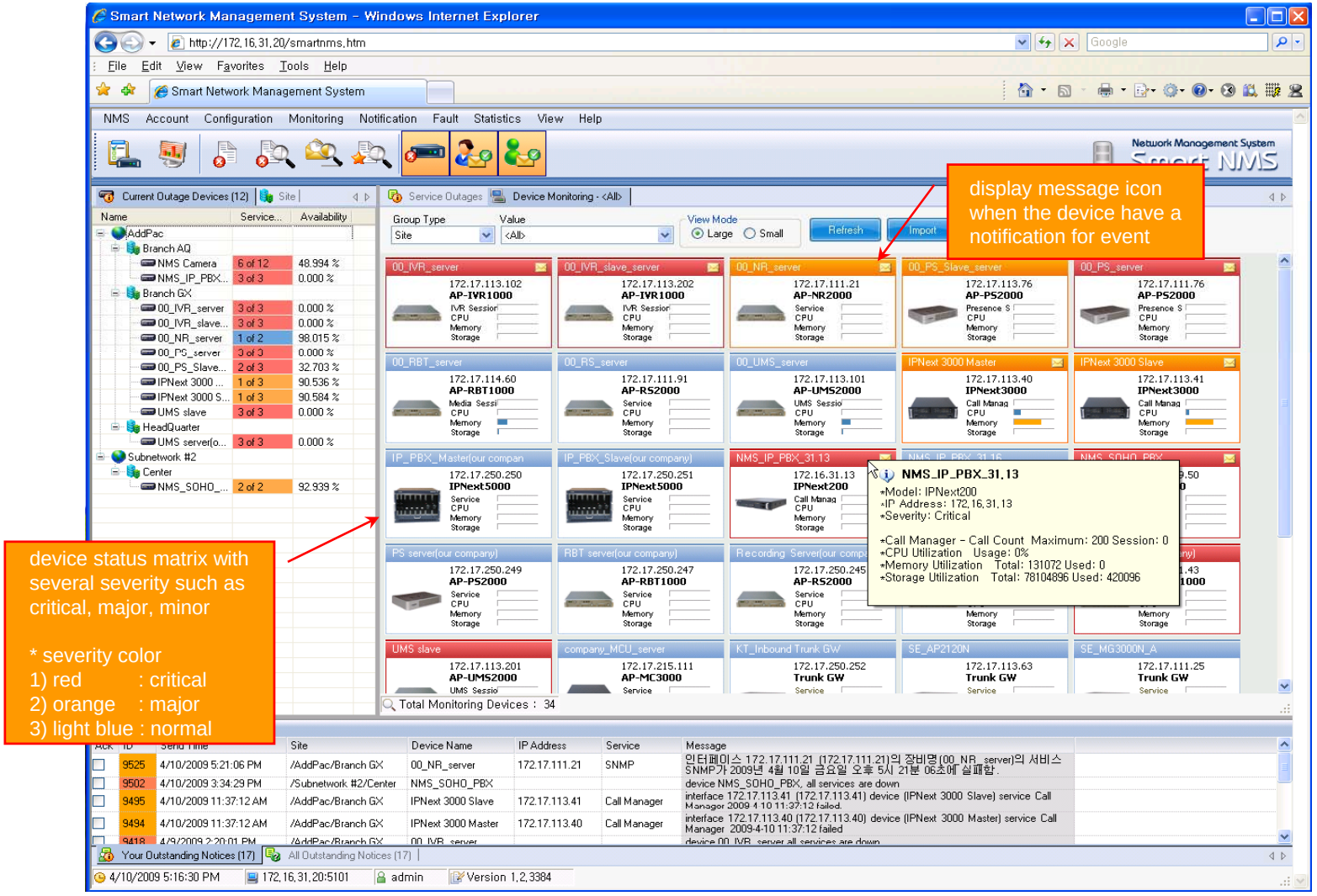
Device Fault Management

- 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

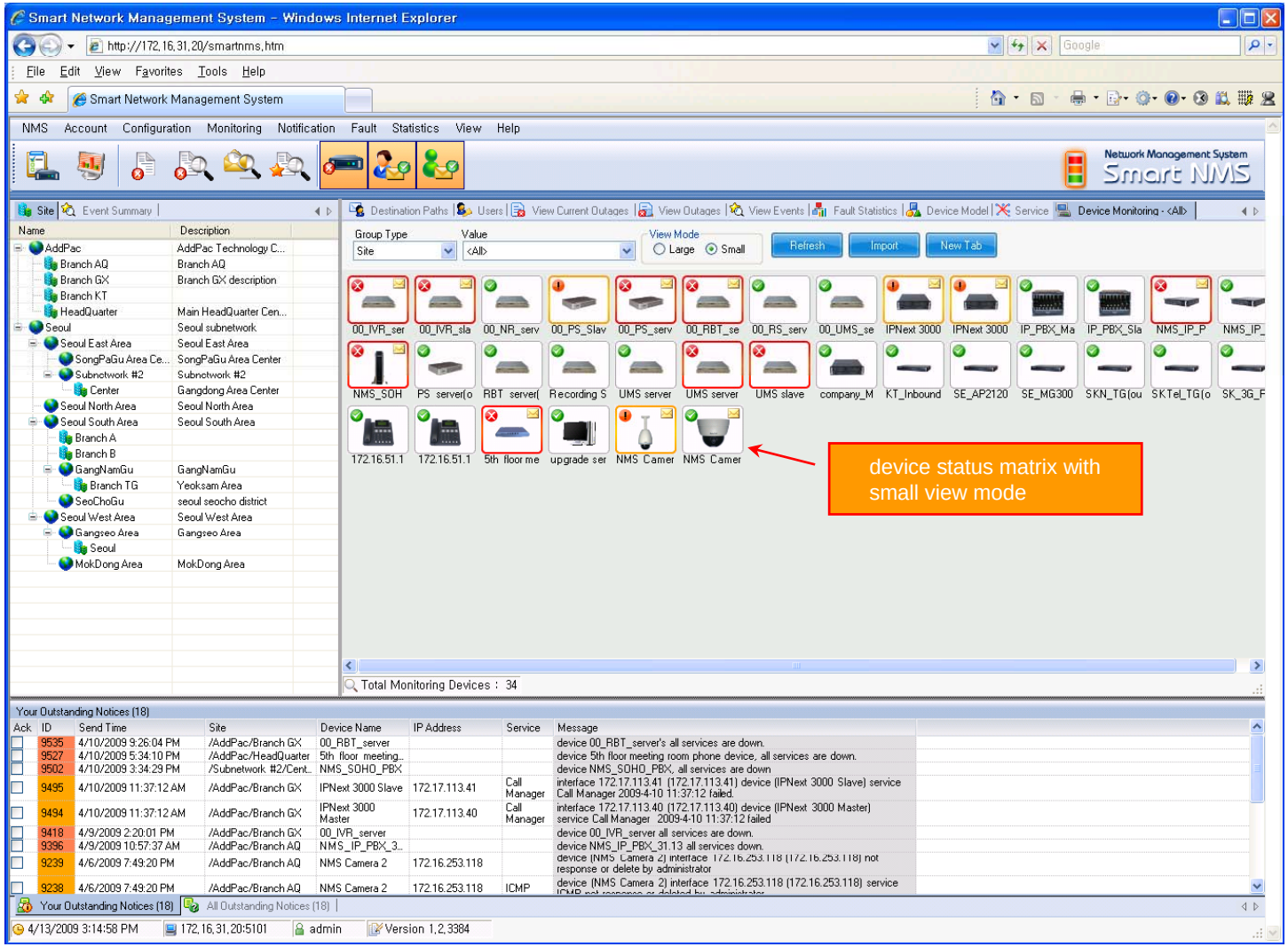
Device Fault Management



Device Fault Management



Device Fault Management



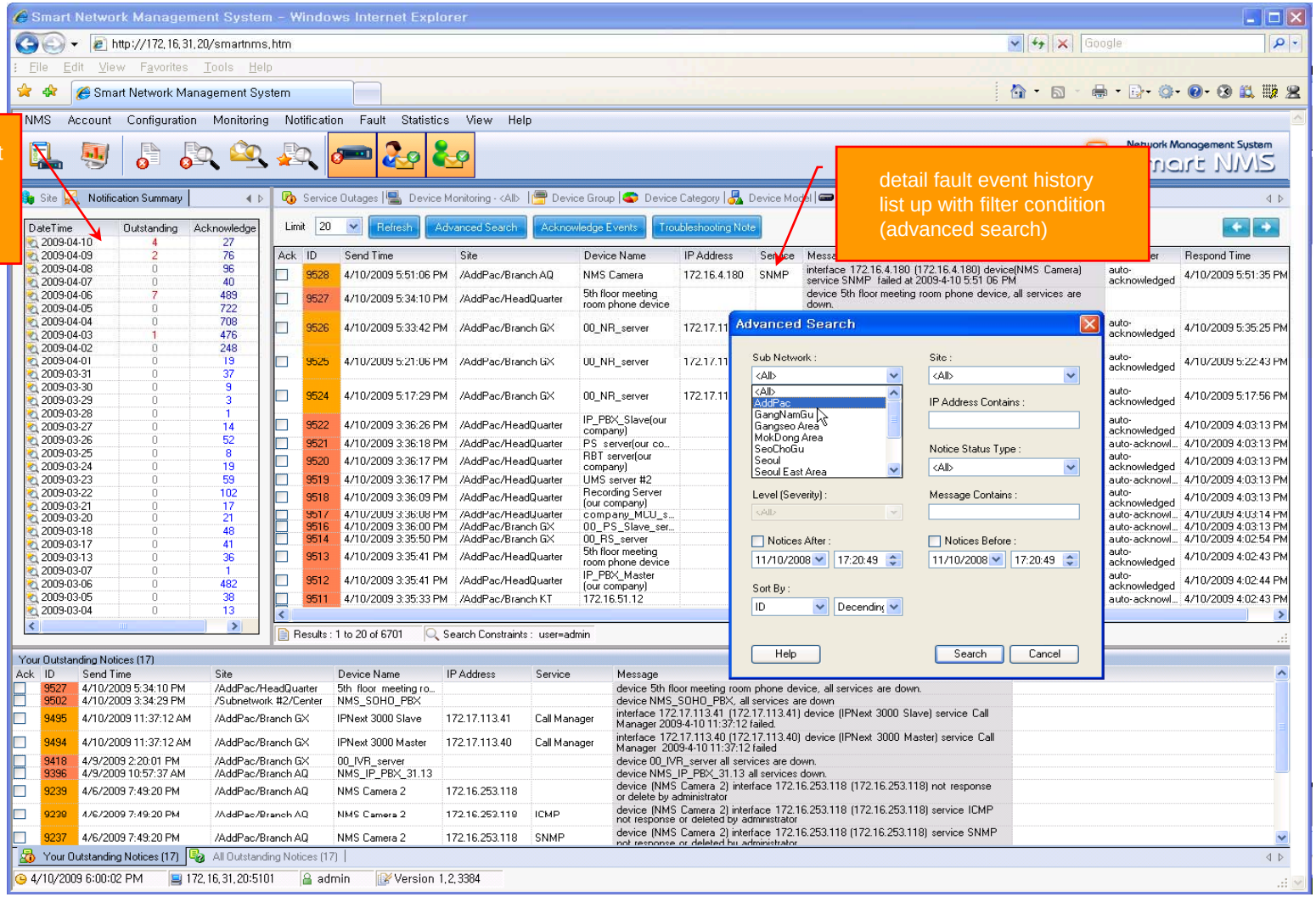
Device Fault History Management

- 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

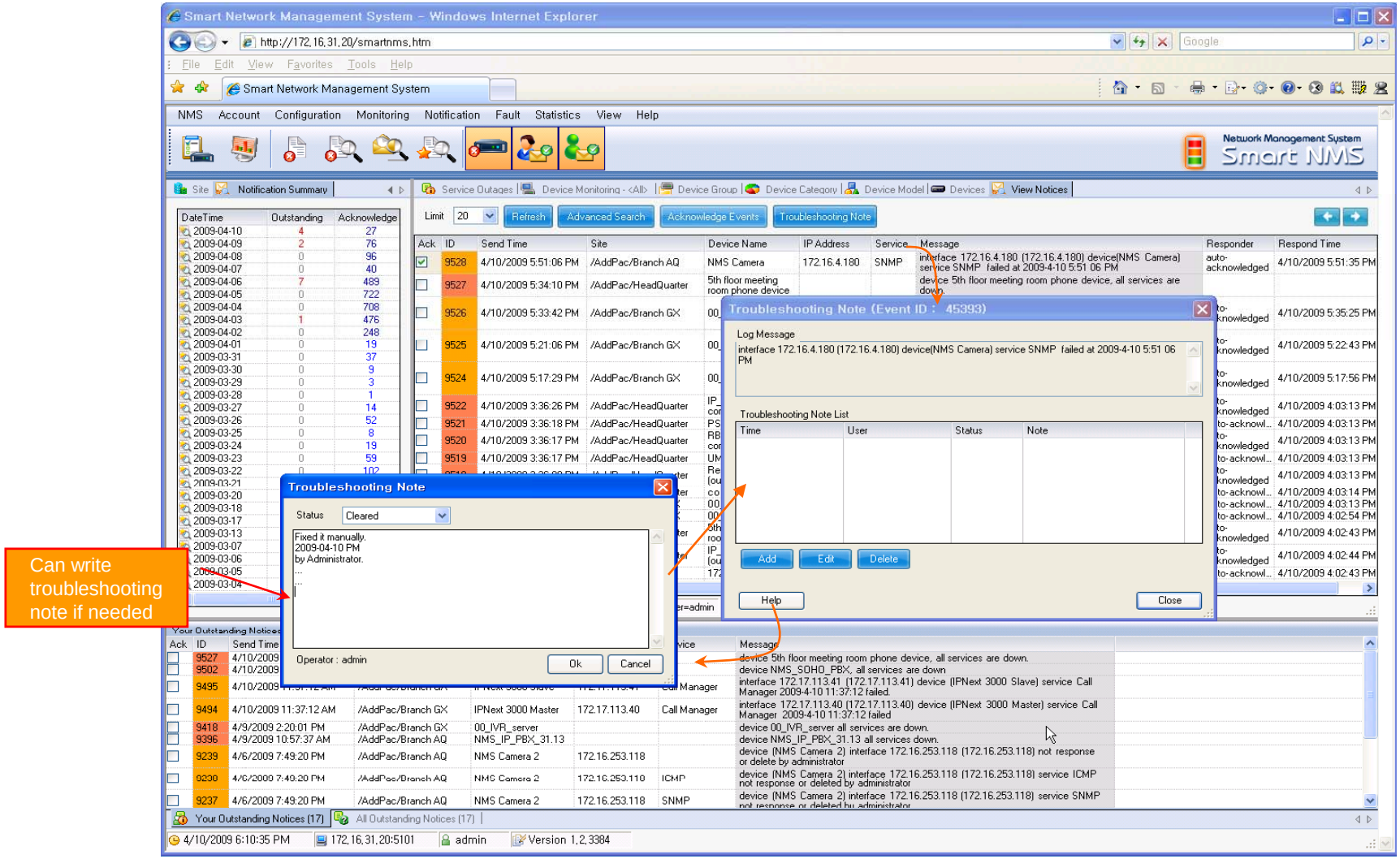
Device Fault History Management

daily fault event summary statistics information

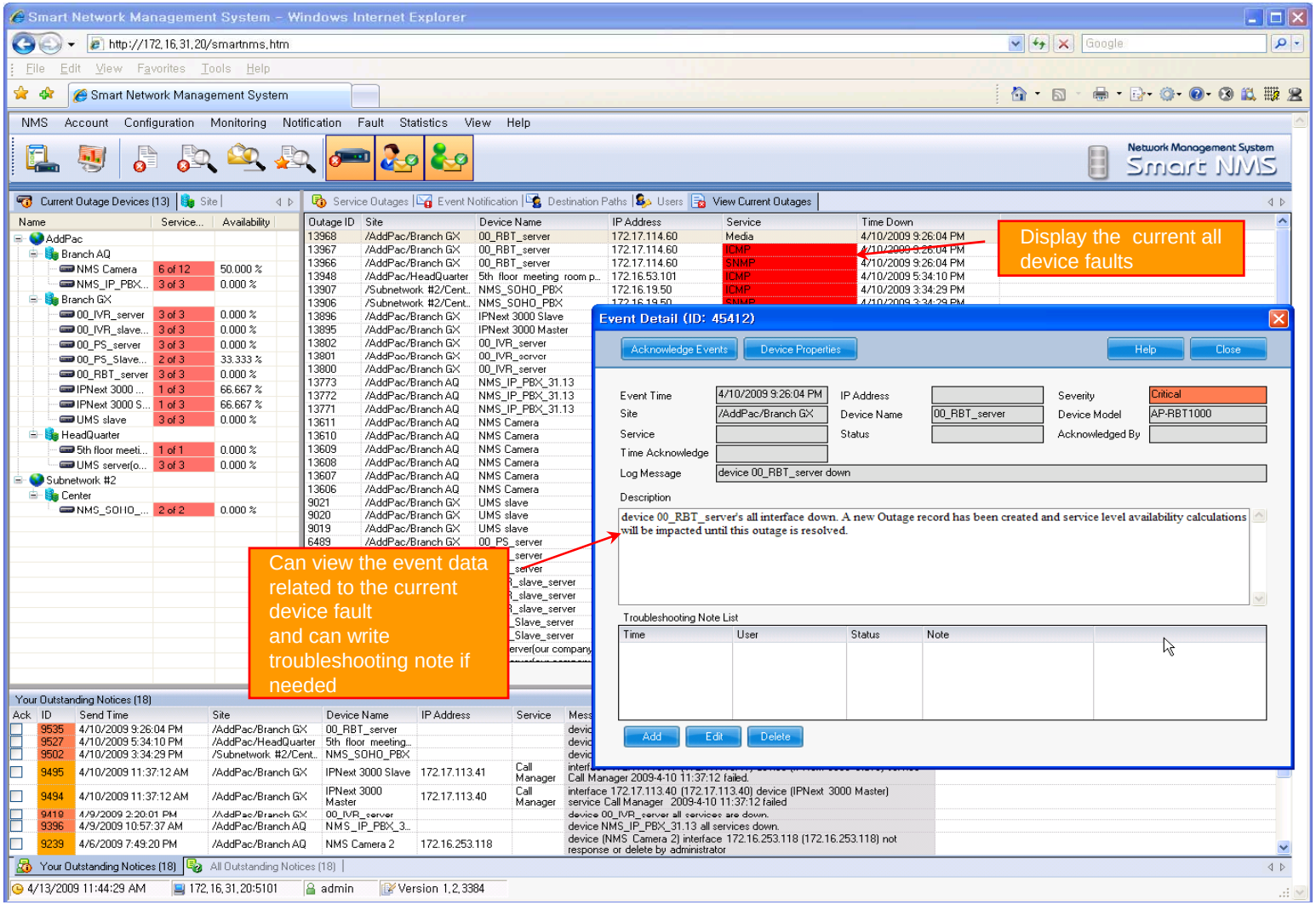
detail fault event history list up with filter condition (advanced search)



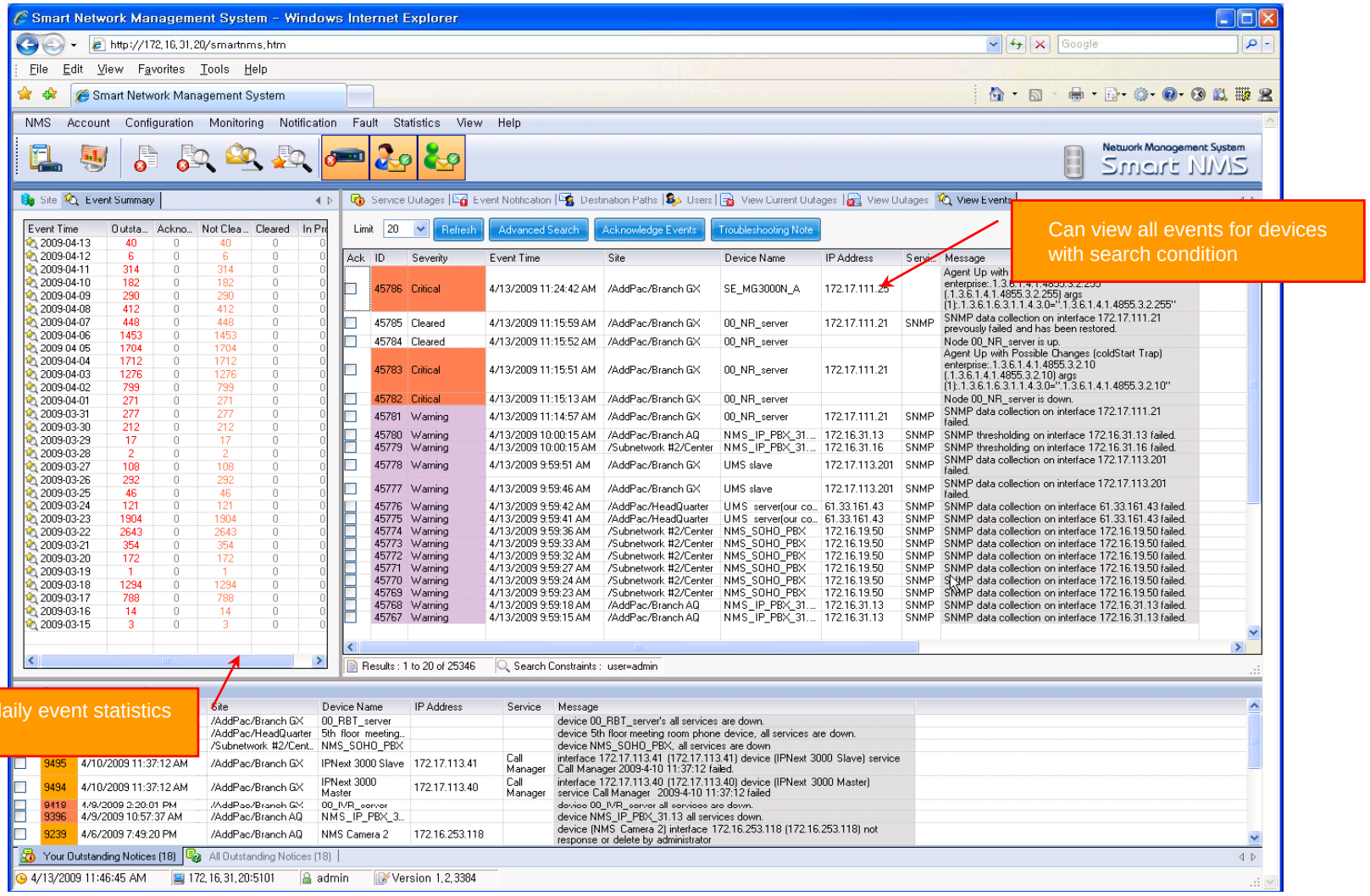
Device Fault History Management



Current Device Fault (Outage)



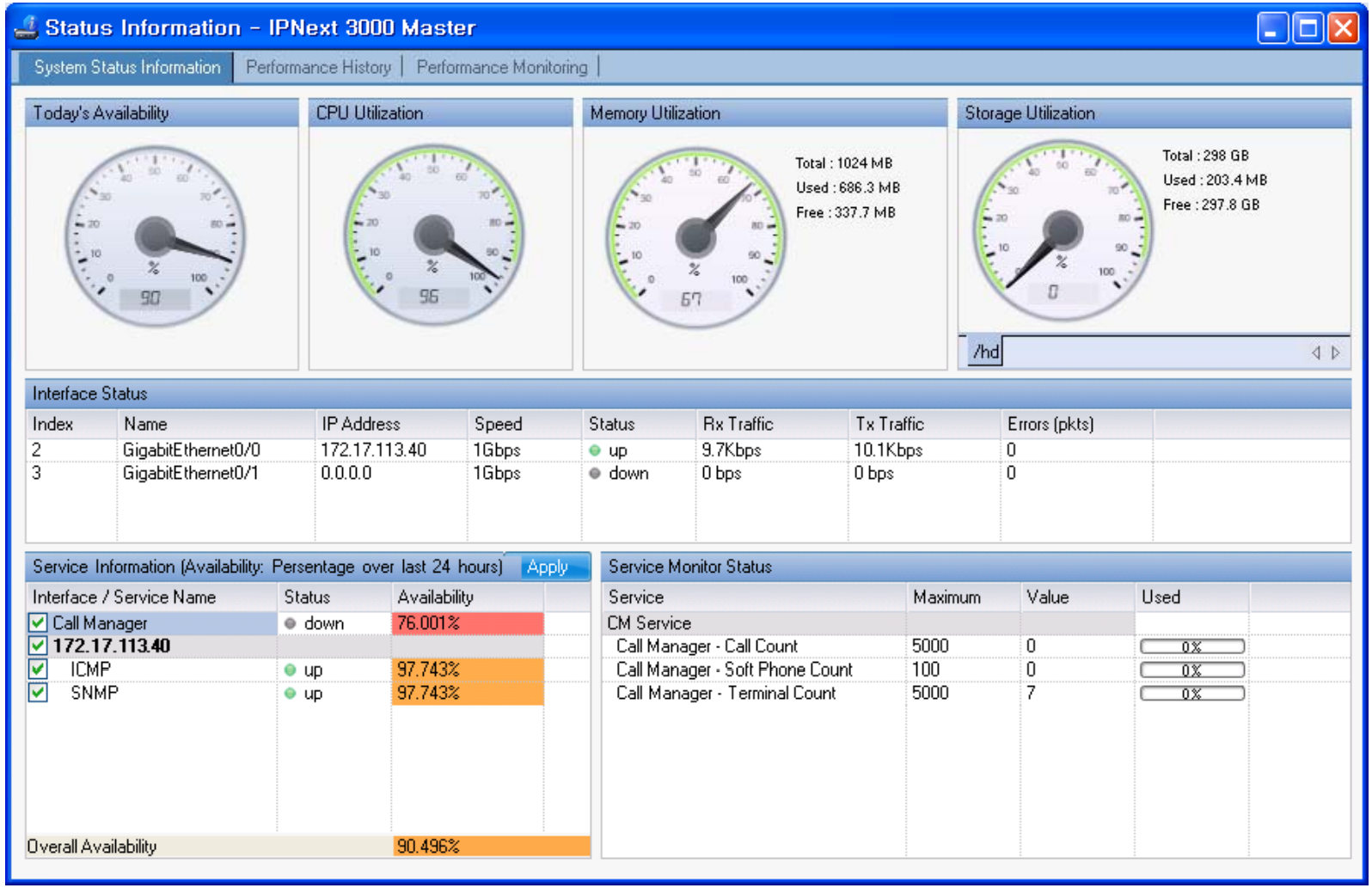
Device Event History



Device Status Information

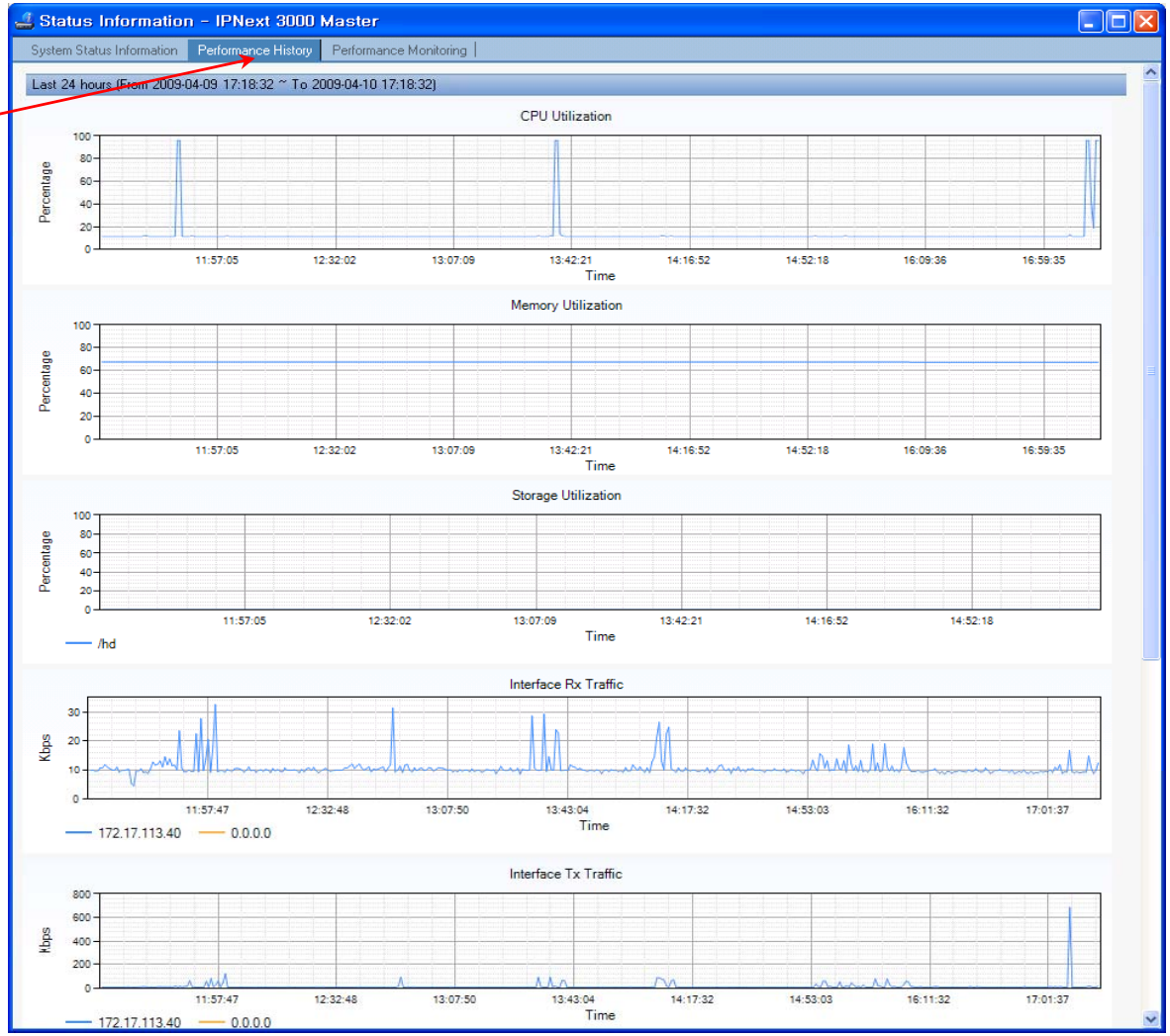
- System Performance Information (CPU, HDD, Memory,…)
- Provide device current service status (up/down)
- Provide device main status (max value vs current value)
- Display Graph Series with System Performance Information
- Monitor Main Status Flow with System Monitoring View

Device Status Information

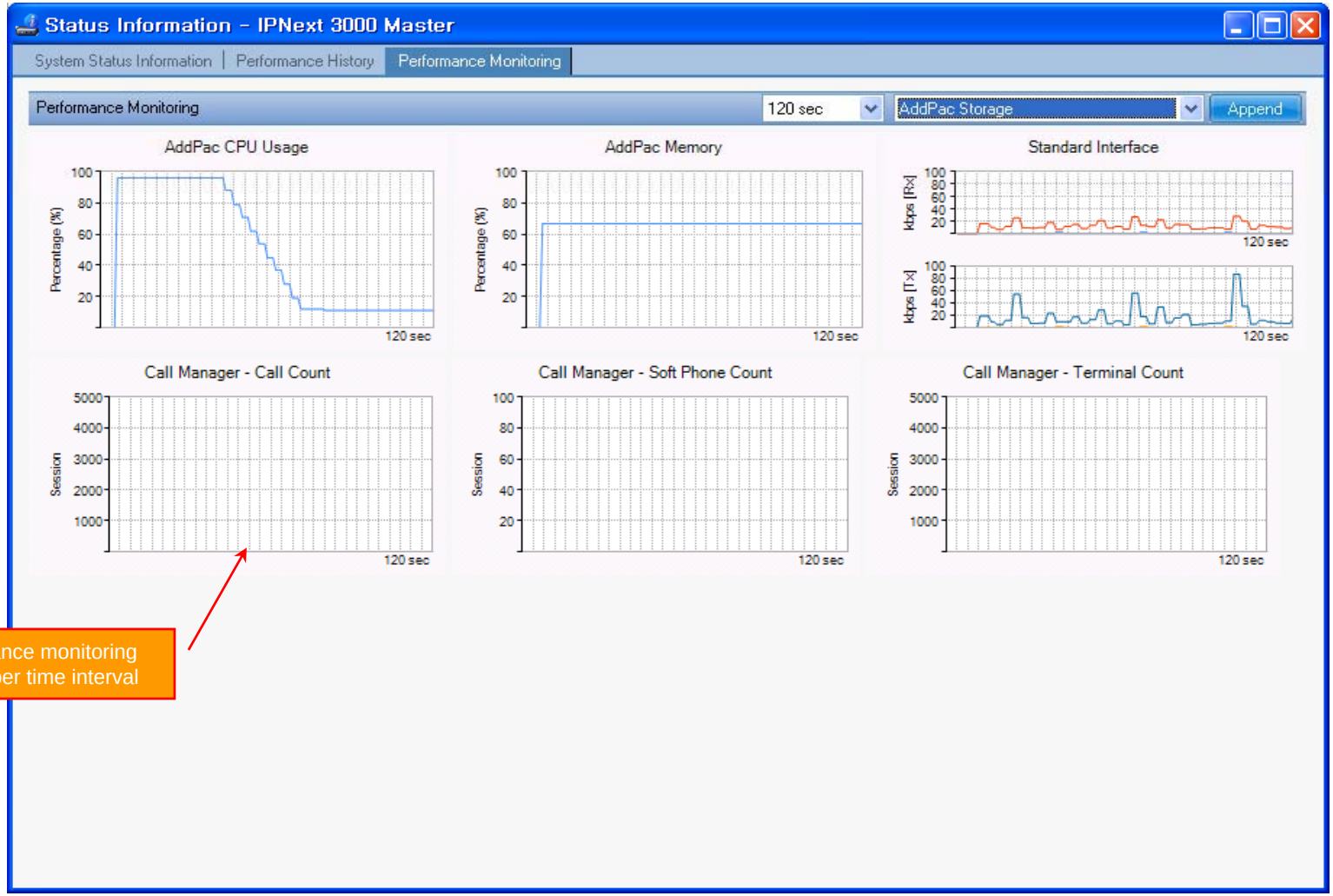


Device Status Information

performance analysis graph for last 24 hours



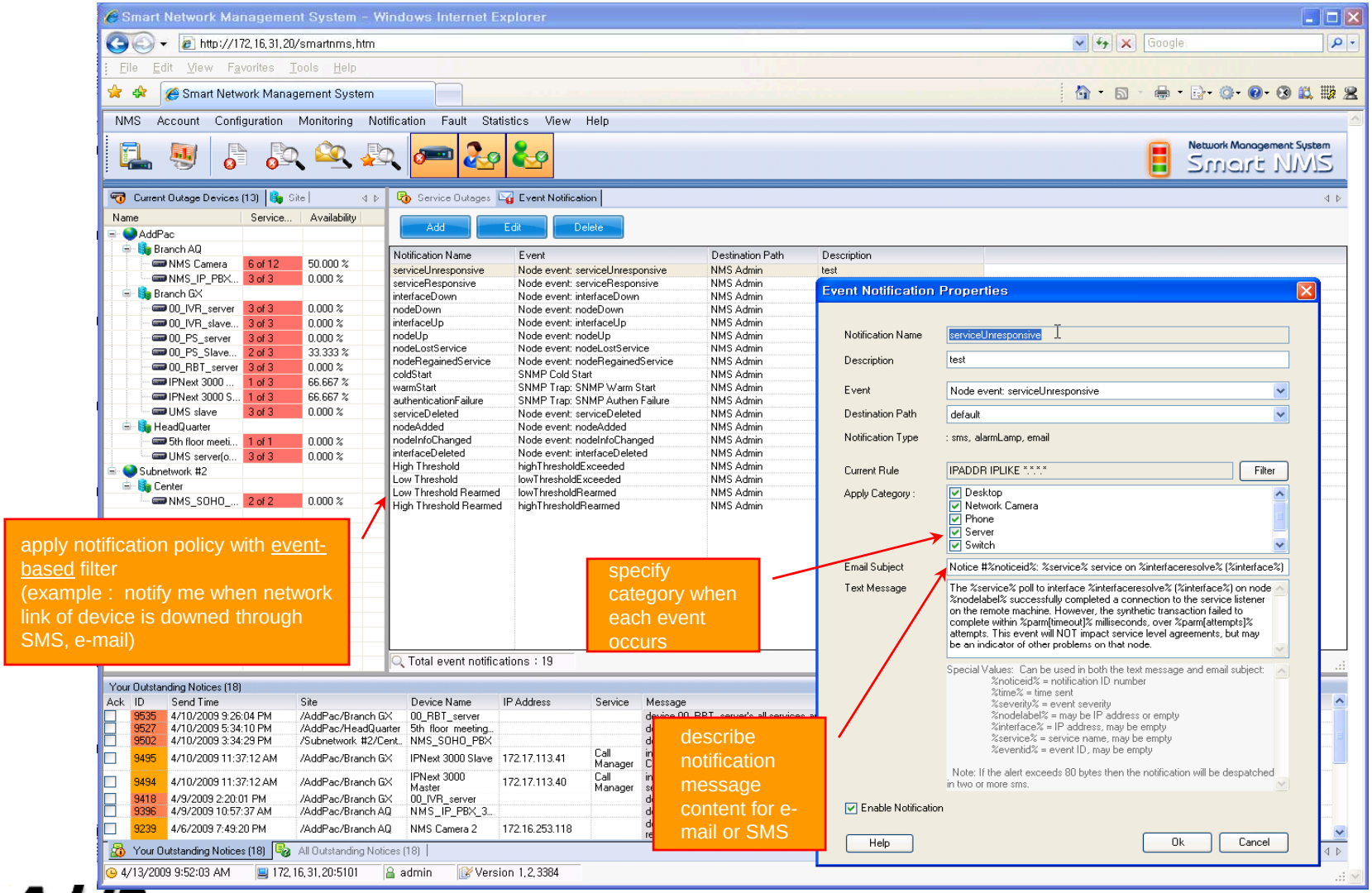
Device Status Information



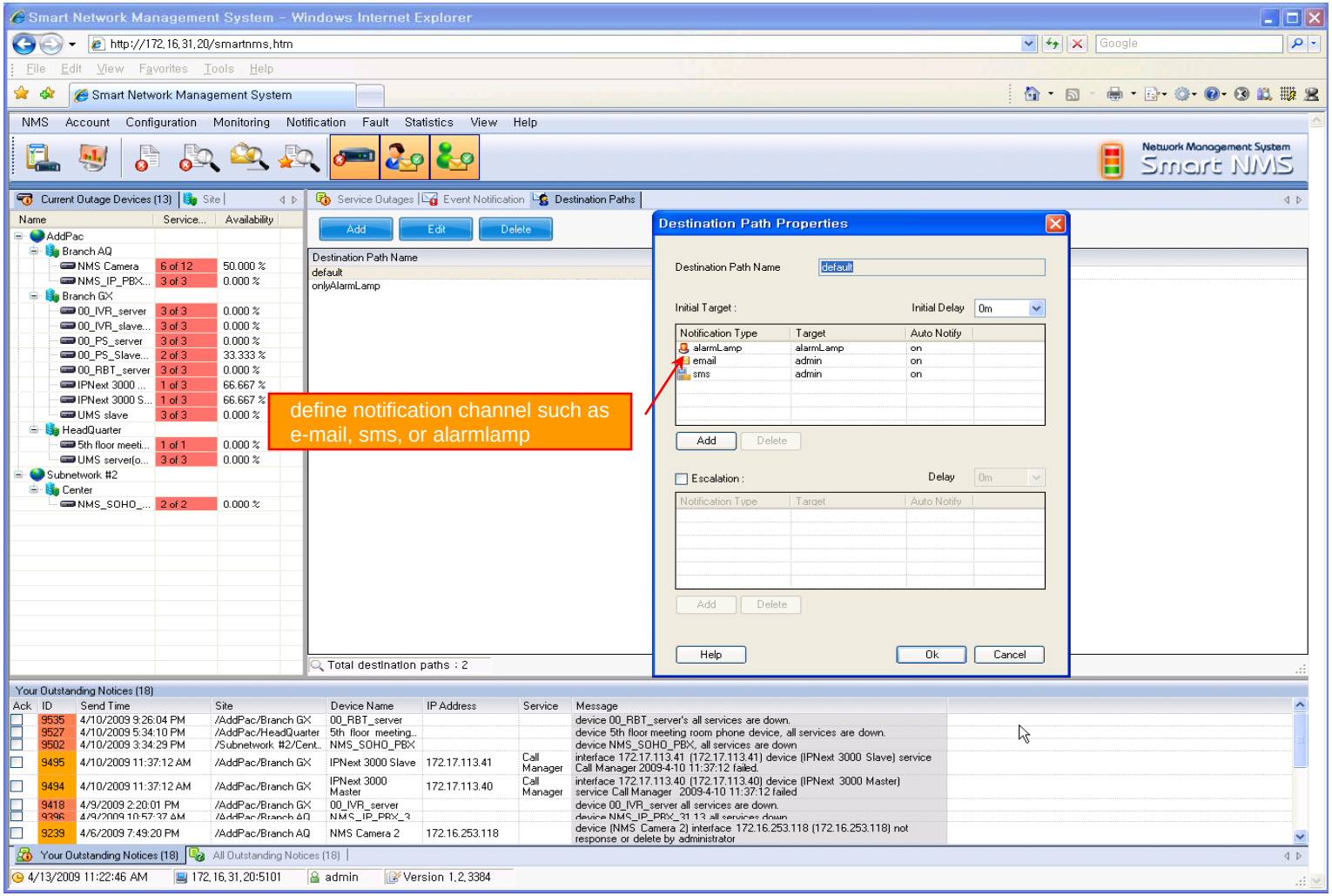
Notification Management

- 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

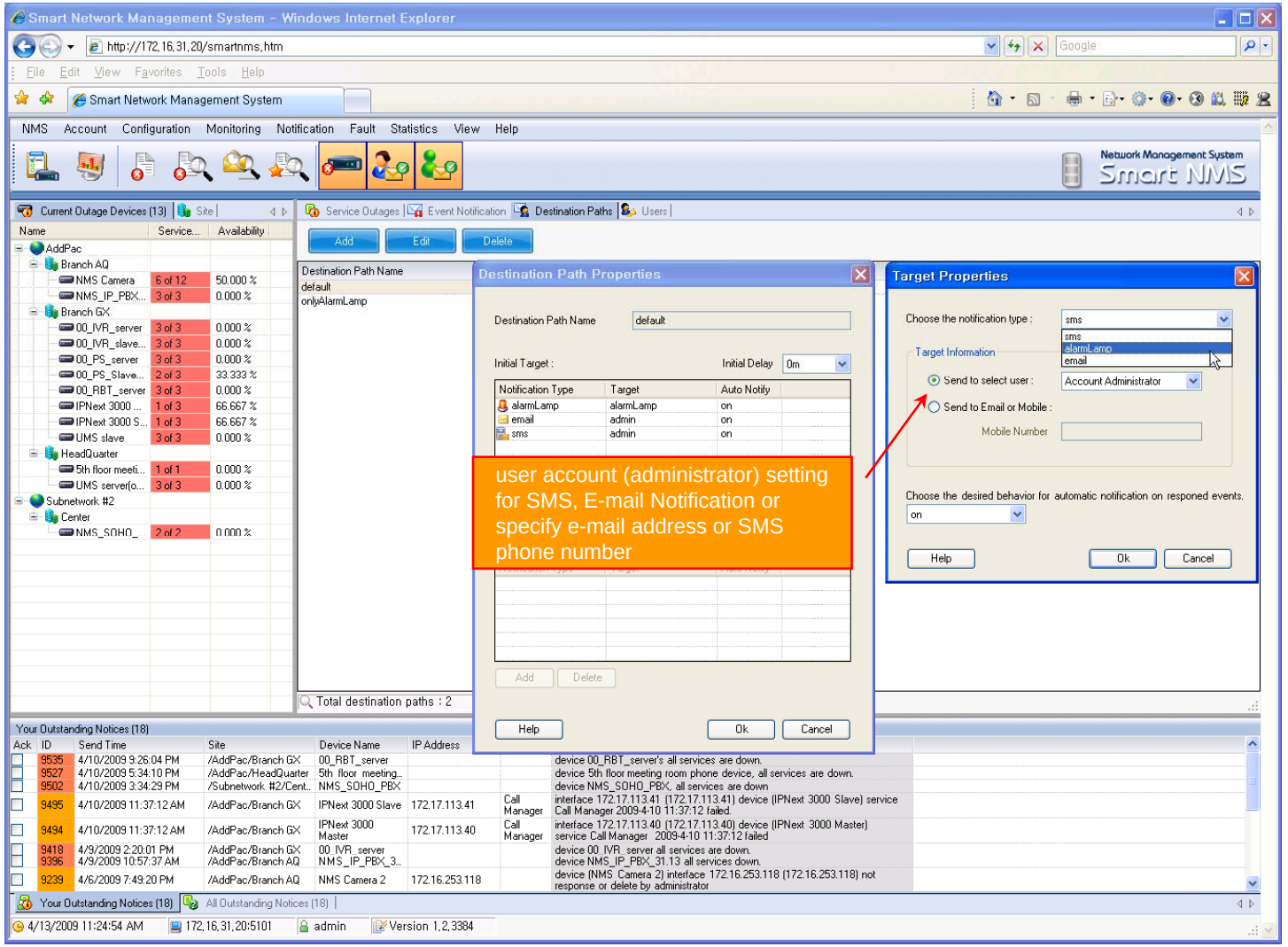
Event Notification Management



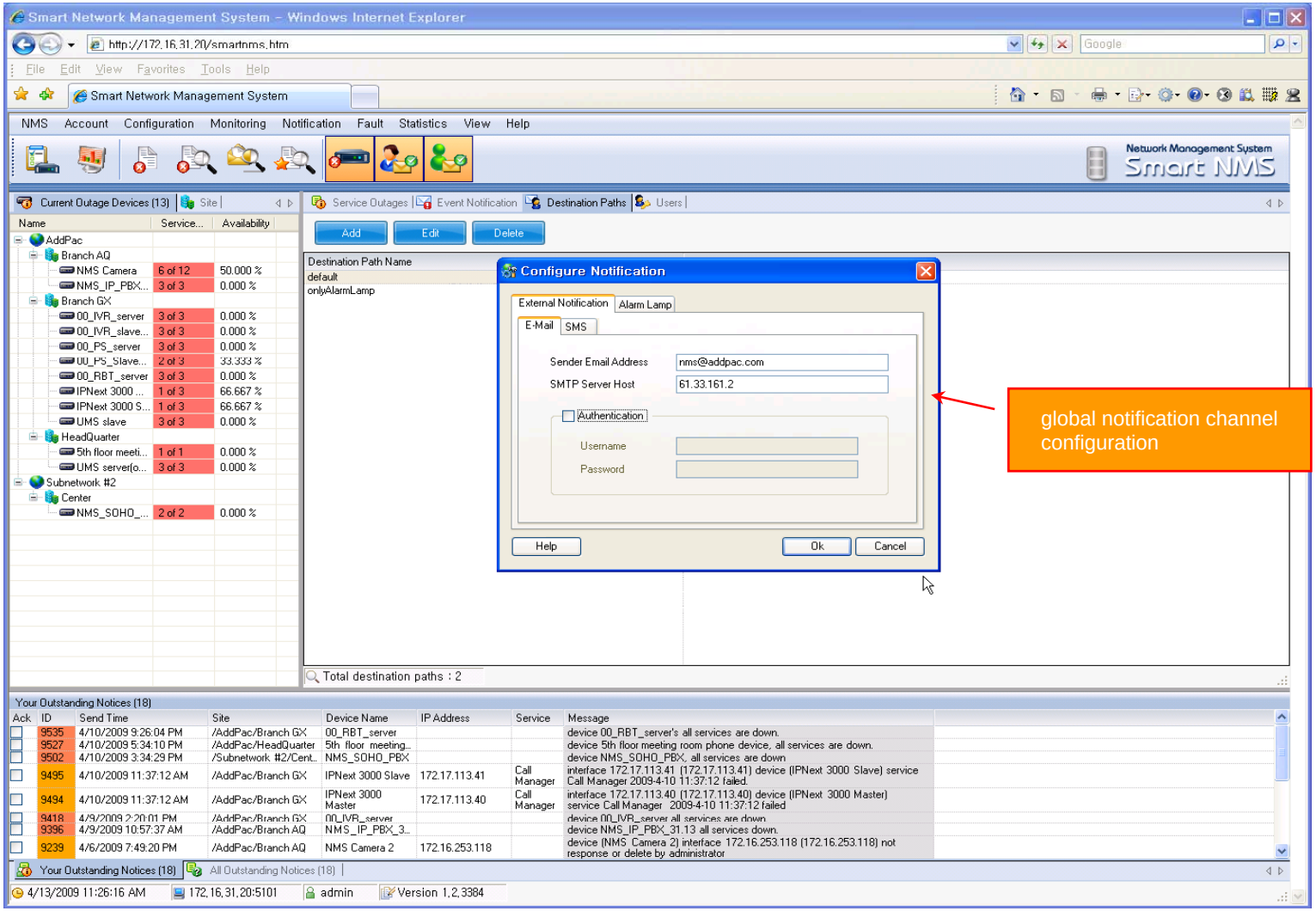
Event Notification Management



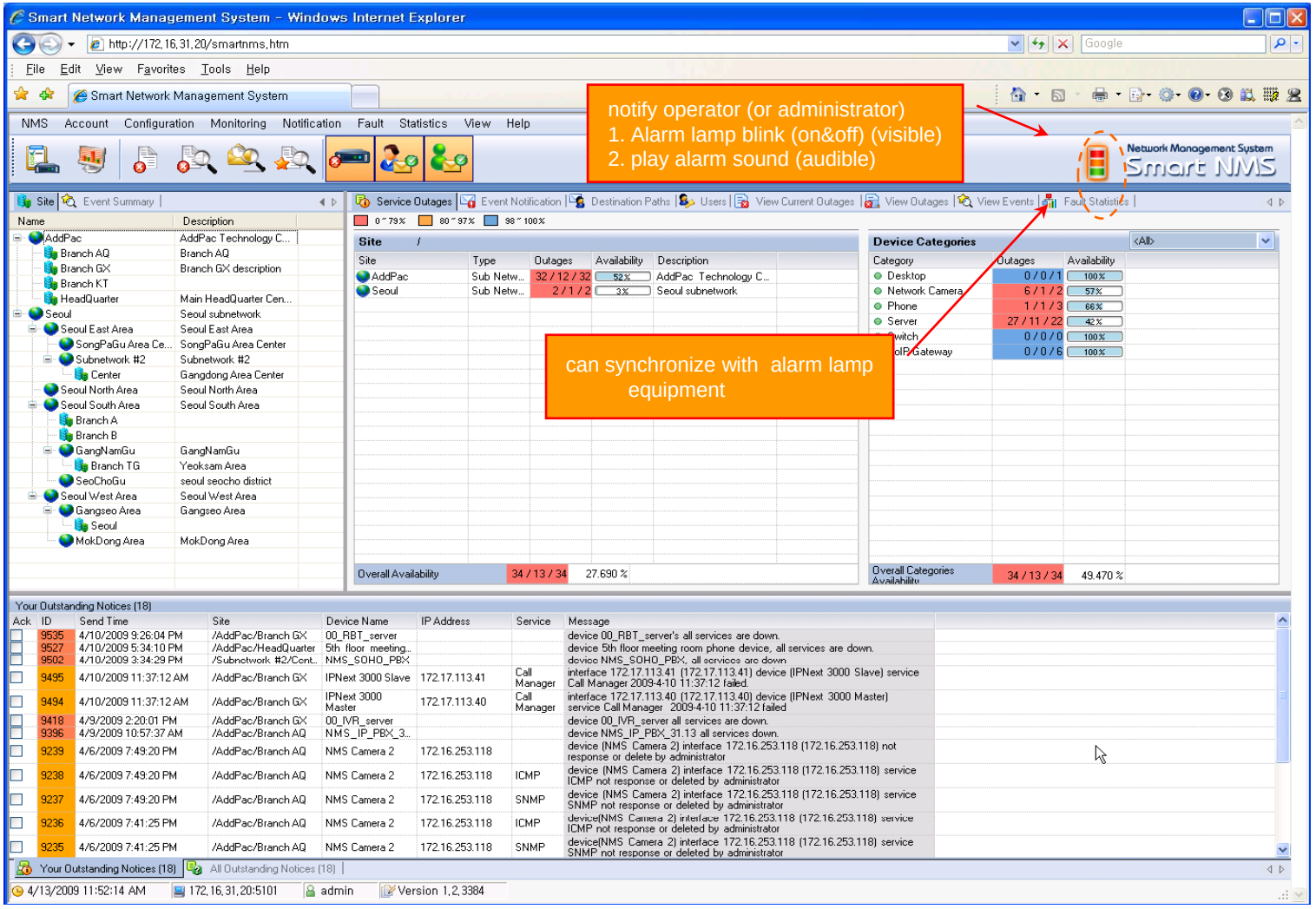
Event Notification Management



Configuration



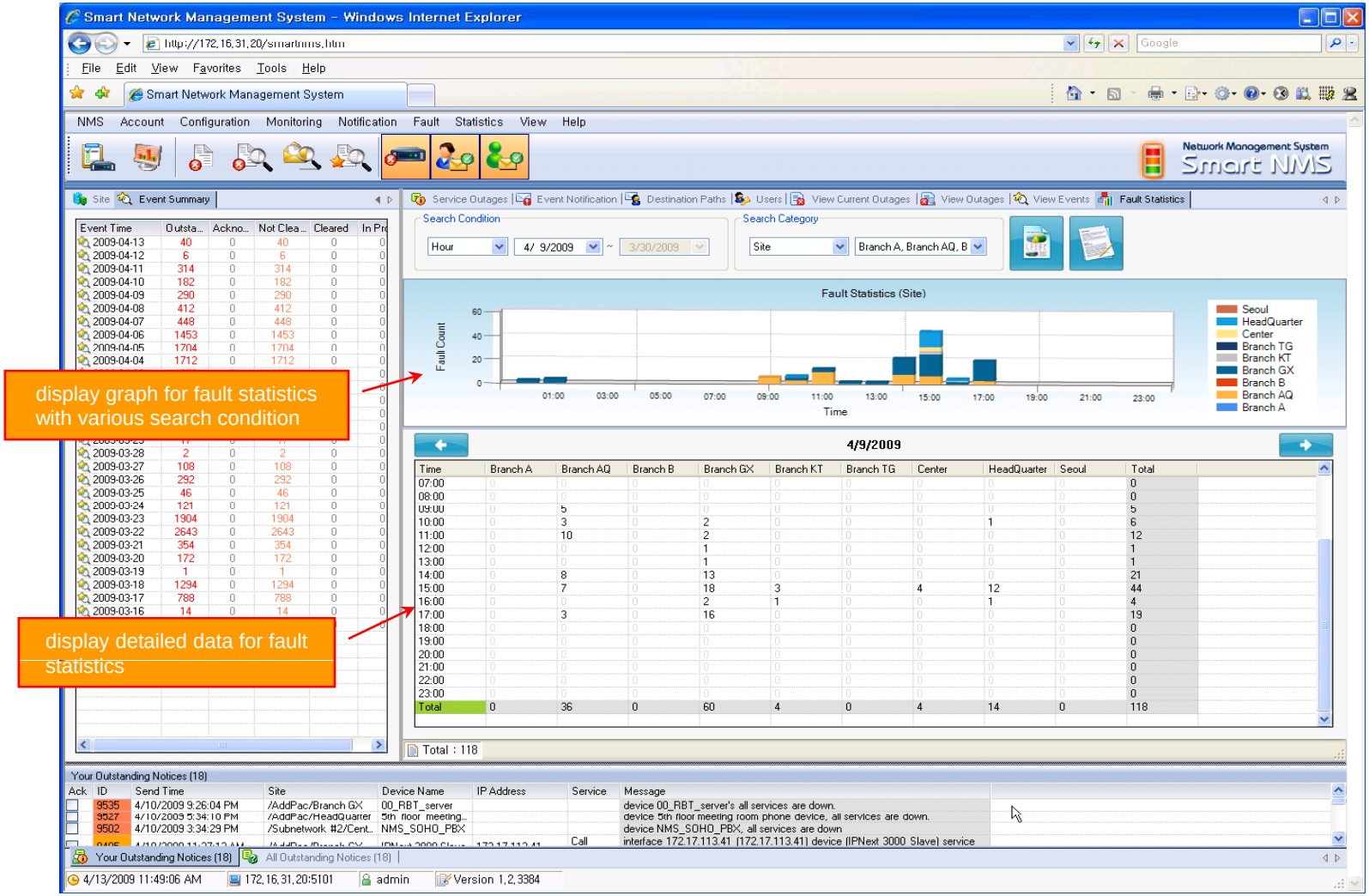
Audible & Visible Alarm



Fault Statistics

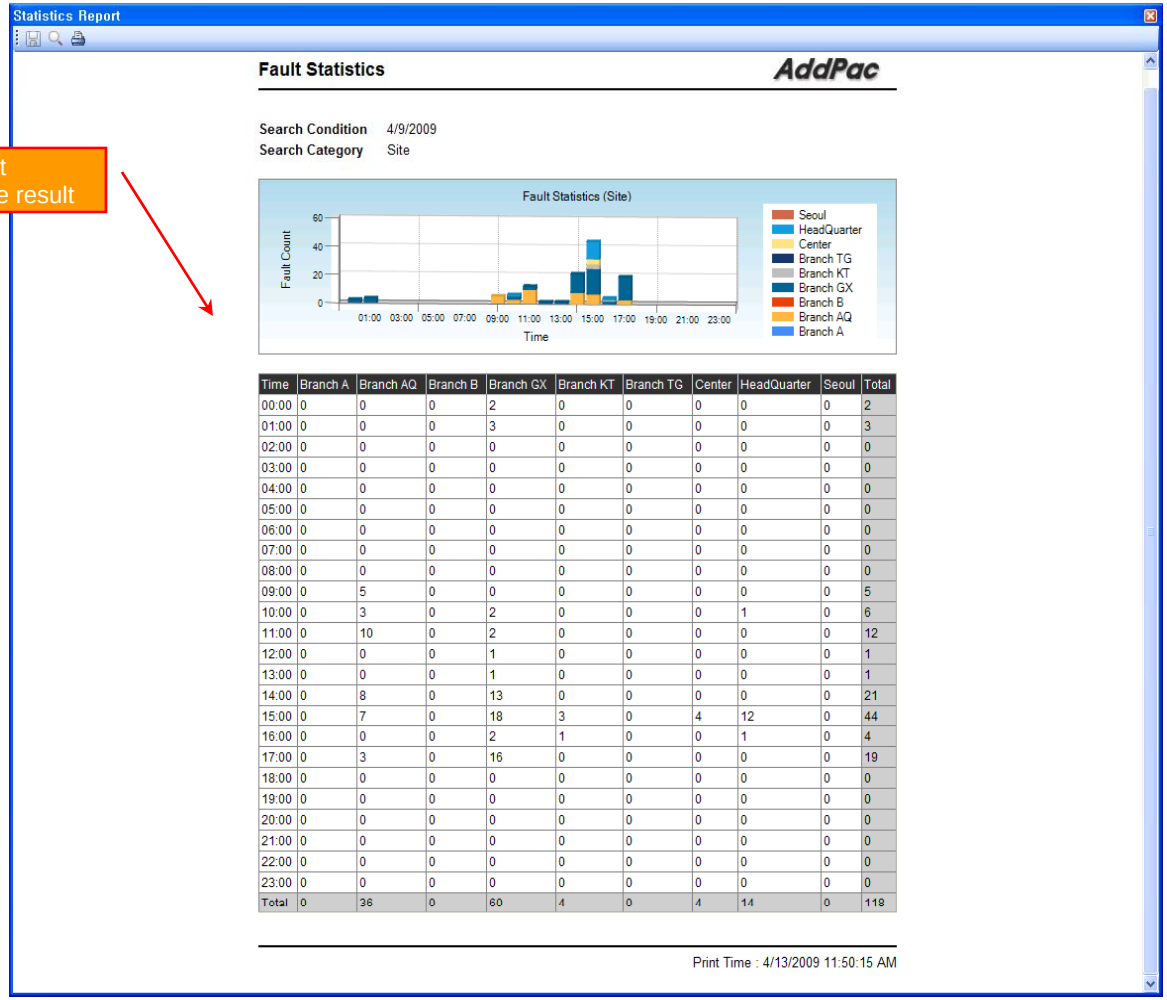
- analyze for a fault event with graph and detailed list data
- Report form generation and print out for statistics result

Fault Statistics



Fault Statistics – Report Generation

report generation for fault statistics and print out the result



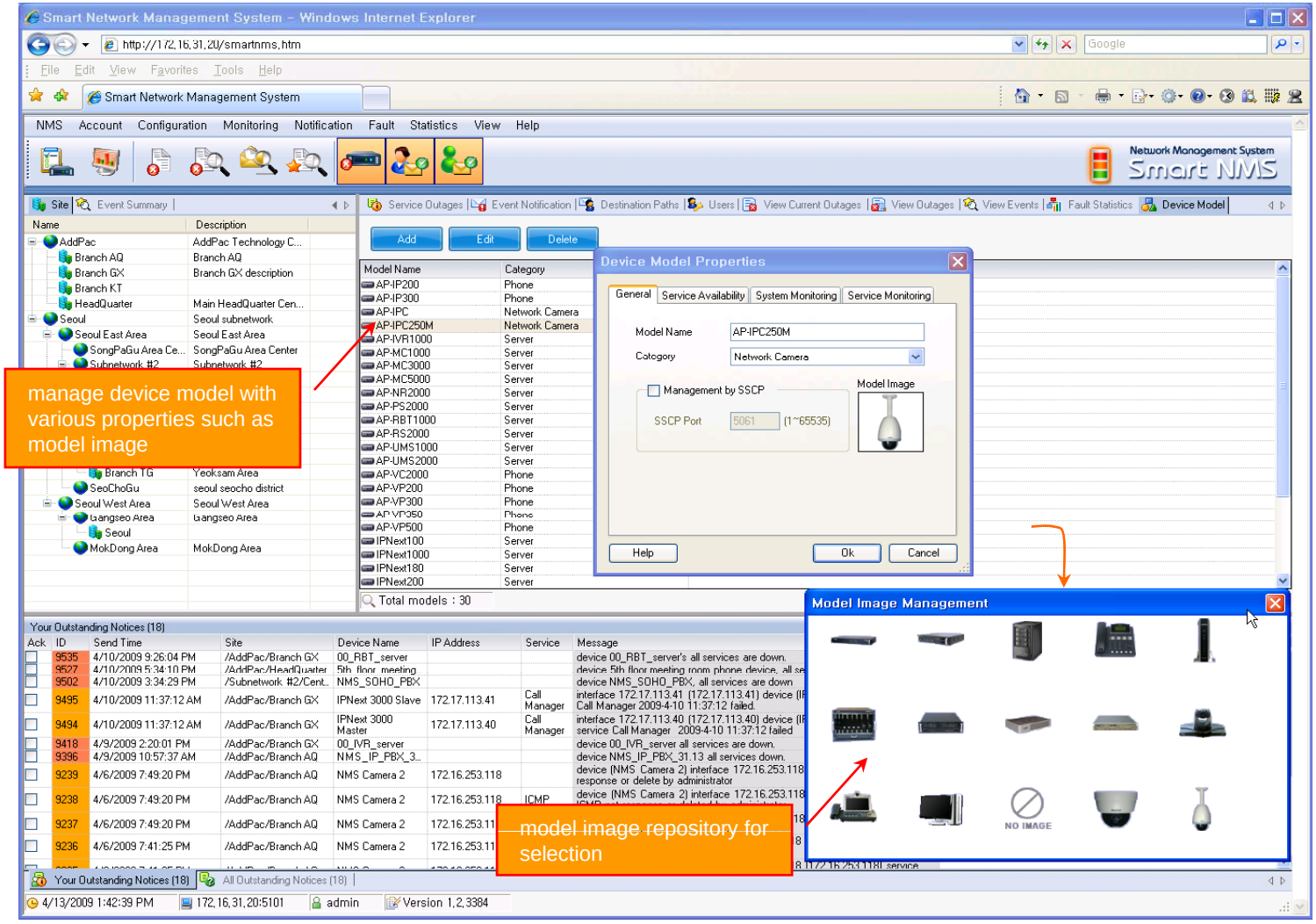
Time	Branch A	Branch AQ	Branch B	Branch GX	Branch KT	Branch TG	Center	HeadQuarter	Seoul	Total
00:00	0	0	0	2	0	0	0	0	0	2
01:00	0	0	0	3	0	0	0	0	0	3
02:00	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0
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

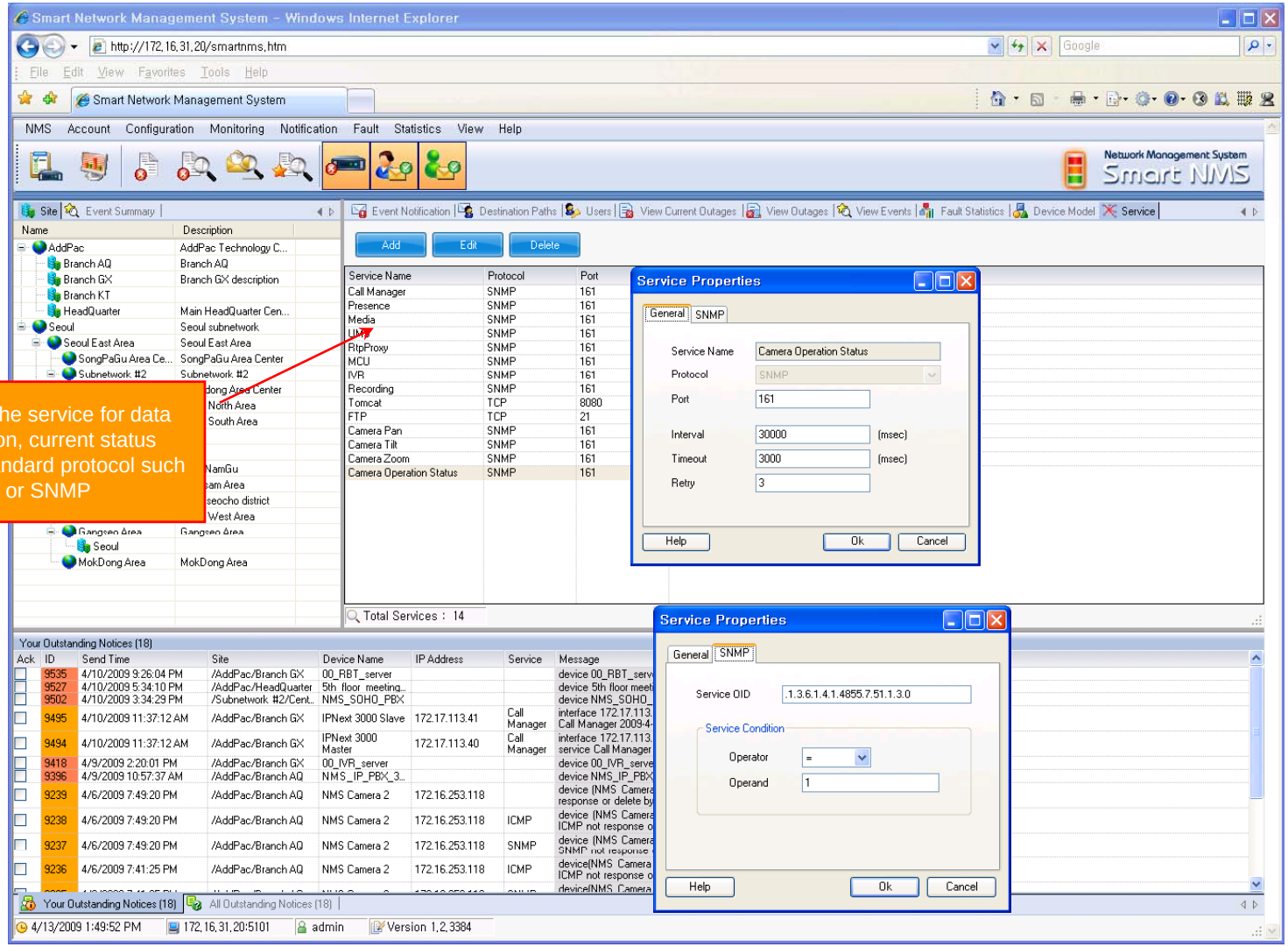
Model & Service Management

- 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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