

Large Scale VoIP Gateway Solution



AddPac

AddPac Technology





Sales and Marketing

www.addpac.com

Contents

- VoIP Gateway Service Diagram
- VoIP Gateway Comparison Table
 - Large Capacity Analog VoIP Gateways(~256 Port)
- VoIP Modules for Rack Mountable Equipment
- AddPac VoIP Gateway Service Features
- AddPac VoIP Gateway Management

Large Capacity VoIP Gateways

| Product | AP3100P | AP6200 | AP6500 | AP6800 |
|-----------------------------|---|--|---|---|
| |  |  |  |  |
| Available VoIP Modules | AP-FXS4, AP-FXO4 AP-FXS2O2, AP-E&M4 | AP-N1-FXS8, AP-N1-FXO8, AP-N1-E&M4, AP-N1-FXS4O4, AP-N1-E1/T1, AP-N1-2E1/T1 | AP-N1-FXS32 AP-N1-FXO32 | AP-N1-FXS32 AP-N1-FXO32 |
| Analog Ports | Up to 60 (4-Port Module x 15) | Up to 80 (8-Port Module x 10) | Up to 128 (32-Port Module x 4) | Up to 256 (32-Port Module x 8) |
| Signaling | SIP, H.323 | SIP, H.323 | SIP, H.323 | SIP, H.323 |
| CPU Redundancy (Dual CPU) | N/A | N/A | Support (Option) | Support (Option) |
| E&M | Support | Support | N/A | N/A |
| Module Slot for VoIP Module | 15 Slots | 10 Slots | 4 Slots | 8 Slots |
| LAN Port | 2 | 2 | 2 | 2 |
| Console | 1 | 1 | 1 | 1 |
| Dual Power Supply (Option) | Support | Support | Support | Support |








VoIP Modules



Target :
AP3100P

VoIP Modules

DSP






| Target | VoIP Modules | Module Features | Module Picture |
|---------|--------------------|------------------------------|---|
| AP3100P | AP-FXS4 | 4-Port FXS Module |  |
| AP3100P | AP-FXO4 | 4-Port FXO Module |  |
| AP3100P | AP-FXS2O2 | 2-Port FXS&2-Port FXO Module |  |
| AP3100P | AP-E&M4 | 4-Port E&M Module |  |
| AP3100P | AP-FXS3O1 | 3-Port FXS&1-Port FXO Module |  |



Target :
AP6200

VoIP Modules

DSP



| Target | VoIP Modules | Module Features | Module Picture |
|----------------------------|---------------------|------------------------------|---|
| AP1800 AP2330 AP2340 | AP-N1-FXS8 | 8-Port FXS Module |  |
| AP1800 AP2330 AP2340 | AP-N1-FXO8 | 8-Port FXO Module |  |
| AP1800 AP2330 AP2340 | AP-N1-FXS4O4 | 4-Port FXS&4-Port FXO Module |  |
| AP1800 AP1850 | AP-N1-E1 | 1-Port Digital E1/T1 Module |  |
| AP1800 AP1850 | AP-N1-2E1 | 2-Port Digital E1/T1 Module |  |



Target :
AP6500, AP6800

VoIP Modules

DSP

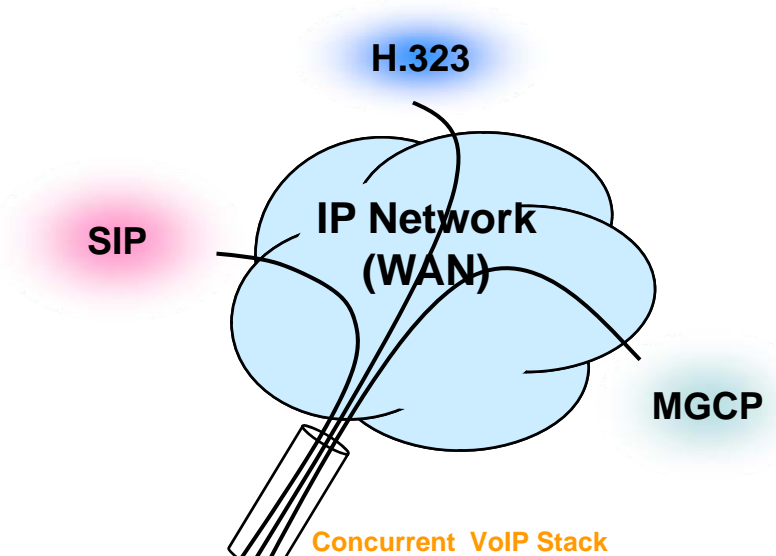
| Target | VoIP Modules | Module Features | Module Picture |
|------------------|--------------------|--------------------|---|
| AP6500 AP6800 | AP-N1-FXS32 | 32-Port FXS Module |  |
| AP6500 AP6800 | AP-N1-FXO32 | 32-Port FXO Module |  |



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**

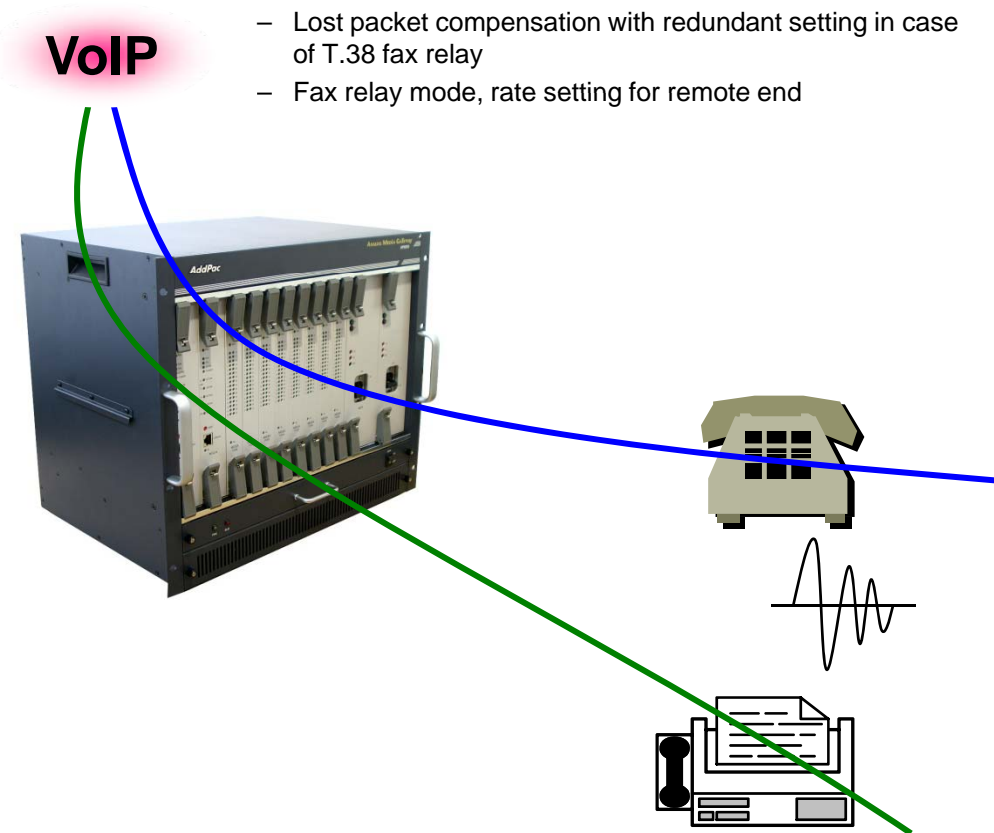
- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP, MGCP common) based on RFC2833

- **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



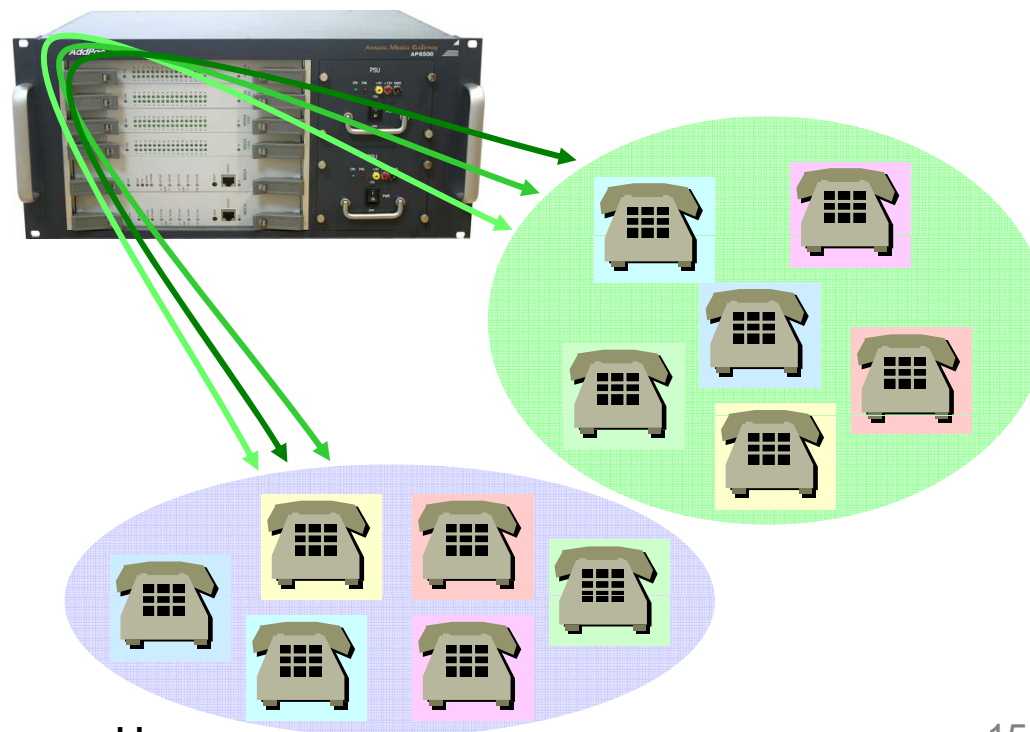
VoIP (Voice over IP) Service

• 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, MGCP 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



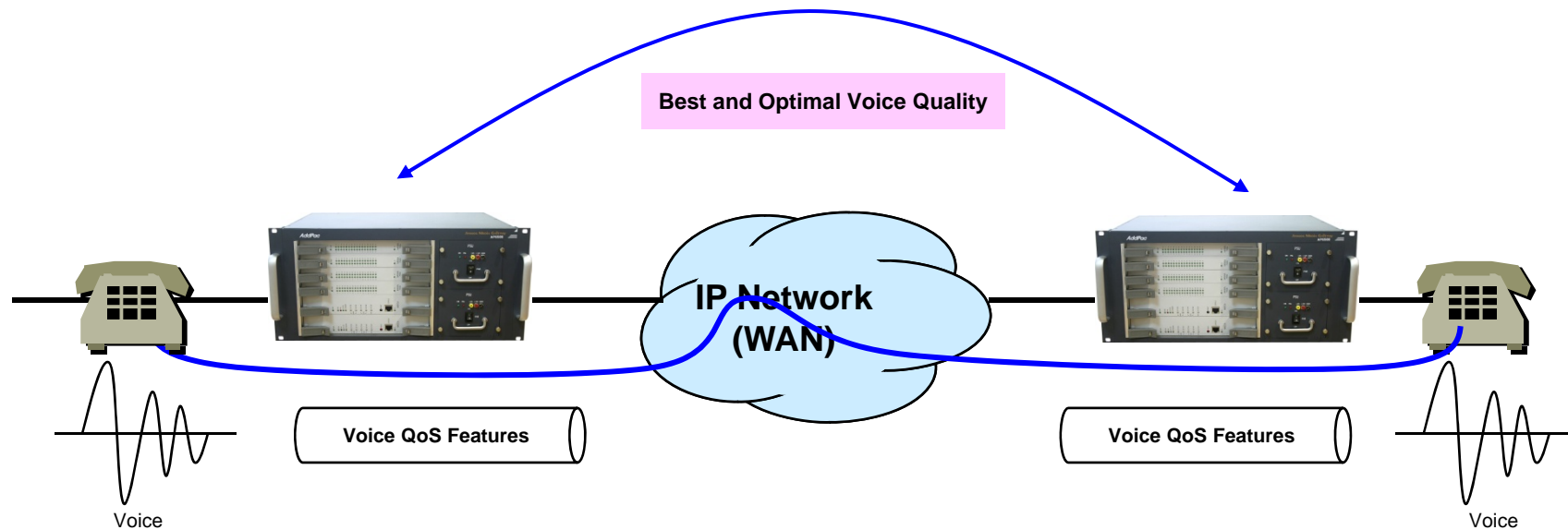
Advanced QoS Features

- **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**

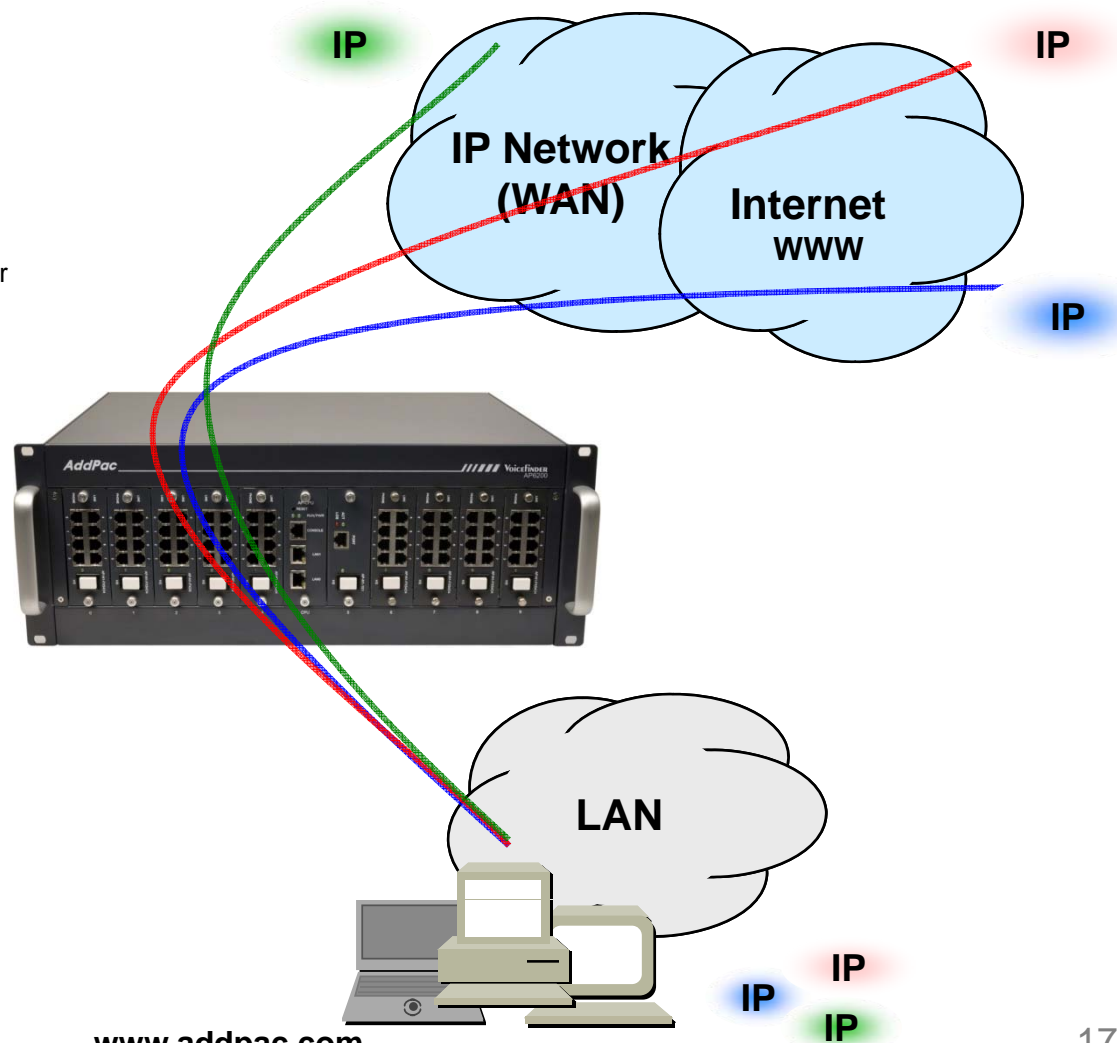
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

- **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**

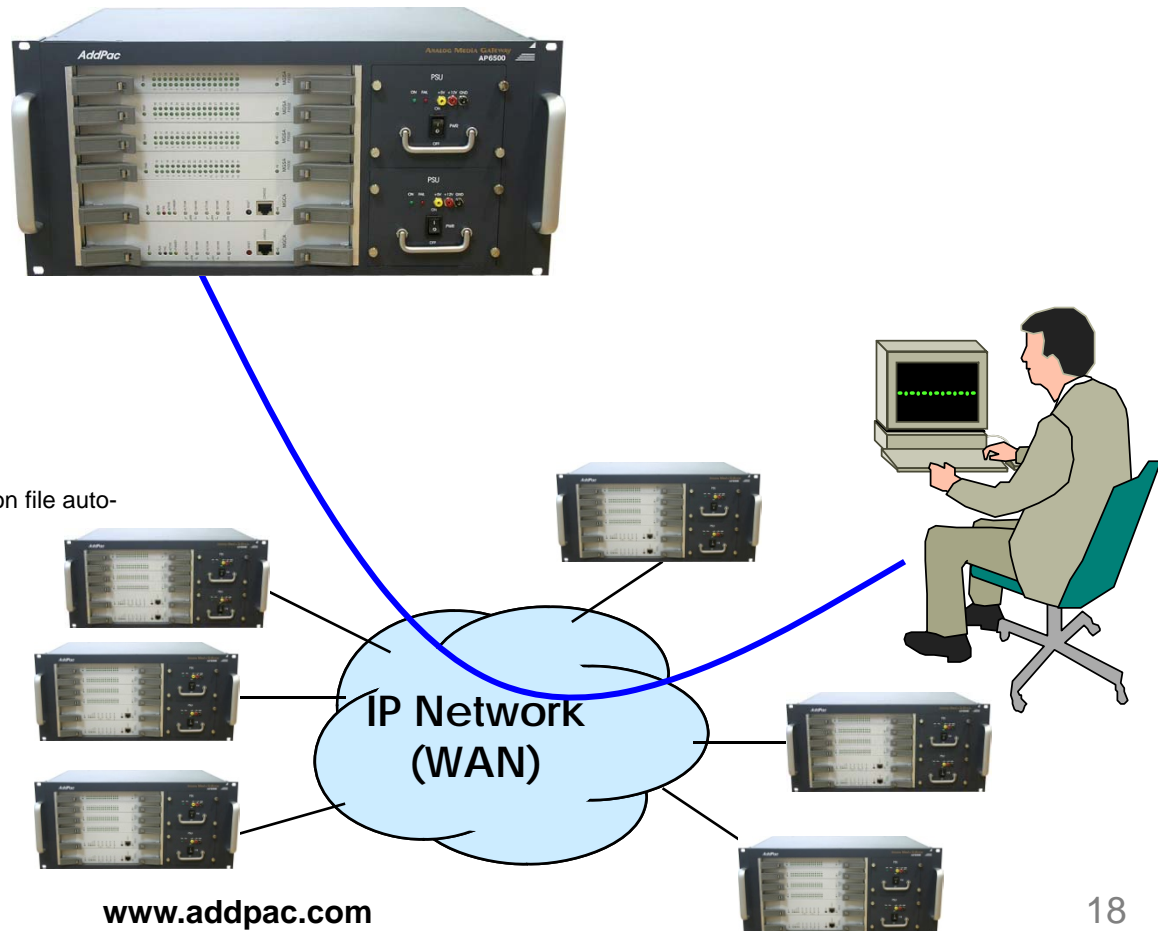
- HTTP server based APOS image and configuration file auto-upgrade support

- **Batch Job Function**

- Text based script downloading

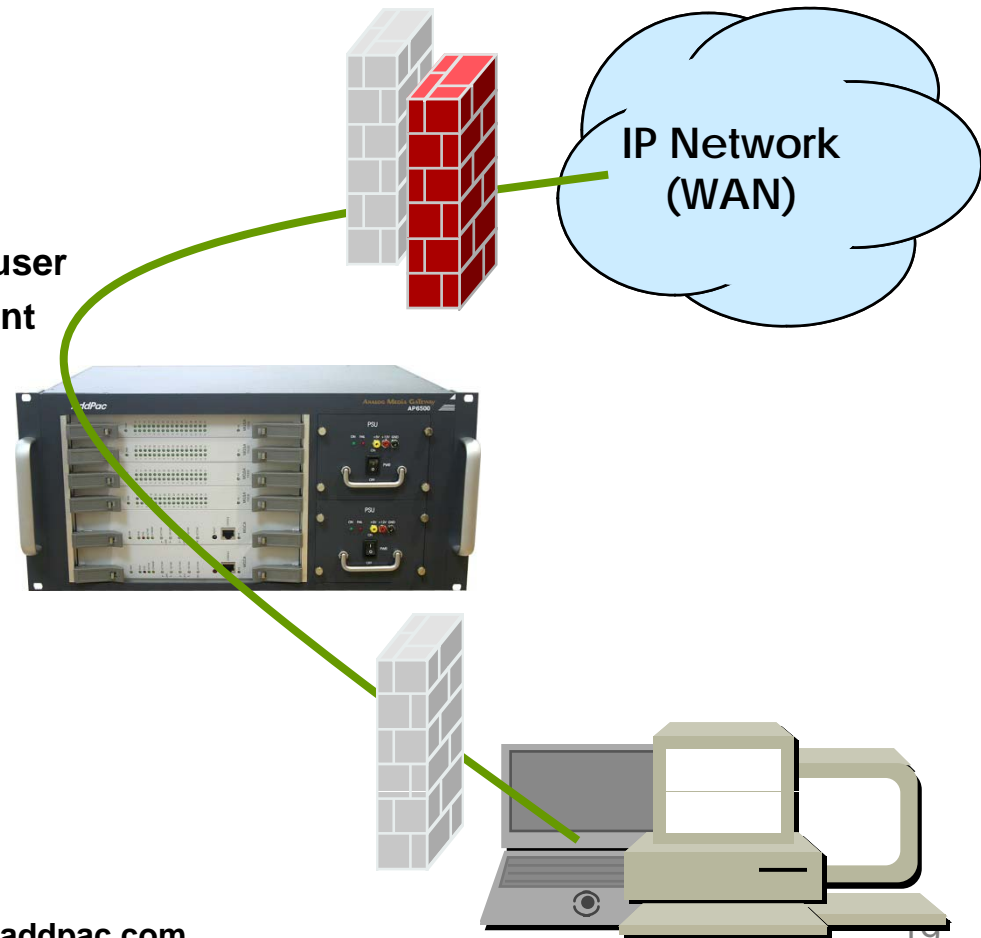
- **Interoperable with AP-VPMS Service**

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



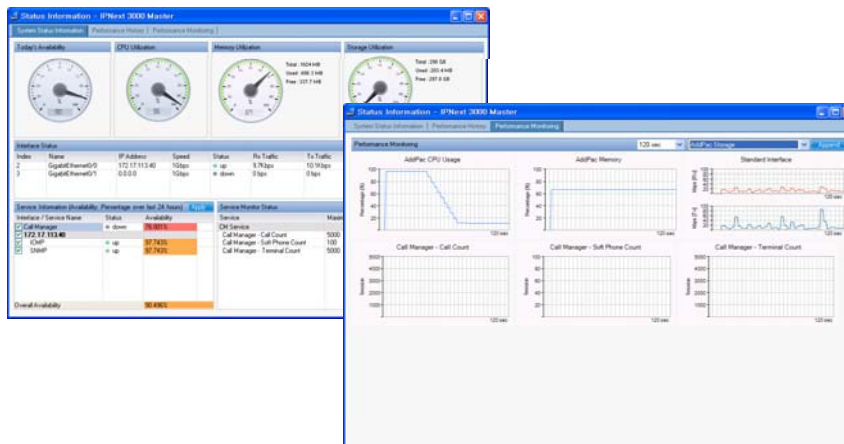
Security Management

- 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



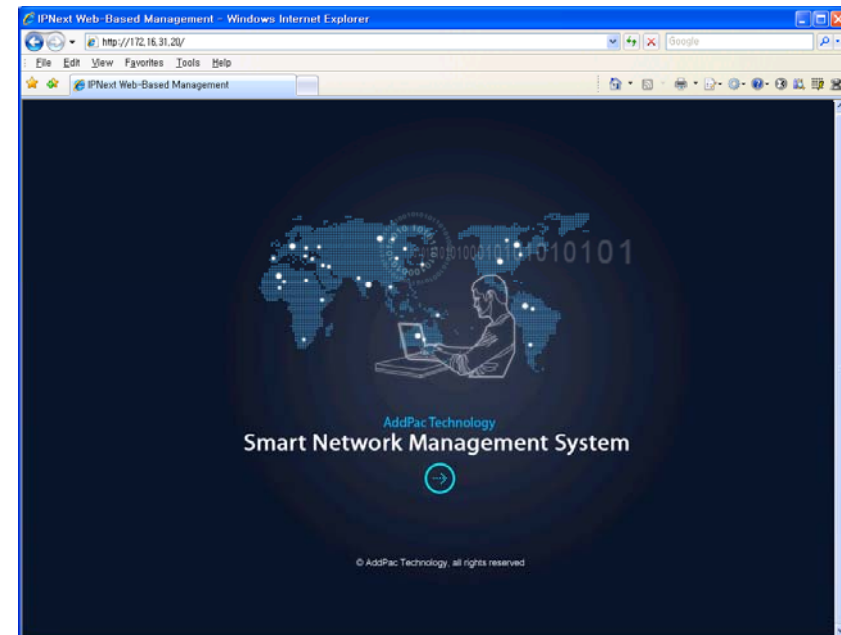
Smart NMS

Smart Network Management System for VoIP 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

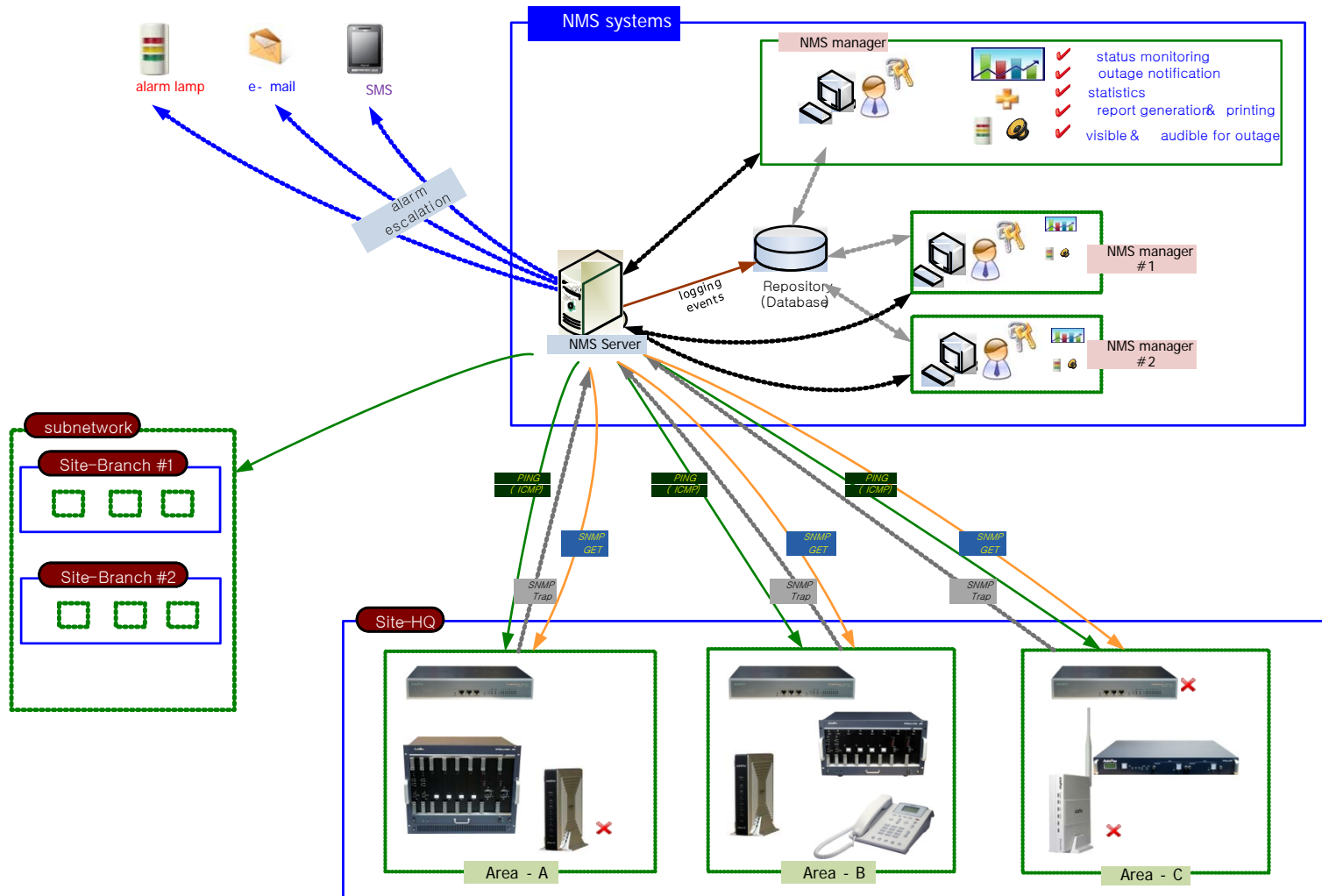
NMS Server

- 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

The screenshot displays the IPNext Web-Based Management interface in a Windows Internet Explorer browser window. The browser address bar shows the URL `http://172.16.31.20/`. The main content area features a dark blue background with a world map and a person using a laptop. The text "AddPac Technology Smart Network Management System" is prominently displayed. A copyright notice at the bottom reads "© AddPac Technology, all rights reserved".

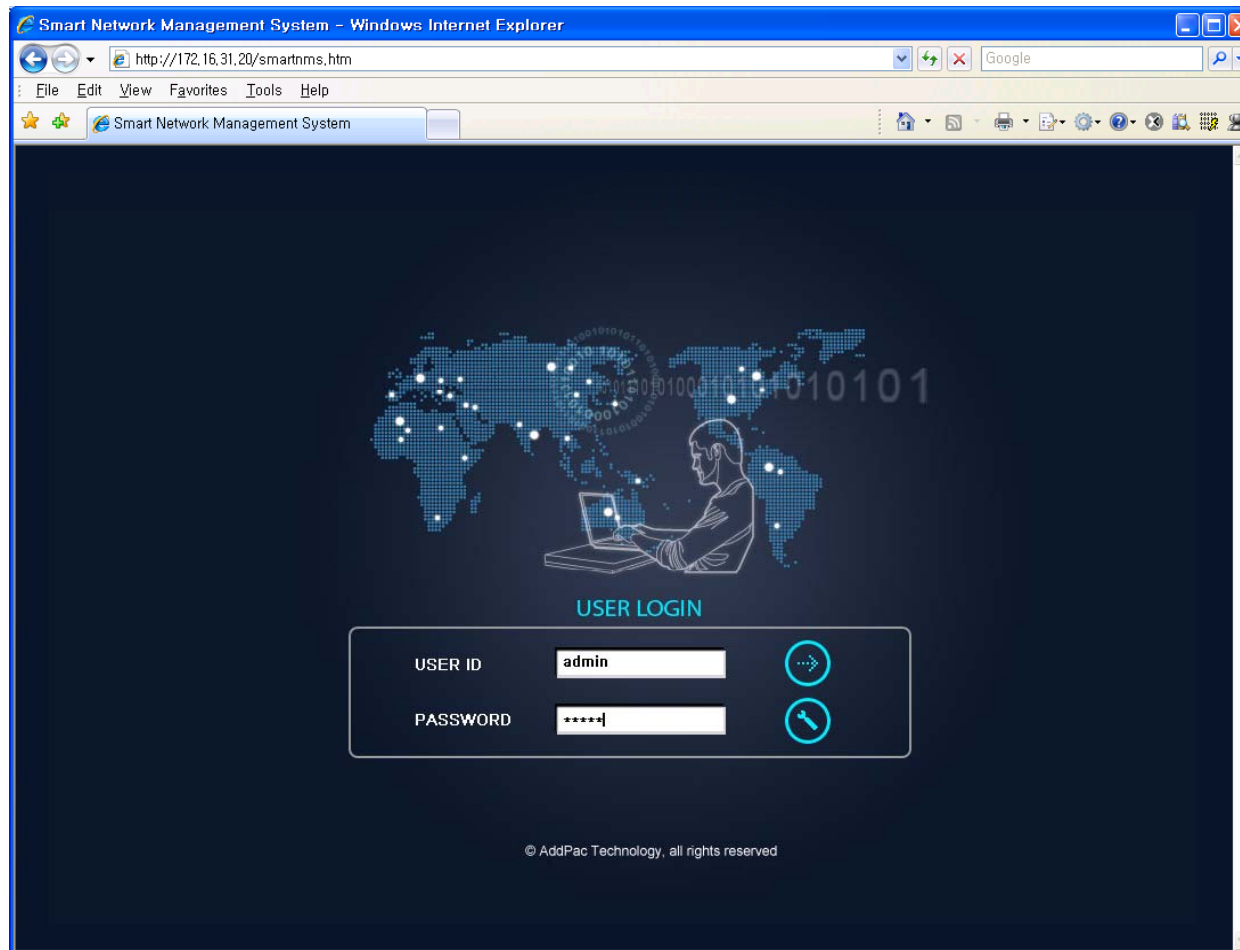
Two callout boxes highlight specific features:

- Automatic version check:** A yellow box with an arrow pointing to the top of the main interface.
- New S/W version update:** A yellow box with an arrow pointing to the bottom of the main interface.

Two Windows dialog boxes are overlaid on the interface:

- Launching Application:** A dialog box with a blue title bar and a close button. It contains a progress bar and the text: "Verifying application requirements. This may take a few moments."
- (61%) Downloading installnms:** A dialog box with a blue title bar and standard window controls. It contains the text: "Downloading installnms. This may take several minutes. You can use your computer to do other tasks during the installation." Below this, it shows the file name "Name: installnms", the source "From: 172.16.31.20", a progress bar, and the status "Downloading: 6.29 MB of 10.1 MB". A "Cancel" button is at the bottom right.

Web-based Login



Network Resource Management

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

The screenshot displays the AddPac Network Resource Management interface. On the left, a hierarchical tree view shows the network structure under 'Current Outage Devices (11)'. The tree includes nodes for 'AddPac' (AddPac Technology Co.,Ltd.), 'Seoul' (Seoul subnetwork), and various subnetworks and centers. A context menu is open over the 'GangNamGu' node, with options: 'Add Sub Network', 'Add Site', 'Delete', 'Execute SMM', 'Search (Ctrl+F)', 'Refresh (F5)', and 'Properties'. An orange callout box points to this menu with the text: 'can cooperate with the application executables such as SMM'. In the center, a table lists device categories:

| Category Name | Description |
|----------------|-----------------------------------|
| Desktop | PC, notebook, laptop, etc |
| Network Camera | Network Camera Category |
| Phone | IP Phone, Video Phone |
| Server | PBX, RBT, UMS, Presence |
| Switch | Network Switch |
| VoIP Gateway | AddPac Digital(or Analog) Gateway |

Buttons for 'Add', 'Edit', and 'Delete' are located above this table. An orange callout box points to the tree view with the text: 'manage the complex network with a structured, hierarchical form'. On the right, a 'User Properties' dialog box is open, showing a 'Site' tab with a tree view of the same network structure. An orange callout box points to this dialog with the text: 'can assign the hierarchical node to the operator and manage role-based policy'. At the bottom of the main window, it says 'Total Categories : 6'.

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

main window

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a navigation menu with options like NMS, Account, Configuration, Monitoring, Notification, Fault, Statistics, and View. The central area is divided into several sections:

- Current Outage Devices [111]:** A tree view showing a hierarchy of devices under 'AddPac', including Branch AQ, Branch GX, HeadQuarter, and Subnetwork #2. Each device has a status indicator (e.g., 6 of 12, 3 of 3) and an availability percentage.
- Service Outages:** A table showing site-level fault summaries. The 'Overall Availability' is 30 / 11 / 34, 78.650%.
- Device Categories:** A table summarizing faults by category. The 'Overall Categories Availability' is 30 / 11 / 34, 61.282%.
- Your Outstanding Notices [16]:** A table listing recent fault events with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

current device fault list with hierarchy view

site device fault summary

device fault summary for category (classification)

overall total device fault statistics

current device fault event message are shown as below

Device Fault Management

Smart Network Management System - Windows Internet Explorer

http://172.16.31.20/smartnms.htm

NMS Account Configuration Monitoring Notification Fault Statistics View Help

Current Outage Devices (12) | Service Outages | Device Monitoring - <All>

display message icon when the device have a notification for event

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

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

| ACK ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------|-----------------------|-----------------------|--------------------|---------------|--------------|---|
| 9525 | 4/10/2009 5:21:06 PM | /AddPac/Branch GX | 00_Nr_server | 172.17.111.21 | SNMP | 인터페이스 172.17.111.21 (172.17.111.21)의 장비명(00_Nr_server)의 서비스 SNMP가 2009년 4월 10일 금요일 오후 5시 21분 06초에 실패함. |
| 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Center | NMS_SOHO_PBX | | | device NMS_SOHO_PBX, all services are down |
| 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service Call Manager 2009-4-10 11:37:12 failed. |
| 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed. |
| 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_server all services are down. |

Total Monitoring Devices : 34

4/10/2009 5:16:30 PM | 172.16.31.20:5101 | admin | Version 1.2,3384

Device Fault Management

The screenshot displays the Smart Network Management System (NMS) interface within a Windows Internet Explorer browser. The main content area shows a 'Device Monitoring' page with a grid of device status icons. The grid is organized by site and device type, with each icon representing a specific device and its operational status (e.g., online, offline, or faulted). A red arrow points to a device labeled 'NMS Camera' in the bottom row of the grid. A text box with an orange background and black text reads 'device status matrix with small view mode'.

Below the device grid, there is a table titled 'Your Outstanding Notices (18)'. The table columns include Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message. The messages describe various service outages and faults across different sites and devices.

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------------------------|------|-----------------------|----------------------|--------------------|----------------|--------------|---|
| <input type="checkbox"/> | 9535 | 4/10/2009 9:26:04 PM | /AddPac/Branch GX | 00_RBT_server | | | device 00_RBT_server's all services are down. |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeting | | | device 5th floor meeting room phone device, all services are down. |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Cent. | NMS_SOH0_PBX | | | device NMS_SOH0_PBX, all services are down |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service Call Manager 2009-4-10 11:37:12 failed. |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_server all services are down. |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3. | | | device NMS_IP_PBX_3,13 all services down. |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS_Camera 2) interface 172.16.253.118 (172.16.253.118) not response or delete by administrator |
| <input type="checkbox"/> | 9238 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device (NMS_Camera 2) interface 172.16.253.118 (172.16.253.118) service ICMP not response or deleted by administrator |

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

The screenshot displays the Smart Network Management System (NMS) interface in Internet Explorer. The main window shows a 'Notification Summary' table on the left and a 'Device Monitoring' table on the right. An 'Advanced Search' dialog box is open over the device monitoring table.

daily fault event summary statistics information

| DateTime | Outstanding | Acknowledge |
|------------|-------------|-------------|
| 2009-04-10 | 4 | 27 |
| 2009-04-09 | 2 | 76 |
| 2009-04-08 | 0 | 96 |
| 2009-04-07 | 0 | 40 |
| 2009-04-06 | 7 | 489 |
| 2009-04-05 | 0 | 722 |
| 2009-04-04 | 0 | 708 |
| 2009-04-03 | 1 | 476 |
| 2009-04-02 | 0 | 248 |
| 2009-04-01 | 0 | 19 |
| 2009-03-31 | 0 | 37 |
| 2009-03-30 | 0 | 9 |
| 2009-03-29 | 0 | 3 |
| 2009-03-28 | 0 | 1 |
| 2009-03-27 | 0 | 14 |
| 2009-03-26 | 0 | 52 |
| 2009-03-25 | 0 | 8 |
| 2009-03-24 | 0 | 19 |
| 2009-03-23 | 0 | 59 |
| 2009-03-22 | 0 | 102 |
| 2009-03-21 | 0 | 17 |
| 2009-03-20 | 0 | 21 |
| 2009-03-18 | 0 | 48 |
| 2009-03-17 | 0 | 41 |
| 2009-03-13 | 0 | 36 |
| 2009-03-07 | 0 | 1 |
| 2009-03-06 | 0 | 482 |
| 2009-03-05 | 0 | 38 |
| 2009-03-04 | 0 | 13 |

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

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message | Order | Respond Time |
|--------------------------|------|----------------------|---------------------|-------------------------------------|--------------|---------|--|-------------------|----------------------|
| <input type="checkbox"/> | 9528 | 4/10/2009 5:51:06 PM | /AddPac/Branch AQ | NMS Camera | 172.16.4.180 | SNMP | interface 172.16.4.180 (172.16.4.180) device(NMS Camera) service SNMP failed at 2009-4-10 5:51:06 PM | auto-acknowledged | 4/10/2009 5:51:35 PM |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeting room phone device | | | device 5th floor meeting room phone device, all services are down. | auto-acknowledged | 4/10/2009 5:35:25 PM |
| <input type="checkbox"/> | 9526 | 4/10/2009 5:33:42 PM | /AddPac/Branch GX | 00_NH_server | 172.17.111 | | | auto-acknowledged | 4/10/2009 5:35:25 PM |
| <input type="checkbox"/> | 9525 | 4/10/2009 5:21:06 PM | /AddPac/Branch GX | UU_NH_server | 172.17.111 | | | auto-acknowledged | 4/10/2009 5:22:43 PM |
| <input type="checkbox"/> | 9524 | 4/10/2009 5:17:29 PM | /AddPac/Branch GX | 00_NH_server | 172.17.111 | | | auto-acknowledged | 4/10/2009 5:17:56 PM |
| <input type="checkbox"/> | 9522 | 4/10/2009 3:36:26 PM | /AddPac/HeadQuarter | IP_PBX_Slave(our company) | | | | auto-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9521 | 4/10/2009 3:36:18 PM | /AddPac/HeadQuarter | PS_server(our company) | | | | auto-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9520 | 4/10/2009 3:36:17 PM | /AddPac/HeadQuarter | RBT_server(our company) | | | | auto-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9519 | 4/10/2009 3:36:17 PM | /AddPac/HeadQuarter | UMS_server #2 | | | | auto-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9518 | 4/10/2009 3:36:09 PM | /AddPac/HeadQuarter | Recording Server (our company) | | | | auto-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9517 | 4/10/2009 3:36:08 PM | /AddPac/HeadQuarter | company_MLU_s... | | | | auto-acknowledged | 4/10/2009 4:03:14 PM |
| <input type="checkbox"/> | 9516 | 4/10/2009 3:36:00 PM | /AddPac/Branch GX | 00_PS_Slave_ser... | | | | auto-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9514 | 4/10/2009 3:35:50 PM | /AddPac/Branch GX | 00_PS_server | | | | auto-acknowledged | 4/10/2009 4:02:54 PM |
| <input type="checkbox"/> | 9513 | 4/10/2009 3:35:41 PM | /AddPac/HeadQuarter | 5th floor meeting room phone device | | | | auto-acknowledged | 4/10/2009 4:02:43 PM |
| <input type="checkbox"/> | 9512 | 4/10/2009 3:35:41 PM | /AddPac/HeadQuarter | IP_PBX_Master (our company) | | | | auto-acknowledged | 4/10/2009 4:02:44 PM |
| <input type="checkbox"/> | 9511 | 4/10/2009 3:35:33 PM | /AddPac/Branch KT | 172.16.51.12 | | | | auto-acknowledged | 4/10/2009 4:02:43 PM |

Advanced Search Dialog:

- Sub Network: <All>
- Site: <All>
- IP Address Contains: []
- Notice Status Type: <All>
- Message Contains: []
- Level (Severity): <All>
- Notices After: 11/10/2008 17:20:49
- Notices Before: 11/10/2008 17:20:49
- Sort By: ID (Descending)

Your Outstanding Notices (17)

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------------------------|------|-----------------------|-----------------------|-------------------------|----------------|--------------|---|
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeting ro... | | | device 5th floor meeting room phone device, all services are down. |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Center | NMS_SOHD_PBX | | | device NMS_SOHD_PBX, all services are down |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service Call Manager 2009-4-10 11:37:12 failed. |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed. |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_server all services are down. |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_31.13 | | | device NMS_IP_PBX_31.13 all services down. |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) not response or delete by administrator |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) service ICMP not response or deleted by administrator |
| <input type="checkbox"/> | 9237 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | SNMP | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) service SNMP not response or deleted by administrator |

Device Fault History Management

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a list of events with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message. A 'Troubleshooting Note' dialog box is open, allowing users to enter a note for a specific event. The dialog includes a 'Status' dropdown (set to 'Cleared'), a text area for the note, and buttons for 'Add', 'Edit', 'Delete', and 'Help'. An orange callout box with the text 'Can write troubleshooting note if needed' points to the text area in the dialog.

| DateTime | Outstanding | Acknowledge |
|------------|-------------|-------------|
| 2009-04-10 | 4 | 27 |
| 2009-04-09 | 2 | 76 |
| 2009-04-08 | 0 | 96 |
| 2009-04-07 | 0 | 40 |
| 2009-04-06 | 7 | 489 |
| 2009-04-05 | 0 | 722 |
| 2009-04-04 | 0 | 708 |
| 2009-04-03 | 1 | 476 |
| 2009-04-02 | 0 | 248 |
| 2009-04-01 | 0 | 19 |
| 2009-03-31 | 0 | 37 |
| 2009-03-30 | 0 | 9 |
| 2009-03-29 | 0 | 3 |
| 2009-03-28 | 0 | 1 |
| 2009-03-27 | 0 | 14 |
| 2009-03-26 | 0 | 52 |
| 2009-03-25 | 0 | 8 |
| 2009-03-24 | 0 | 19 |
| 2009-03-23 | 0 | 59 |
| 2009-03-22 | 0 | 102 |
| 2009-03-21 | 0 | 102 |
| 2009-03-20 | 0 | 102 |
| 2009-03-19 | 0 | 102 |
| 2009-03-18 | 0 | 102 |
| 2009-03-17 | 0 | 102 |
| 2009-03-16 | 0 | 102 |
| 2009-03-15 | 0 | 102 |
| 2009-03-14 | 0 | 102 |
| 2009-03-13 | 0 | 102 |
| 2009-03-12 | 0 | 102 |
| 2009-03-11 | 0 | 102 |
| 2009-03-10 | 0 | 102 |
| 2009-03-09 | 0 | 102 |
| 2009-03-08 | 0 | 102 |
| 2009-03-07 | 0 | 102 |
| 2009-03-06 | 0 | 102 |
| 2009-03-05 | 0 | 102 |
| 2009-03-04 | 0 | 102 |

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message | Responder | Respond Time |
|-------------------------------------|------|----------------------|-------------------|-------------------------------------|--------------|---------|--|-------------------|----------------------|
| <input checked="" type="checkbox"/> | 9528 | 4/10/2009 5:51:06 PM | /AddPac/Branch AQ | NMS Camera | 172.16.4.180 | SNMP | interface 172.16.4.180 (172.16.4.180) device(NMS Camera) service SNMP failed at 2009-4-10 5:51 06 PM | auto-acknowledged | 4/10/2009 5:51:35 PM |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/Branch AQ | 5th floor meeting room phone device | | | device 5th floor meeting room phone device, all services are down. | | |
| <input type="checkbox"/> | 9526 | 4/10/2009 5:33:42 PM | /AddPac/Branch GX | | | | | to-acknowledged | 4/10/2009 5:35:25 PM |
| <input type="checkbox"/> | 9525 | 4/10/2009 5:21:06 PM | /AddPac/Branch GX | | | | | to-acknowledged | 4/10/2009 5:22:43 PM |
| <input type="checkbox"/> | 9524 | 4/10/2009 5:17:29 PM | /AddPac/Branch GX | | | | | to-acknowledged | 4/10/2009 5:17:56 PM |
| <input type="checkbox"/> | 9522 | 4/10/2009 3:36:26 PM | /AddPac/Branch AQ | IP cor | | | | to-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9521 | 4/10/2009 3:36:18 PM | /AddPac/Branch AQ | PS RB | | | | to-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9520 | 4/10/2009 3:36:17 PM | /AddPac/Branch AQ | cor | | | | to-acknowledged | 4/10/2009 4:03:13 PM |
| <input type="checkbox"/> | 9519 | 4/10/2009 3:36:17 PM | /AddPac/Branch AQ | UW | | | | to-acknowledged | 4/10/2009 4:03:13 PM |

Can write troubleshooting note if needed

Current Device Fault (Outage)

Current Outage Devices [13]

| Name | Service... | Availability |
|--------------------|------------|--------------|
| AddPac | | |
| Branch AQ | | |
| NMS Camera | 6 of 12 | 50.000 % |
| NMS_IP_PBX... | 3 of 3 | 0.000 % |
| Branch GX | | |
| 00_IVR_server | 3 of 3 | 0.000 % |
| 00_IVR_slave... | 3 of 3 | 0.000 % |
| 00_PS_server | 3 of 3 | 0.000 % |
| 00_PS_slave... | 2 of 3 | 33.333 % |
| 00_RBT_server | 3 of 3 | 0.000 % |
| IPNext 3000 S... | 1 of 3 | 66.667 % |
| IPNext 3000 S... | 1 of 3 | 66.667 % |
| UMS slave | 3 of 3 | 0.000 % |
| HeadQuarter | | |
| 5th floor meeti... | 1 of 1 | 0.000 % |
| UMS serverfo... | 3 of 3 | 0.000 % |
| Subnetwork #2 | | |
| Center | | |
| NMS_S0H0... | 2 of 2 | 0.000 % |

| Outage ID | Site | Device Name | IP Address | Service | Time Down |
|-----------|----------------------|-----------------------------|----------------|--------------|-----------------------|
| 13968 | /AddPac/Branch GX | 00_RBT_server | 172.17.114.60 | Media | 4/10/2009 9:26:04 PM |
| 13967 | /AddPac/Branch GX | 00_RBT_server | 172.17.114.60 | ICMP | 4/10/2009 9:26:04 PM |
| 13966 | /AddPac/Branch GX | 00_RBT_server | 172.17.114.60 | SNMP | 4/10/2009 9:26:04 PM |
| 13948 | /AddPac/HeadQuarter | 5th floor meeting room p... | 172.16.53.101 | ICMP | 4/10/2009 5:34:10 PM |
| 13907 | /Subnetwork #2/Cent. | NMS_S0H0_PBX | 172.16.19.50 | ICMP | 4/10/2009 3:34:29 PM |
| 13906 | /Subnetwork #2/Cent. | NMS_S0H0_PBX | 172.16.19.50 | SNMP | 4/10/2009 3:34:29 PM |
| 13896 | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | 2009-4-10 11:37:12 AM |
| 13895 | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | 2009-4-10 11:37:12 AM |
| 13802 | /AddPac/Branch GX | 00_IVR_server | 172.17.113.40 | device | 2009-4-10 11:37:12 AM |
| 13801 | /AddPac/Branch GX | 00_IVR_server | 172.17.113.40 | device | 2009-4-10 11:37:12 AM |
| 13800 | /AddPac/Branch GX | 00_IVR_server | 172.17.113.40 | device | 2009-4-10 11:37:12 AM |
| 13773 | /AddPac/Branch AQ | NMS_IP_PBX_31.13 | 172.17.113.13 | device | 2009-4-10 11:37:12 AM |
| 13772 | /AddPac/Branch AQ | NMS_IP_PBX_31.13 | 172.17.113.13 | device | 2009-4-10 11:37:12 AM |
| 13771 | /AddPac/Branch AQ | NMS_IP_PBX_31.13 | 172.17.113.13 | device | 2009-4-10 11:37:12 AM |
| 13611 | /AddPac/Branch AQ | NMS Camera | 172.16.253.118 | device | 2009-4-10 11:37:12 AM |
| 13610 | /AddPac/Branch AQ | NMS Camera | 172.16.253.118 | device | 2009-4-10 11:37:12 AM |
| 13609 | /AddPac/Branch AQ | NMS Camera | 172.16.253.118 | device | 2009-4-10 11:37:12 AM |
| 13608 | /AddPac/Branch AQ | NMS Camera | 172.16.253.118 | device | 2009-4-10 11:37:12 AM |
| 13607 | /AddPac/Branch AQ | NMS Camera | 172.16.253.118 | device | 2009-4-10 11:37:12 AM |
| 13606 | /AddPac/Branch AQ | NMS Camera | 172.16.253.118 | device | 2009-4-10 11:37:12 AM |
| 9021 | /AddPac/Branch GX | UMS slave | 172.17.113.41 | device | 2009-4-10 11:37:12 AM |
| 9020 | /AddPac/Branch GX | UMS slave | 172.17.113.41 | device | 2009-4-10 11:37:12 AM |
| 9019 | /AddPac/Branch GX | UMS slave | 172.17.113.41 | device | 2009-4-10 11:37:12 AM |
| 6489 | /AddPac/Branch GX | 00_PS_server | 172.17.113.41 | device | 2009-4-10 11:37:12 AM |

Event Detail (ID: 45412)

Acknowledge Events Device Properties Help Close

Event Time: 4/10/2009 9:26:04 PM IP Address: Severity: Critical

Site: /AddPac/Branch GX Device Name: 00_RBT_server Device Model: AP-RBT1000

Service: Status: Acknowledged By:

Time Acknowledge:

Log Message: device 00_RBT_server down

Description: device 00_RBT_server's all interface down. A new Outage record has been created and service level availability calculations will be impacted until this outage is resolved.

Troubleshooting Note List

| Time | User | Status | Note |
|------|------|--------|------|
| | | | |

Add Edit Delete

Device Event History

Smart Network Management System - Windows Internet Explorer

http://172.16.31.20/smatnms.htm

NMS Account Configuration Monitoring Notification Fault Statistics View Help

Site Event Summary

Service Outages Event Notification Destination Paths Users View Current Outages View Outages View Events

Limit 20 Refresh Advanced Search Acknowledge Events Troubleshooting Note

| Event Time | Outsta... | Ackno... | Not Clea... | Cleared | In Pr... |
|------------|-----------|----------|-------------|---------|----------|
| 2009-04-13 | 40 | 0 | 40 | 0 | 0 |
| 2009-04-12 | 6 | 0 | 6 | 0 | 0 |
| 2009-04-11 | 314 | 0 | 314 | 0 | 0 |
| 2009-04-10 | 182 | 0 | 182 | 0 | 0 |
| 2009-04-09 | 290 | 0 | 290 | 0 | 0 |
| 2009-04-08 | 412 | 0 | 412 | 0 | 0 |
| 2009-04-07 | 448 | 0 | 448 | 0 | 0 |
| 2009-04-06 | 1453 | 0 | 1453 | 0 | 0 |
| 2009-04-05 | 1704 | 0 | 1704 | 0 | 0 |
| 2009-04-04 | 1712 | 0 | 1712 | 0 | 0 |
| 2009-04-03 | 1276 | 0 | 1276 | 0 | 0 |
| 2009-04-02 | 799 | 0 | 799 | 0 | 0 |
| 2009-04-01 | 271 | 0 | 271 | 0 | 0 |
| 2009-03-31 | 277 | 0 | 277 | 0 | 0 |
| 2009-03-30 | 212 | 0 | 212 | 0 | 0 |
| 2009-03-29 | 17 | 0 | 17 | 0 | 0 |
| 2009-03-28 | 2 | 0 | 2 | 0 | 0 |
| 2009-03-27 | 108 | 0 | 108 | 0 | 0 |
| 2009-03-26 | 292 | 0 | 292 | 0 | 0 |
| 2009-03-25 | 46 | 0 | 46 | 0 | 0 |
| 2009-03-24 | 121 | 0 | 121 | 0 | 0 |
| 2009-03-23 | 1904 | 0 | 1904 | 0 | 0 |
| 2009-03-22 | 2643 | 0 | 2643 | 0 | 0 |
| 2009-03-21 | 354 | 0 | 354 | 0 | 0 |
| 2009-03-20 | 172 | 0 | 172 | 0 | 0 |
| 2009-03-19 | 1 | 0 | 1 | 0 | 0 |
| 2009-03-18 | 1294 | 0 | 1294 | 0 | 0 |
| 2009-03-17 | 788 | 0 | 788 | 0 | 0 |
| 2009-03-16 | 14 | 0 | 14 | 0 | 0 |
| 2009-03-15 | 3 | 0 | 3 | 0 | 0 |

| Acc. ID | Severity | Event Time | Site | Device Name | IP Address | Service | Message |
|---------|----------|-----------------------|-----------------------|----------------------|----------------|---------|--|
| 45786 | Critical | 4/13/2009 11:24:42 AM | /AddPac/Branch GX | SE_MG3000N_A | 172.17.111.25 | | Agent Up with enterprise.1.3.6.1.4.1.4855.3.2.255 args [1.3.6.1.6.3.1.1.4.3.0="1.3.6.1.4.1.4855.3.2.255" |
| 45785 | Cleared | 4/13/2009 11:15:59 AM | /AddPac/Branch GX | 00_NR_server | 172.17.111.21 | SNMP | SNMP data collection on interface 172.17.111.21 previously failed and has been restored. |
| 45784 | Cleared | 4/13/2009 11:15:52 AM | /AddPac/Branch GX | 00_NR_server | 172.17.111.21 | | Node 00_NR_server is up. |
| 45783 | Critical | 4/13/2009 11:15:51 AM | /AddPac/Branch GX | 00_NR_server | 172.17.111.21 | | Agent Up with Possible Changes (coldStart Trap) enterprise.1.3.6.1.4.1.4855.3.2.10 [1.3.6.1.4.1.4855.3.2.10] args [1.3.6.1.6.3.1.1.4.3.0="1.3.6.1.4.1.4855.3.2.10" |
| 45782 | Critical | 4/13/2009 11:15:13 AM | /AddPac/Branch GX | 00_NR_server | 172.17.111.21 | | Node 00_NR_server is down. |
| 45781 | Warning | 4/13/2009 11:14:57 AM | /AddPac/Branch GX | 00_NR_server | 172.17.111.21 | SNMP | SNMP data collection on interface 172.17.111.21 failed. |
| 45780 | Warning | 4/13/2009 10:00:15 AM | /AddPac/Branch AQ | NMS_IP_PBX_31... | 172.16.31.13 | SNMP | SNMP thresholding on interface 172.16.31.13 failed. |
| 45779 | Warning | 4/13/2009 10:00:15 AM | /Subnetwork #2/Center | NMS_IP_PBX_31... | 172.16.31.16 | SNMP | SNMP thresholding on interface 172.16.31.16 failed. |
| 45778 | Warning | 4/13/2009 9:59:51 AM | /AddPac/Branch GX | UMS slave | 172.17.113.201 | SNMP | SNMP data collection on interface 172.17.113.201 failed. |
| 45777 | Warning | 4/13/2009 9:59:46 AM | /AddPac/Branch GX | UMS slave | 172.17.113.201 | SNMP | SNMP data collection on interface 172.17.113.201 failed. |
| 45776 | Warning | 4/13/2009 9:59:42 AM | /AddPac/HeadQuarter | UMS server(our co... | 61.33.161.43 | SNMP | SNMP data collection on interface 61.33.161.43 failed. |
| 45775 | Warning | 4/13/2009 9:59:41 AM | /AddPac/HeadQuarter | UMS server(our co... | 61.33.161.43 | SNMP | SNMP data collection on interface 61.33.161.43 failed. |
| 45774 | Warning | 4/13/2009 9:59:36 AM | /Subnetwork #2/Center | NMS_SOHO_PBX | 172.16.19.50 | SNMP | SNMP data collection on interface 172.16.19.50 failed. |
| 45773 | Warning | 4/13/2009 9:59:33 AM | /Subnetwork #2/Center | NMS_SOHO_PBX | 172.16.19.50 | SNMP | SNMP data collection on interface 172.16.19.50 failed. |
| 45772 | Warning | 4/13/2009 9:59:32 AM | /Subnetwork #2/Center | NMS_SOHO_PBX | 172.16.19.50 | SNMP | SNMP data collection on interface 172.16.19.50 failed. |
| 45771 | Warning | 4/13/2009 9:59:27 AM | /Subnetwork #2/Center | NMS_SOHO_PBX | 172.16.19.50 | SNMP | SNMP data collection on interface 172.16.19.50 failed. |
| 45770 | Warning | 4/13/2009 9:59:24 AM | /Subnetwork #2/Center | NMS_SOHO_PBX | 172.16.19.50 | SNMP | SNMP data collection on interface 172.16.19.50 failed. |
| 45769 | Warning | 4/13/2009 9:59:23 AM | /Subnetwork #2/Center | NMS_SOHO_PBX | 172.16.19.50 | SNMP | SNMP data collection on interface 172.16.19.50 failed. |
| 45768 | Warning | 4/13/2009 9:59:18 AM | /AddPac/Branch AQ | NMS_IP_PBX_31... | 172.16.31.13 | SNMP | SNMP data collection on interface 172.16.31.13 failed. |
| 45767 | Warning | 4/13/2009 9:59:15 AM | /AddPac/Branch AQ | NMS_IP_PBX_31... | 172.16.31.13 | SNMP | SNMP data collection on interface 172.16.31.13 failed. |

Results : 1 to 20 of 25346 Search Constraints : user=admin

summarize daily event statistics data

| Acc. ID | Event Time | Site | Device Name | IP Address | Service | Message |
|---------|-----------------------|-------------------|--------------------|----------------|--------------|--|
| 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | device 00_RBT_server's all services are down. |
| 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | device 5th floor meeting room phone device, all services are down. |
| 9419 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device NMS_SOHO_PBX, all services are down. |
| 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3... | | | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service Call Manager 2009-4-10 11:37:12 failed. |
| 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed |
| | | | | | | device 00_IVR_server all services are down. |
| | | | | | | device NMS_IP_PBX_31.13 all services down. |
| | | | | | | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) not response or delete by administrator |

Your Outstanding Notices (18) All Outstanding Notices (18)

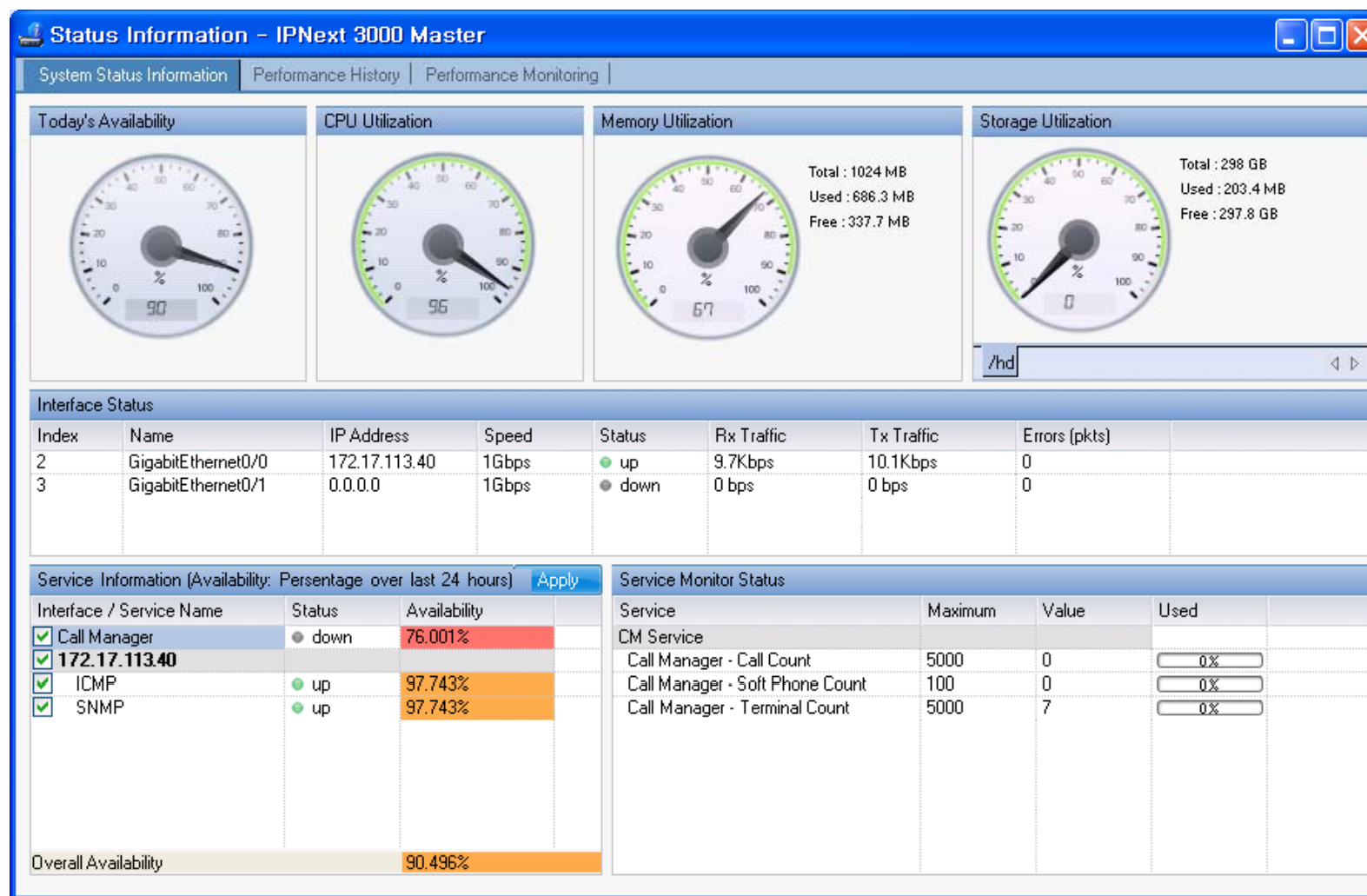
4/13/2009 11:46:45 AM 172.16.31.20:5101 admin Version 1.2.3384

Can view all events for devices with search condition

Device Status Information

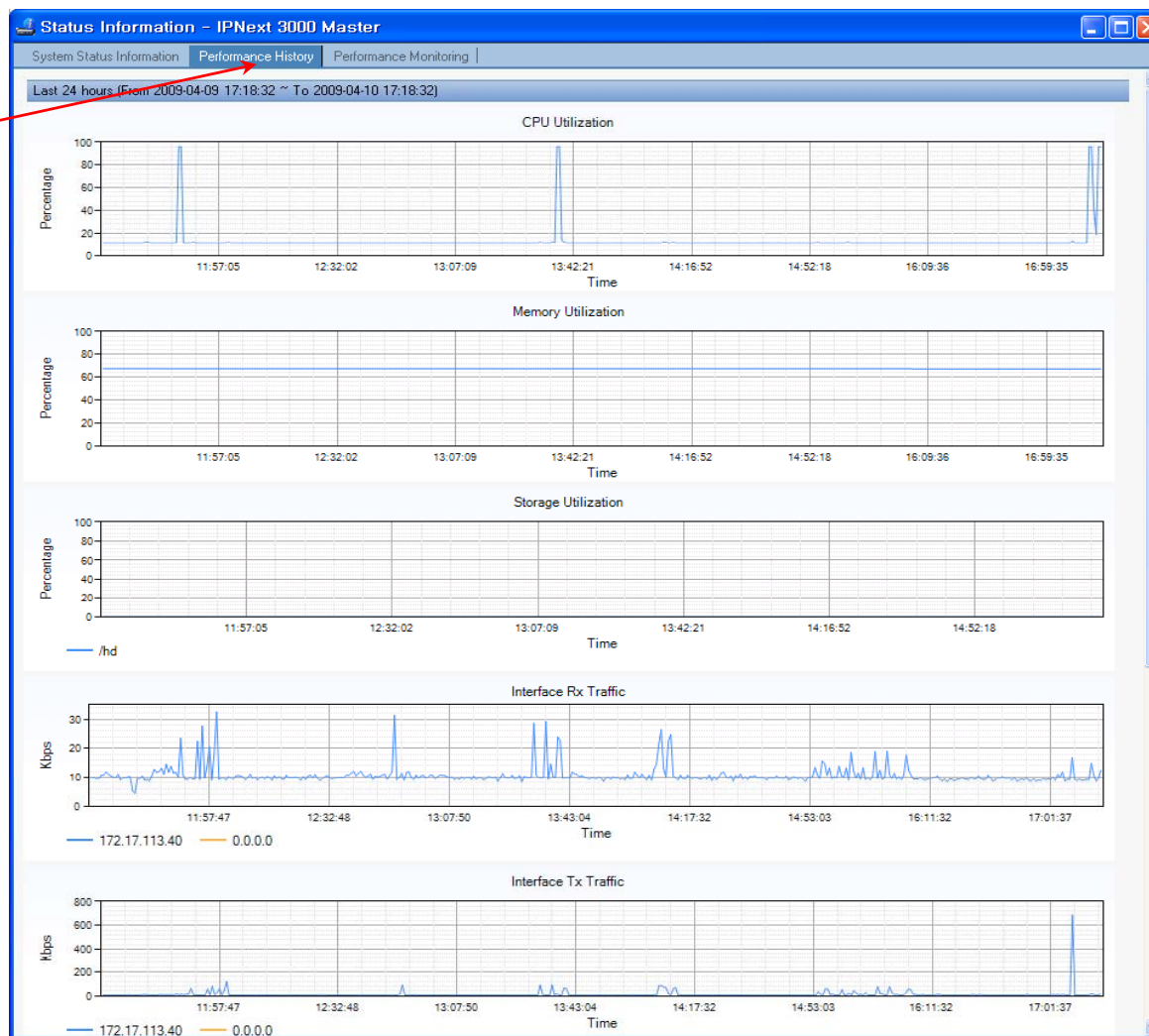
- System Performance Information (CPU, HDD, Memory,...)
- Provide device current service status (up/down)
- Provide device main status (max value vs current value)
- Display Graph Series with System Performance Information
- Monitor Main Status Flow with System Monitoring View

Device Status Information

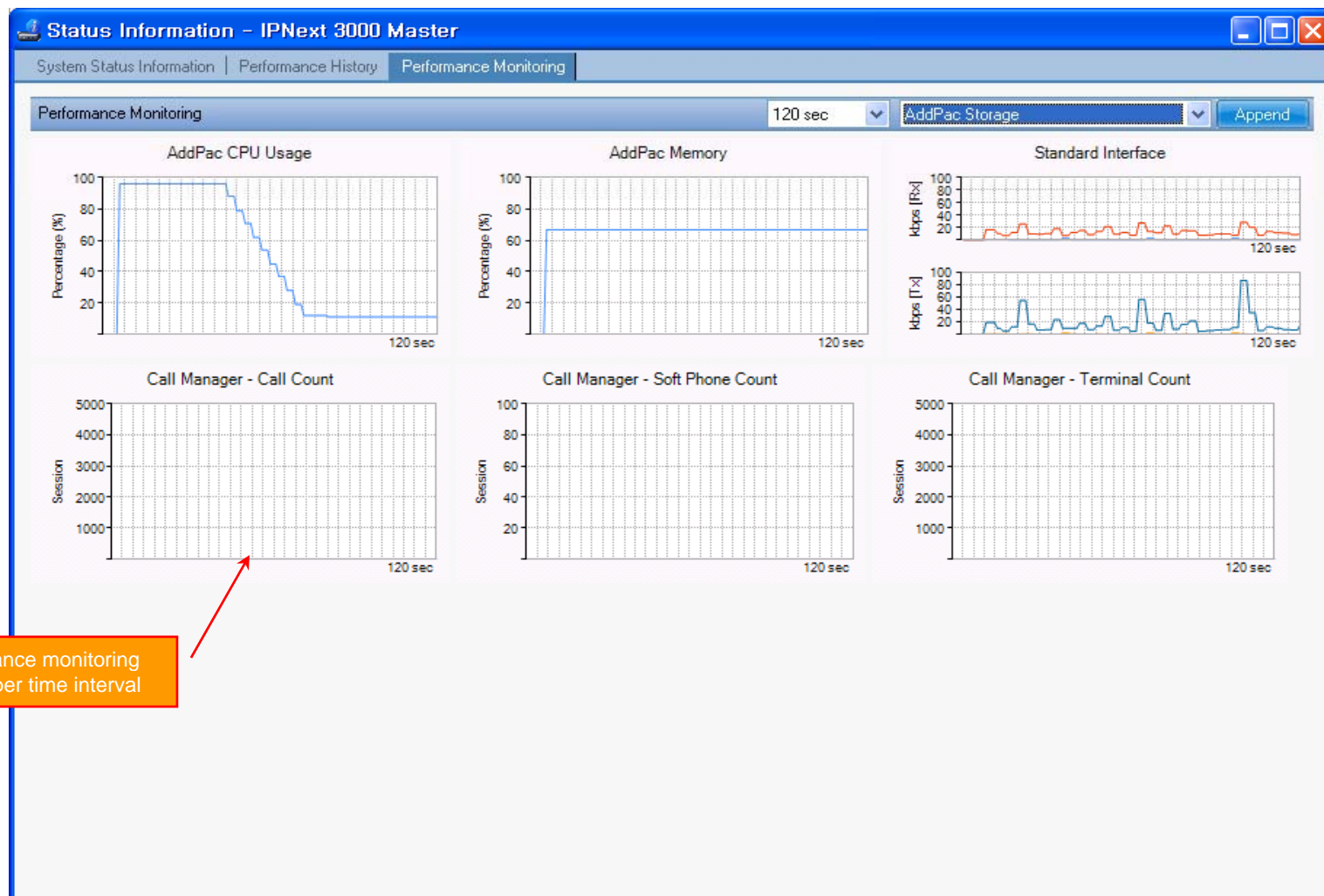


Device Status Information

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

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a tree view of devices on the left, a table of event notifications in the center, and a detailed 'Event Notification Properties' dialog box on the right. Three orange callout boxes provide instructions:

- apply notification policy with event-based filter** (example : notify me when network link of device is down through SMS, e-mail)
- specify category when each event occurs**
- describe notification message content for e-mail or SMS**

The 'Event Notification Properties' dialog box shows the following configuration:

- Notification Name: serviceUnresponsive
- Description: test
- Event: Node event: serviceUnresponsive
- Destination Path: default
- Notification Type: sms, alarmLamp, email
- Current Rule: IPADDR IPLIKE ****
- Apply Category: Desktop, Network Camera, Phone, Server, Switch
- Email Subject: Notice #noticeid% %service% service on %interfaceresolve% (%interface%)
- Text Message: The %service% poll to interface %interfaceresolve% (%interface%) on node %nodelabel% successfully completed a synthetic connection to the service listener on the remote machine. However, the synthetic transaction failed to complete within %iparam[timeout]% milliseconds, over %iparam[attempts]% attempts. This event will NOT impact service level agreements, but may be an indicator of other problems on that node.
- Special Values: Can be used in both the text message and email subject: %noticeid% = notification ID number, %time% = time sent, %severity% = event severity, %nodelabel% = may be IP address or empty, %interface% = IP address, may be empty, %service% = service name, may be empty, %eventid% = event ID, may be empty.
- Note: If the alert exceeds 80 bytes then the notification will be dispatched in two or more sms.
- Enable Notification:

The 'Your Outstanding Notices (18)' table at the bottom shows the following data:

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------------------------|------|-----------------------|----------------------|----------------------|----------------|--------------|---|
| <input type="checkbox"/> | 9535 | 4/10/2009 9:26:04 PM | /AddPac/Branch GX | 00_RBT_server | | | device 00_RBT_server is all services... |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeting... | | | |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Cent. | NMS_SOHO_PBX | | | |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3... | | | |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | |

Event Notification Management

The screenshot shows the Smart NMS interface with the 'Destination Path Properties' dialog box open. The dialog is titled 'Destination Path Properties' and has a 'Destination Path Name' field set to 'default'. Below this, there is a table for 'Initial Target' with columns for 'Notification Type', 'Target', and 'Auto Notify'. The table contains three entries: 'alarmLamp' with target 'alarmLamp' and 'Auto Notify' set to 'on'; 'email' with target 'admin' and 'Auto Notify' set to 'on'; and 'sms' with target 'admin' and 'Auto Notify' set to 'on'. A red callout box with the text 'define notification channel such as e-mail, sms, or alarmLamp' points to the 'alarmLamp' entry. There are 'Add' and 'Delete' buttons below the table. At the bottom of the dialog, there is an 'Escalation' section with a 'Delay' field set to '0m' and another empty table with 'Add' and 'Delete' buttons. The background shows a tree view of 'Current Outage Devices' and a table of 'Your Outstanding Notices'.

| Notification Type | Target | Auto Notify |
|-------------------|-----------|-------------|
| alarmLamp | alarmLamp | on |
| email | admin | on |
| sms | admin | on |

Event Notification Management

Smart Network Management System - Windows Internet Explorer

http://172.16.31.20/smartnms.htm

NMS Account Configuration Monitoring Notification Fault Statistics View Help

Current Outage Devices (13) | Site | Service Outages | Event Notification | Destination Paths | Users

Destination Path Name: default
onlyAlarmLamp

Destination Path Properties

| Notification Type | Target | Auto Notify |
|-------------------|-----------|-------------|
| alarmLamp | alarmLamp | on |
| email | admin | on |
| sms | admin | on |

Target Properties

Choose the notification type: sms

Target Information

Send to select user: Account Administrator

Send to Email or Mobile: Mobile Number

Choose the desired behavior for automatic notification on responded events: on

Help Ok Cancel

user account (administrator) setting for SMS, E-mail Notification or specify e-mail address or SMS phone number

Your Outstanding Notices (18)

| Ack | ID | Send Time | Site | Device Name | IP Address | Message |
|--------------------------|------|-----------------------|------------------------|--------------------|----------------|--|
| <input type="checkbox"/> | 9535 | 4/10/2009 9:26:04 PM | /AddPac/Branch GX | 00_RBT_server | | device 00_RBT_server's all services are down. |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeti... | | device 5th floor meeting room phone device, all services are down. |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Cent... | NMS_SOHO_PBX | | device NMS_SOHO_PBX, all services are down |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service Call Manager 2009-4-10 11:37:12 failed |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | device 00_IVR_server all services are down. |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3... | | device NMS_IP_PBX_31.13 all services down. |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) not response or delete by administrator |

4/13/2009 11:24:54 AM | 172.16.31.20:5101 | admin | Version 1.2.3384

Configuration

Smart Network Management System - Windows Internet Explorer

http://172.16.31.20/smartnms.htm

Smart Network Management System

NMS Account Configuration Monitoring Notification Fault Statistics View Help

Current Outage Devices [13] Site

Service Outages Event Notification Destination Paths Users

Name Service... Availability

AddPac

- Branch AQ
 - NMS Camera 6 of 12 50.000 %
 - NMS_IP_PBX... 3 of 3 0.000 %
- Branch GX
 - 00_IVR_server 3 of 3 0.000 %
 - 00_IVR_slave... 3 of 3 0.000 %
 - 00_FS_server 3 of 3 0.000 %
 - 00_IPS_slave... 2 of 3 33.333 %
 - 00_RBT_server 3 of 3 0.000 %
 - IPNext 3000 ... 1 of 3 66.667 %
 - IPNext 3000 S... 1 of 3 66.667 %
 - UMS slave 3 of 3 0.000 %
- HeadQuarter
 - 5th floor meeti... 1 of 1 0.000 %
 - UMS serverfo... 3 of 3 0.000 %
- Subnetwork #2
 - Center
 - NMS_S0HD_... 2 of 2 0.000 %

Configure Notification

External Notification Alarm Lamp

E-Mail SMS

Sender Email Address nms@addpac.com

SMTP Server Host 61.33.161.2

Authentication

Username

Password

Help Ok Cancel

Total destination paths : 2

Your Outstanding Notices [18]

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------------------------|------|-----------------------|------------------------|----------------------|----------------|--------------|--|
| <input type="checkbox"/> | 9535 | 4/10/2009 9:26:04 PM | /AddPac/Branch GX | 00_RBT_server | | | device 00_RBT_server's all services are down. |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeting... | | | device 5th floor meeting room phone device, all services are down. |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Cent... | NMS_S0HD_PBX | | | device NMS_S0HD_PBX, all services are down |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_server all services are down |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3... | | | device NMS_IP_PBX_31.13 all services down. |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS_Camera 2) interface 172.16.253.118 (172.16.253.118) not response or delete by administrator |

Your Outstanding Notices [18] All Outstanding Notices [18]

4/13/2009 11:26:16 AM 172.16.31.20:5101 admin Version 1.2.3384

Audible & Visible Alarm

notify operator (or administrator)
 1. Alarm lamp blink (on&off) (visible)
 2. play alarm sound (audible)

can synchronize with alarm lamp equipment

| Site | Type | Outages | Availability | Description |
|--------|-------------|--------------|--------------|------------------------|
| AddPac | Sub Netw... | 32 / 12 / 32 | 52% | AddPac Technology C... |
| Seoul | Sub Netw... | 2 / 1 / 2 | 33% | Seoul subnetwork |

| Category | Outages | Availability |
|----------------|--------------|--------------|
| Desktop | 0 / 0 / 1 | 100% |
| Network Camera | 6 / 1 / 2 | 57% |
| Phone | 1 / 1 / 3 | 66% |
| Server | 27 / 11 / 22 | 42% |
| Switch | 0 / 0 / 0 | 100% |
| WiFi Gateway | 0 / 0 / 6 | 100% |

| Overall Availability | | 34 / 13 / 34 | 27.690 % |
|---------------------------------|--|--------------|----------|
| Overall Categories Availability | | 34 / 13 / 34 | 49.470 % |

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------------------------|------|-----------------------|------------------------|----------------------|----------------|--------------|---|
| <input type="checkbox"/> | 9535 | 4/10/2009 9:26:04 PM | /AddPac/Branch GX | 00_RBT_server | | | device 00_RBT_server's all services are down. |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuater | 5th floor meeting... | | | device 5th floor meeting room phone device, all services are down. |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Cont... | NMS_SDHO_PBX | | | device NMS_SDHO_PBX, all services are down |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service Call Manager 2009-4-10 11:37:12 failed. |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) service Call Manager 2009-4-10 11:37:12 failed |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_server all services are down. |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3... | | | device NMS_IP_PBX_31.13 all services down. |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) not response or deleted by administrator |
| <input type="checkbox"/> | 9238 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) service ICMP not response or deleted by administrator |
| <input type="checkbox"/> | 9237 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | SNMP | device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) service SNMP not response or deleted by administrator |
| <input type="checkbox"/> | 9236 | 4/6/2009 7:41:25 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device(NMS Camera 2) interface 172.16.253.118 (172.16.253.118) service ICMP not response or deleted by administrator |
| <input type="checkbox"/> | 9235 | 4/6/2009 7:41:25 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | SNMP | device(NMS Camera 2) interface 172.16.253.118 (172.16.253.118) service SNMP not response or deleted by administrator |

Fault Statistics

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

Fault Statistics

The screenshot displays the Smart Network Management System (NMS) interface. The main content area shows a search bar with the following conditions: Hour: 4/ 9/2009, Site: Branch A, Branch AQ, B. Below the search bar is a bar chart titled "Fault Statistics (Site)" showing fault counts over time for various sites. The chart shows a significant peak in fault counts around 15:00. Below the chart is a detailed data table for the date 4/9/2009, showing fault counts for each site across different times of the day. The total fault count for the day is 118.

Search Condition: Hour: 4/ 9/2009, Site: Branch A, Branch AQ, B

Fault Statistics (Site) - 4/9/2009

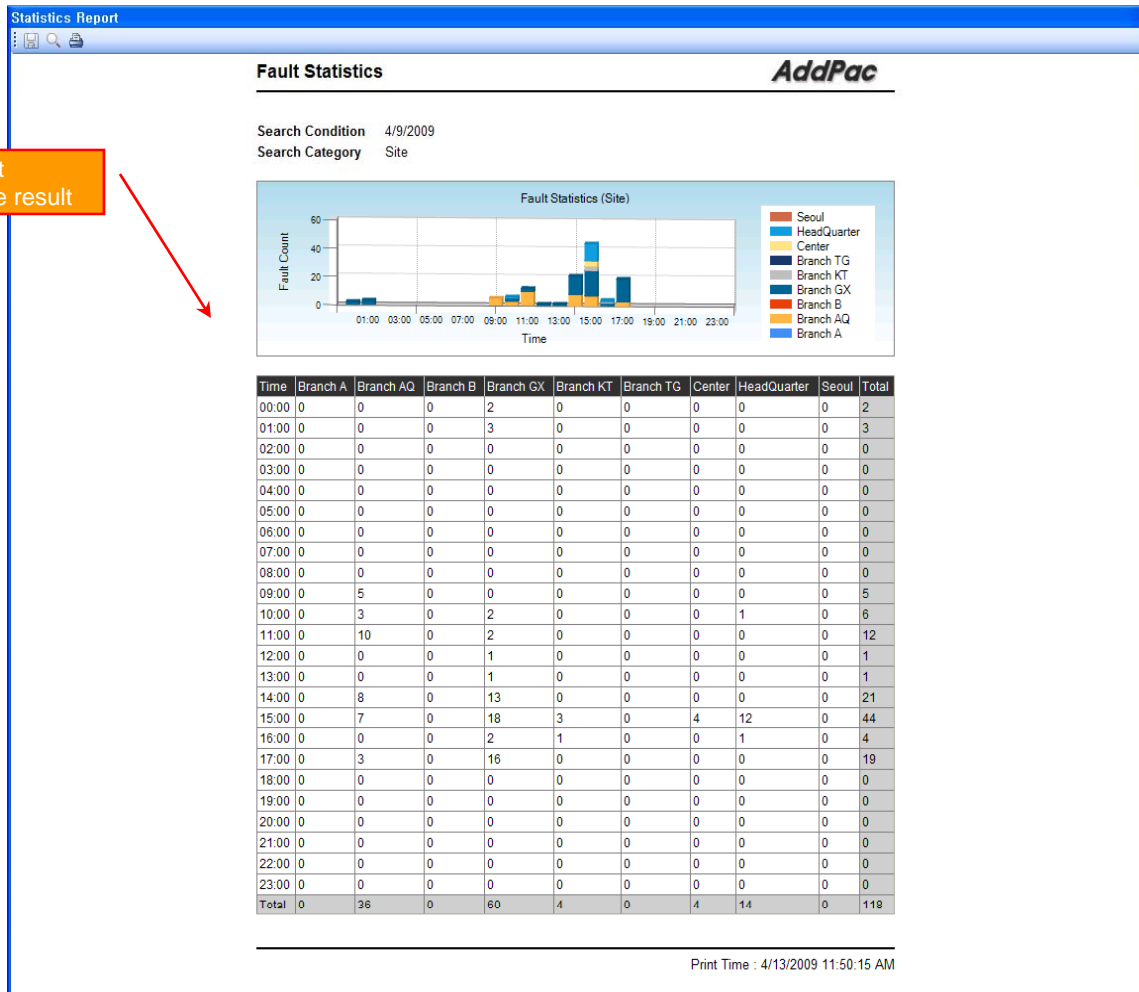
| Time | Branch A | Branch AQ | Branch B | Branch GX | Branch KT | Branch TG | Center | HeadQuarter | Seoul | Total |
|--------------|----------|-----------|----------|-----------|-----------|-----------|----------|-------------|----------|------------|
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 |

Callout 1: display graph for fault statistics with various search condition

Callout 2: display detailed data for fault statistics

Fault Statistics – Report Generation

report generation for fault statistics and print out the result



Model & Service Management

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

Device Model Management

manage device model with various properties such as model image

model image repository for selection

| Name | Description |
|---------------------|-------------------------|
| AddPac | AddPac Technology C... |
| Branch AQ | Branch AQ |
| Branch GX | Branch GX description |
| Branch KT | |
| HeadQuarter | Main HeadQuarter Cen... |
| Seoul | Seoul subnetwork |
| Seoul East Area | Seoul East Area |
| SongPaGu Area Ce... | SongPaGu Area Center |
| Subnetwork #2 | Subnetwork #2 |
| Branch TG | Yeoksam Area |
| SeoChoGu | seoul seocho district |
| Seoul West Area | Seoul West Area |
| Uangseo Area | Uangseo Area |
| Seoul | |
| MokDong Area | MokDong Area |

| Model Name | Category |
|------------|----------------|
| AP-IP200 | Phone |
| AP-IP300 | Phone |
| AP-IPC | Network Camera |
| AP-IPC250M | Network Camera |
| AP-IVR1000 | Server |
| AP-MC1000 | Server |
| AP-MC3000 | Server |
| AP-MC5000 | Server |
| AP-NR2000 | Server |
| AP-PS2000 | Server |
| AP-RBT1000 | Server |
| AP-RS2000 | Server |
| AP-UMS1000 | Server |
| AP-UMS2000 | Server |
| AP-VC2000 | Phone |
| AP-VP200 | Phone |
| AP-VP300 | Phone |
| AP-VP350 | Phone |
| AP-VP500 | Phone |
| IPNext1000 | Server |
| IPNext1800 | Server |
| IPNext200 | Server |

| Model Name | Category | SSCP Port |
|------------|----------------|----------------|
| AP-IPC250M | Network Camera | 5061 (1*65535) |

| Model Image Management |
|---------------------------------------|
| [Grid of device images for selection] |

| Site | Device Name | IP Address | Service | Message |
|------------------------|--------------------|----------------|--------------|--|
| /AddPac/Branch GX | 00_RBT_server | | | device 00_RBT_server's all services are down. |
| /AddPac/HeadQuarter | 5th floor meeting | | | device 5th floor meeting room phone device, all services are down |
| /Subnetwork #2/Cent... | NMS_SOHD_PBX | | | device NMS_SOHD_PBX, all services are down |
| /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) failed |
| /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 (172.17.113.40) device (IPNext 3000 Master) failed |
| /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_server all services are down. |
| /AddPac/Branch AQ | NMS_IP_PBX_3... | | | device NMS_IP_PBX_31.13 all services down. |
| /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS Camera 2) interface 172.16.253.118 response or delete by administrator |
| /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device (NMS Camera 2) interface 172.16.253.118 response or delete by administrator |
| /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS Camera 2) interface 172.16.253.118 response or delete by administrator |
| /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS Camera 2) interface 172.16.253.118 response or delete by administrator |

Service Definition

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a tree view of sites on the left and a list of services in the center. A red arrow points from an orange callout box to the 'Camera Operation Status' service in the list. Two 'Service Properties' dialog boxes are open, showing configuration details for this service.

Service List:

| Service Name | Protocol | Port |
|-------------------------|----------|------|
| Call Manager | SNMP | 161 |
| Presence | SNMP | 161 |
| Media | SNMP | 161 |
| UP | SNMP | 161 |
| RtpProxy | SNMP | 161 |
| MCU | SNMP | 161 |
| IVR | SNMP | 161 |
| Recording | SNMP | 161 |
| Tomcat | TCP | 8080 |
| FTP | TCP | 21 |
| Camera Pan | SNMP | 161 |
| Camera Tilt | SNMP | 161 |
| Camera Zoom | SNMP | 161 |
| Camera Operation Status | SNMP | 161 |

Service Properties (Top):

- Service Name: Camera Operation Status
- Protocol: SNMP
- Port: 161
- Interval: 30000 (msec)
- Timeout: 3000 (msec)
- Retry: 3

Service Properties (Bottom):

- Service OID: 1.3.6.1.4.1.4895.7.51.1.3.0
- Service Condition: Operator =, Operand 1

Your Outstanding Notices (18):

| Ack | ID | Send Time | Site | Device Name | IP Address | Service | Message |
|--------------------------|------|-----------------------|------------------------|--------------------|----------------|--------------|--|
| <input type="checkbox"/> | 9535 | 4/10/2009 9:26:04 PM | /AddPac/Branch GX | 00_RBT_server | | | device 00_RBT_serv |
| <input type="checkbox"/> | 9527 | 4/10/2009 5:34:10 PM | /AddPac/HeadQuarter | 5th floor meeti... | | | device 5th floor meet |
| <input type="checkbox"/> | 9502 | 4/10/2009 3:34:29 PM | /Subnetwork #2/Cent... | NMS_SOHD_PBX | | | device NMS_SOHD_PBX |
| <input type="checkbox"/> | 9495 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Slave | 172.17.113.41 | Call Manager | interface 172.17.113.41 |
| <input type="checkbox"/> | 9494 | 4/10/2009 11:37:12 AM | /AddPac/Branch GX | IPNext 3000 Master | 172.17.113.40 | Call Manager | interface 172.17.113.40 |
| <input type="checkbox"/> | 9418 | 4/9/2009 2:20:01 PM | /AddPac/Branch GX | 00_IVR_server | | | device 00_IVR_serv |
| <input type="checkbox"/> | 9396 | 4/9/2009 10:57:37 AM | /AddPac/Branch AQ | NMS_IP_PBX_3... | | | device NMS_IP_PBX_3... |
| <input type="checkbox"/> | 9239 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | | device (NMS Camera response or delete by |
| <input type="checkbox"/> | 9238 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device (NMS Camera ICMP not response o |
| <input type="checkbox"/> | 9237 | 4/6/2009 7:49:20 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | SNMP | device (NMS Camera SNMP not response |
| <input type="checkbox"/> | 9236 | 4/6/2009 7:41:25 PM | /AddPac/Branch AQ | NMS Camera 2 | 172.16.253.118 | ICMP | device(NMS Camera ICMP not response o |

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



Thank you!

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