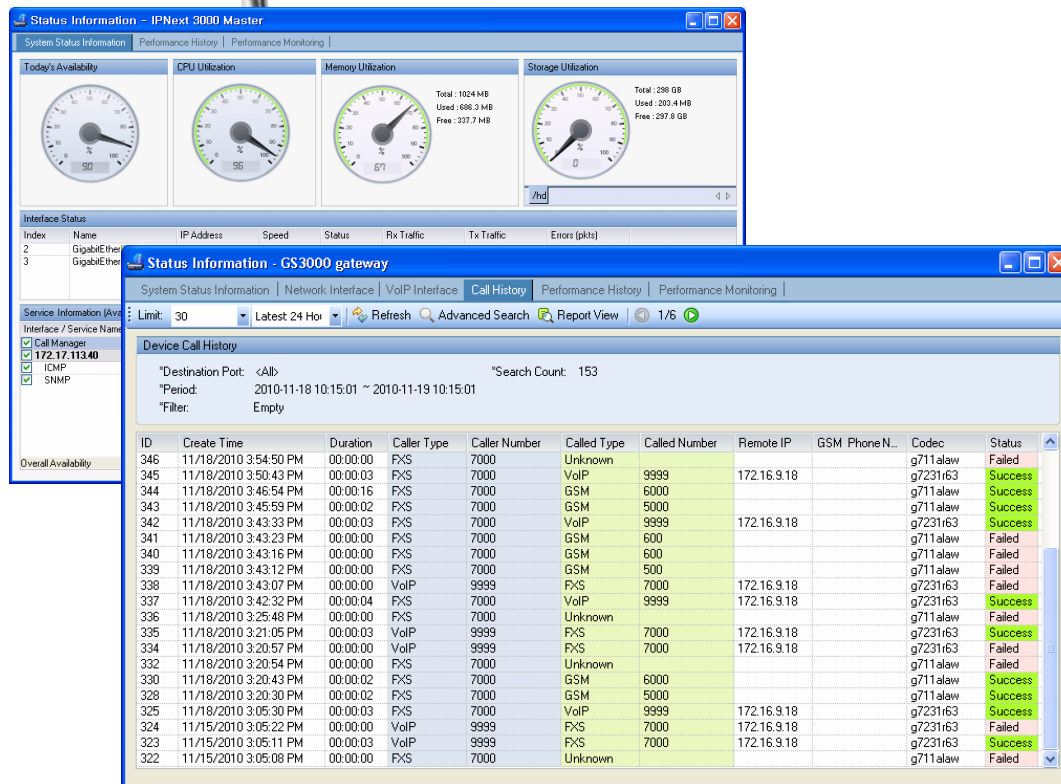


Smart GSM NMS

Smart Network Management System

Smart GSM NMS Overview



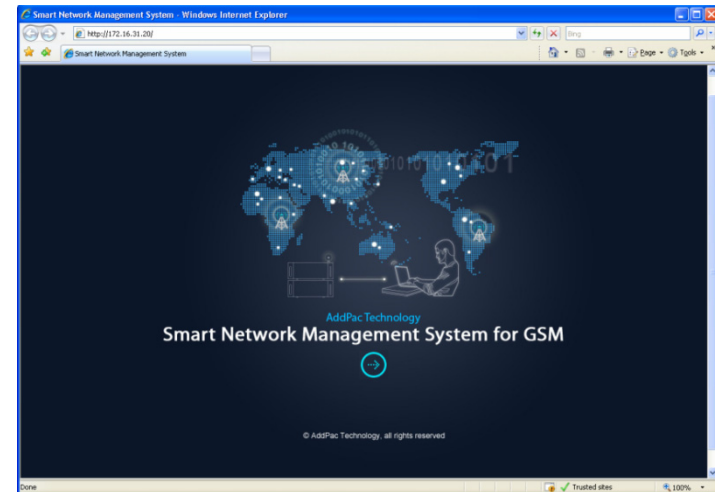
AddPac

AddPac Technology

2010, Sales and Marketing

Contents

- System Requirement
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 - GSM, VoIP Interface
 - Call History
 - Performance History & Monitoring
- Notification Management
- Fault Statistics
- **Call Statistics for GSM**
- Model & Service Management



System Requirement

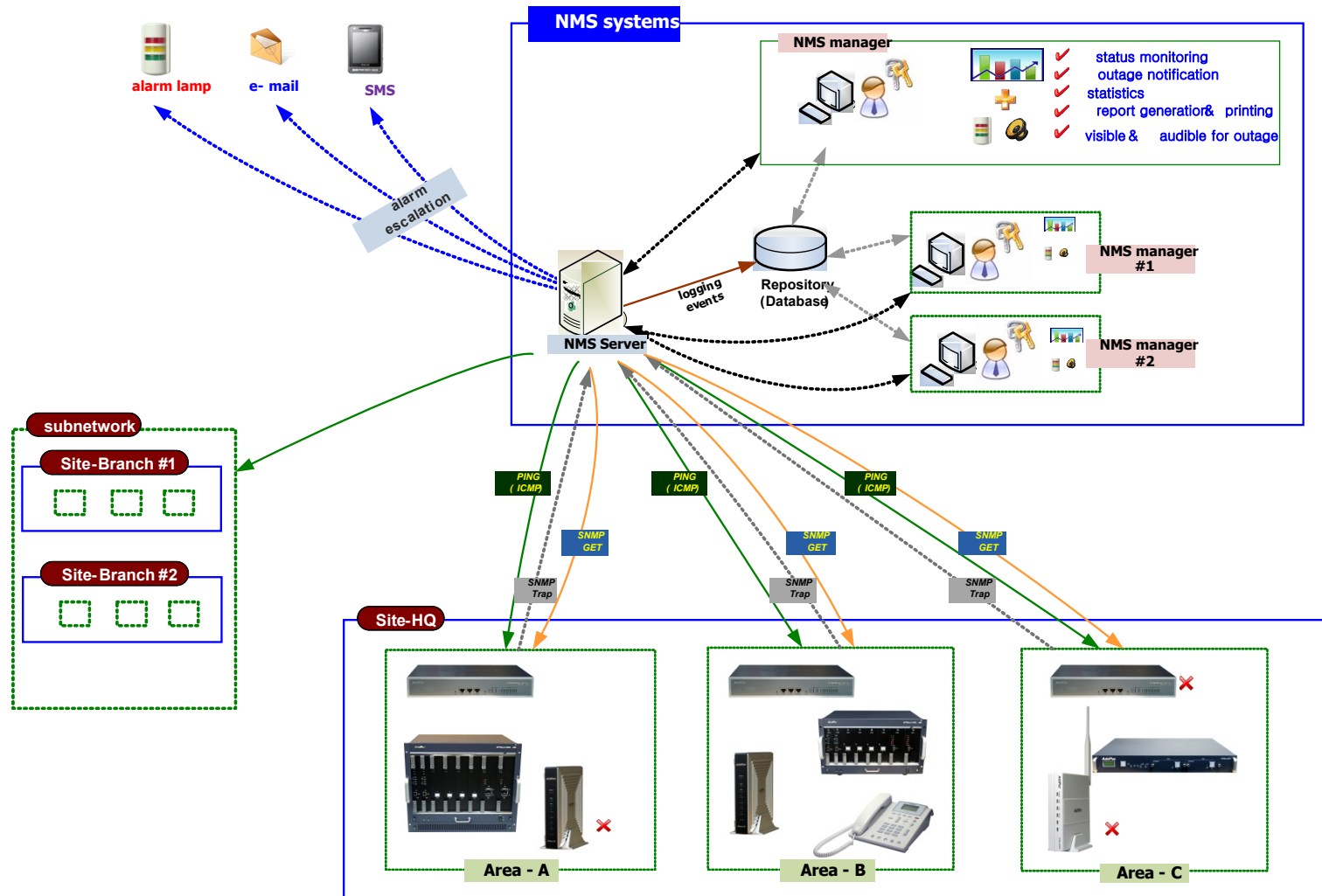
NMS Server

- 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

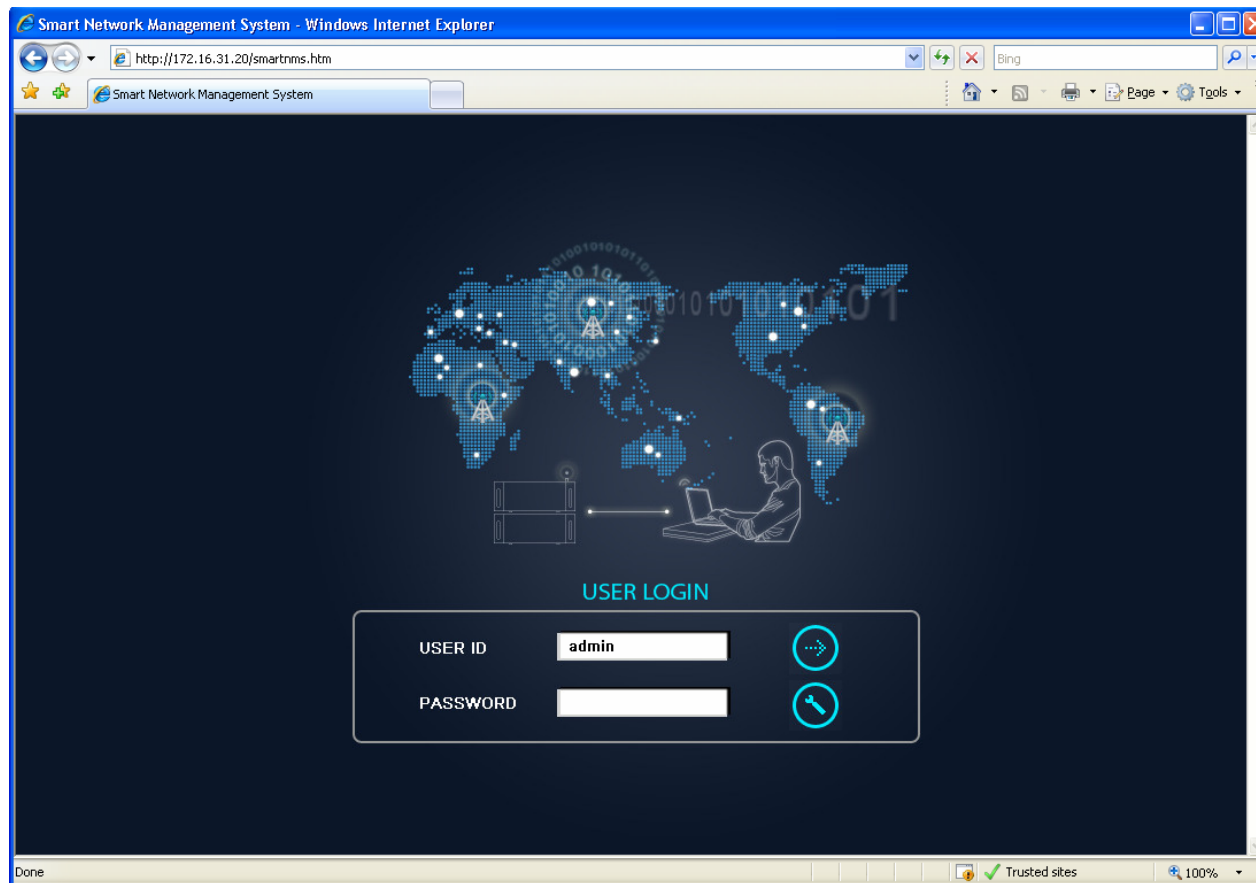
The screenshot displays a Windows Internet Explorer browser window titled "Smart Network Management System - Windows Internet Explorer" with the address bar showing "http://172.16.31.20/". The main content area features a dark blue background with a world map, server racks, and a person at a laptop. The text "AddPac Technology Network Management System for GSM" is prominently displayed. Two dialog boxes are overlaid on the browser:

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

Two yellow callout boxes with arrows point to specific elements:

- Automatic version check:** Points to the "Launching Application" dialog box.
- New S/W version update:** Points to the status bar at the bottom of the browser window, which shows "Done" and "Trusted sites".

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 structure shows the organization of network resources, including sites like 'AddPac' and 'Seoul', and various sub-networks and branches. A context menu is open over the tree, with 'Execute SMM' highlighted. In the center, a table lists device categories such as Desktop, Network Camera, Phone, Server, Switch, and VoIP Gateway. On the right, a 'User Properties' dialog box is open, showing a selection of site nodes for assignment to a user.

manage the complex network with a structured, hierarchical form

can assign the hierarchical node to the operator and manage role-based policy

can cooperate with the application executables such as SMM

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

current device fault list with hierarchy view

current device fault event message are shown as below

site device fault summary

overall total device fault statistics

device fault summary for category (classification)

Smart Network Management System - Windows Internet Explorer

http://172.16.31.20/smartnms.htm

NMS Account Configuration Monitoring Notification Fault Statistics View Help

Network Management System Smart NMS

Current Outage Devices (11) Site

Name	Service...	Availability
AddPac		
Branch AQ		
NMS Camera	6 of 12	46.937 %
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	32.740 %
IPNext 3000 ...	1 of 3	90.608 %
IPNext 3000 S...	1 of 3	90.623 %
UMS slave	3 of 3	0.000 %
HeadQuarter		
UMS server(o...	3 of 3	0.000 %
Subnetwork #2		
Center		
NMS_SOHO_...	2 of 2	98.115 %

Service Outages

Site	Type	Outages	Availability	Description
AddPac	Sub Netw...	28 / 10 / 32	53%	AddPac Technology C...
Seoul	Sub Netw...	2 / 1 / 2	98%	Seoul subnetwork

Overall Availability: 30 / 11 / 34 78.650 %

Device Categories

Category	Outages	Availability
Desktop	0 / 0 / 1	100%
Network Camera	6 / 1 / 2	54%
Phone	0 / 0 / 3	98%
Server	24 / 10 / 22	58%
Switch	0 / 0 / 0	100%
VoIP Gateway	0 / 0 / 6	98%

Overall Categories Availability: 30 / 11 / 34 61.282 %

Your Outstanding Notices (16)

Ack	ID	Send Time	Site	Device Name	IP Address	Service	Message
<input checked="" type="checkbox"/>	9502	4/10/2009 3:34:29 PM	/Subnetwork #2/Center	NMS_SOHO_PBX			device NMS_SOHO_PBX, all services are down
<input checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/>	9396	4/9/2009 10:57:37 AM	/AddPac/Branch AQ	NMS_IP_PBX_31.13			device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) not response or deleted by administrator
<input checked="" 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) service ICMP not response or deleted by administrator
<input checked="" 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 SNMP not response or deleted by administrator
<input checked="" 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 ICMP not response or deleted by administrator
<input checked="" 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 checked="" 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

4/10/2009 4:17:43 PM 172.16.31.20:5101 admin Version 1.2.3384

Device Fault Management

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.

Device Fault Management

The screenshot displays the Smart NMS interface in a Windows Internet Explorer browser. The main content area shows a 'Device Monitoring' view with a grid of device status icons. A red box highlights the grid, and a red arrow points to it with the text 'device status matrix with small view mode'. The grid contains various device icons, some with red 'X' marks indicating faults. Below the grid, a table lists '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_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	Call Manager	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 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

daily fault event summary statistics information

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

The screenshot displays the Smart Network Management System (NMS) interface. The top navigation bar includes NMS, Account, Configuration, Monitoring, Notification, Fault, Statistics, View, and Help. The main content area is divided into several sections:

- Notification Summary:** A table showing daily fault event statistics.

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
- Service Outages / Device Monitoring:** A table listing fault events with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, Message, and Respond Time.

Ack	ID	Send Time	Site	Device Name	IP Address	Service	Message	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	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.	4/10/2009 5:35:25 PM
<input type="checkbox"/>	9526	4/10/2009 5:33:42 PM	/AddPac/Branch GX	00_NR_server	172.17.11.1			4/10/2009 5:35:25 PM
<input type="checkbox"/>	9525	4/10/2009 5:21:06 PM	/AddPac/Branch GX	00_NR_server	172.17.11.1			4/10/2009 5:22:43 PM
<input type="checkbox"/>	9524	4/10/2009 5:17:29 PM	/AddPac/Branch GX	00_NR_server	172.17.11.1			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)				4/10/2009 4:03:13 PM
<input type="checkbox"/>	9521	4/10/2009 3:36:18 PM	/AddPac/HeadQuarter	PS_server(our co...				4/10/2009 4:03:13 PM
<input type="checkbox"/>	9520	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	RBT server(our company)				4/10/2009 4:03:13 PM
<input type="checkbox"/>	9519	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	UMS server #2				4/10/2009 4:03:13 PM
<input type="checkbox"/>	9518	4/10/2009 3:36:09 PM	/AddPac/HeadQuarter	Recording Server (our company)				4/10/2009 4:03:13 PM
<input type="checkbox"/>	9517	4/10/2009 3:36:08 PM	/AddPac/HeadQuarter	company_MCU_s...				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...				4/10/2009 4:03:13 PM
<input type="checkbox"/>	9514	4/10/2009 3:35:50 PM	/AddPac/Branch GX	00_PS_server				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				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)				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				4/10/2009 4:02:43 PM
- Advanced Search Dialog:** A modal window for filtering fault events. It includes fields for Sub Network, Site, IP Address Contains, Notice Status Type, Message Contains, Notices After, and Notices Before. The 'Sub Network' dropdown is currently set to 'AddPac'.
- Your Outstanding Notices (17):** A table listing active fault notifications with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

Device Fault History Management

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a table of device fault history with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, Message, Responder, and Respond Time. Two pop-up windows are visible: 'Troubleshooting Note' and 'Troubleshooting Note (Event ID : 45393)'. An orange callout box points to the 'Troubleshooting Note' window with the text 'Can write troubleshooting note if needed'.

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/HeadQuarter	5th floor meeting room phone device			device 5th floor meeting room phone device, all services are down.	to-acknowledged	4/10/2009 5:35:25 PM
<input type="checkbox"/>	9526	4/10/2009 5:33:42 PM	/AddPac/Branch GX					to-acknowledged	4/10/2009 5:22:43 PM
<input type="checkbox"/>	9525	4/10/2009 5:21:06 PM	/AddPac/Branch GX					to-acknowledged	4/10/2009 5:17:56 PM
<input type="checkbox"/>	9524	4/10/2009 5:17:29 PM	/AddPac/Branch GX					to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9522	4/10/2009 3:36:26 PM	/AddPac/HeadQuarter	IP-coor				to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9521	4/10/2009 3:36:18 PM	/AddPac/HeadQuarter	PB cor				to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9520	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	cor				to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9519	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	LUM				to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9518	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	Relou				to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9517	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	ter				to-acknowledged	4/10/2009 4:03:14 PM
<input type="checkbox"/>	9516	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9515	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:54 PM
<input type="checkbox"/>	9514	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	5th				to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9513	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	room				to-acknowledged	4/10/2009 4:02:44 PM
<input type="checkbox"/>	9512	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	IP				to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9511	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	172				to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9510	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	er=admin				to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9509	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9508	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9507	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9506	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9505	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9504	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9503	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9502	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9501	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9499	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9498	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9497	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9496	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9495	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter					to-acknowledged	4/10/2009 4:02:43 PM
<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.	to-acknowledged	4/10/2009 4:02:43 PM
<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.	to-acknowledged	4/10/2009 4:02:43 PM
<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.	to-acknowledged	4/10/2009 4:02:43 PM
<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	to-acknowledged	4/10/2009 4:02:43 PM
<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	to-acknowledged	4/10/2009 4:02:43 PM
<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	to-acknowledged	4/10/2009 4:02:43 PM

Current Device Fault (Outage)

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a tree view of the network structure on the left, including sites like 'AddPac', 'Branch AQ', 'Branch GX', 'HeadQuarter', and 'Subnetwork #2'. The central pane displays a table of 'Current Outage Devices' with columns for Name, Service, Availability, Outage ID, Site, Device Name, IP Address, Service, and Time Down. A red box highlights the '00_RBT_server' device, which is down. An 'Event Detail (ID: 45412)' window is open, showing the event time (4/10/2009 9:26:04 PM), site (/AddPac/Branch GX), device name (00_RBT_server), and a 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.' Below the description is a 'Troubleshooting Note List' table with columns for Time, User, Status, and Note. A callout box points to this event detail window, stating 'Can view the event data related to the current device fault and can write troubleshooting note if needed'. Another callout box points to the 'Your Outstanding Notices' section at the bottom, stating 'Display the current all device faults'. The 'Your Outstanding Notices' section shows a list of 18 notices with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

Name	Service...	Availability	Outage ID	Site	Device Name	IP Address	Service	Time Down
AddPac			13968	/AddPac/Branch GX	00_RBT_server	172.17.114.60	Media	4/10/2009 9:26:04 PM
Branch AQ			13967	/AddPac/Branch GX	00_RBT_server	172.17.114.60	Media	4/10/2009 9:26:04 PM
NMS Camera	6 of 12	50.000 %	13966	/AddPac/Branch GX	00_RBT_server	172.17.114.60	ICMP	4/10/2009 9:26:04 PM
NMS_IP_PBX...	3 of 3	0.000 %	13948	/AddPac/HeadQuarter	5th floor meeting room p...	172.16.53.101	ICMP	4/10/2009 5:34:10 PM
Branch GX			13907	/Subnetwork #2/Cent.	NMS_SOHO_PBX	172.16.19.50	ICMP	4/10/2009 3:34:29 PM
00_IVR_server	3 of 3	0.000 %	13906	/Subnetwork #2/Cent.	NMS_SOHO_PBX	172.16.19.50	SNMP	4/10/2009 3:34:29 PM
00_IVR_slave...	3 of 3	0.000 %	13896	/AddPac/Branch GX	IPNext 3000 Slave			
00_IVR_slave...	3 of 3	0.000 %	13895	/AddPac/Branch GX	IPNext 3000 Master			
00_PS_server	3 of 3	0.000 %	13802	/AddPac/Branch GX	00_IVR_server			
00_PS_slave...	2 of 3	33.333 %	13801	/AddPac/Branch GX	00_IVR_server			
00_RBT_server	3 of 3	0.000 %	13800	/AddPac/Branch GX	00_IVR_server			
IPNext 3000 ...	1 of 3	66.667 %	13773	/AddPac/Branch AQ	NMS_IP_PBX_31.13			
IPNext 3000 S...	1 of 3	66.667 %	13772	/AddPac/Branch AQ	NMS_IP_PBX_31.13			
UMS slave	3 of 3	0.000 %	13771	/AddPac/Branch AQ	NMS_IP_PBX_31.13			
HeadQuarter			13611	/AddPac/Branch AQ	NMS Camera			
5th floor meeti...	1 of 1	0.000 %	13610	/AddPac/Branch AQ	NMS Camera			
UMS serverfo...	3 of 3	0.000 %	13609	/AddPac/Branch AQ	NMS Camera			
Subnetwork #2			13608	/AddPac/Branch AQ	NMS Camera			
Center			13607	/AddPac/Branch AQ	NMS Camera			
NMS_SOHO_...	2 of 2	0.000 %	13606	/AddPac/Branch AQ	NMS Camera			
			9021	/AddPac/Branch GX	UMS slave			
			9020	/AddPac/Branch GX	UMS slave			
			9019	/AddPac/Branch GX	UMS slave			
			6489	/AddPac/Branch GX	00_PS_server			

Device Event History

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a list of events with columns for Event Time, Outsta., Ackno., Not Clea., Cleared, and In Pr. Below this is a detailed view of an event with columns for Ack, ID, Severity, Event Time, Site, Device Name, IP Address, Service, and Message. An orange callout box points to the search bar and filters, stating "Can view all events for devices with search condition". Another orange callout box points to the summary table, stating "summarize daily event statistics data".

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

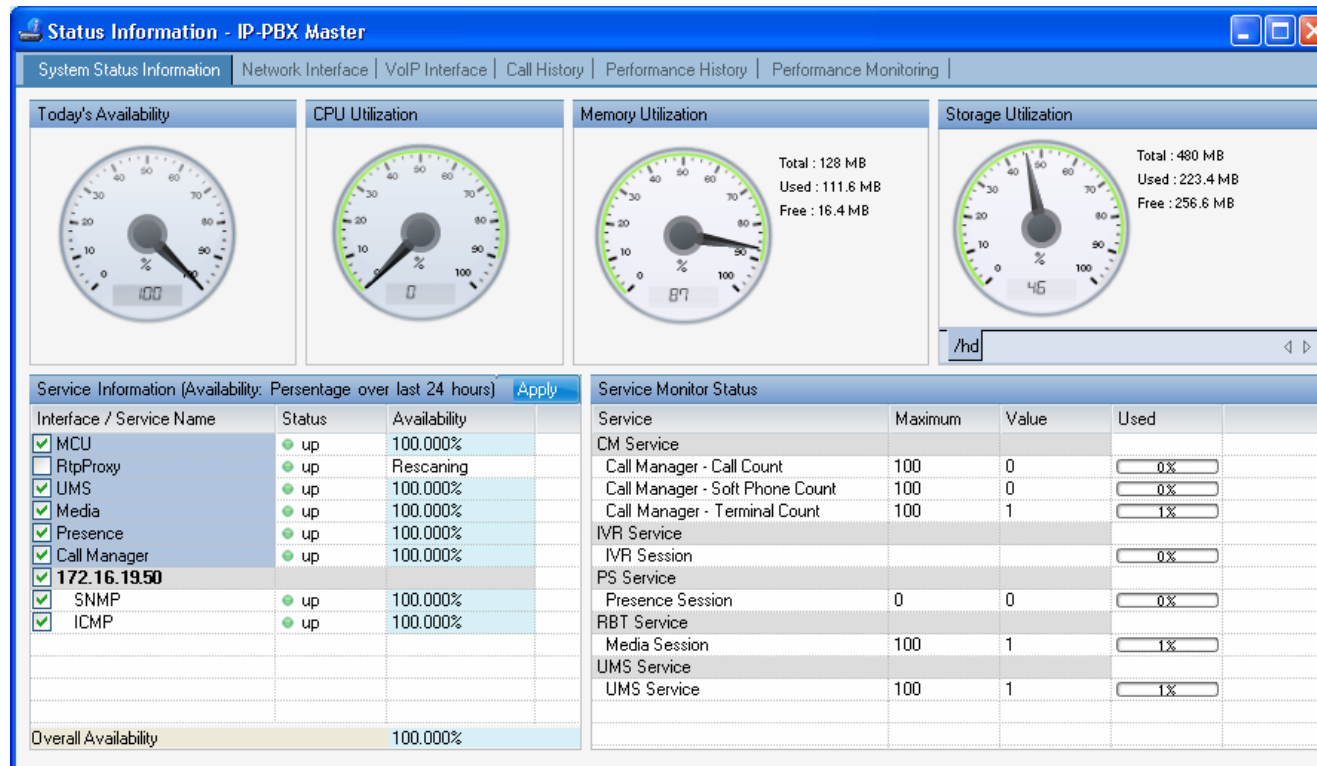
Ack	ID	Severity	Event Time	Site	Device Name	IP Address	Service	Message
<input type="checkbox"/>	45786	Critical	4/13/2009 11:24:42 AM	/AddPac/Branch GX	SE_MG3000N_A	172.17.111.25		Agent Up with enterprise: 1.3.6.1.4.1.4855.3.2.255 [1.3.6.1.4.1.4855.3.2.255] args [1]: 1.3.6.1.6.3.1.1.4.3.0="" 1.3.6.1.4.1.4855.3.2.255"
<input type="checkbox"/>	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.
<input type="checkbox"/>	45784	Cleared	4/13/2009 11:15:52 AM	/AddPac/Branch GX	00_NR_server			Node 00_NR_server is up.
<input type="checkbox"/>	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]: 1.3.6.1.4.1.4855.3.2.10" [1]: 1.3.6.1.6.3.1.1.4.3.0="" 1.3.6.1.4.1.4855.3.2.10"
<input type="checkbox"/>	45782	Critical	4/13/2009 11:15:13 AM	/AddPac/Branch GX	00_NR_server			Node 00_NR_server is down.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	45779	Warning	4/13/2009 10:00:15 AM	/Subnetwork #2/Cent...	NMS_IP_PBX_31...	172.16.31.16	SNMP	SNMP thresholding on interface 172.16.31.16 failed.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	45774	Warning	4/13/2009 9:59:36 AM	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	SNMP data collection on interface 172.16.19.50 failed.
<input type="checkbox"/>	45773	Warning	4/13/2009 9:59:33 AM	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	SNMP data collection on interface 172.16.19.50 failed.
<input type="checkbox"/>	45772	Warning	4/13/2009 9:59:32 AM	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	SNMP data collection on interface 172.16.19.50 failed.
<input type="checkbox"/>	45771	Warning	4/13/2009 9:59:27 AM	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	SNMP data collection on interface 172.16.19.50 failed.
<input type="checkbox"/>	45770	Warning	4/13/2009 9:59:24 AM	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	SNMP data collection on interface 172.16.19.50 failed.
<input type="checkbox"/>	45769	Warning	4/13/2009 9:59:23 AM	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	SNMP data collection on interface 172.16.19.50 failed.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.

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_SOHO_PBX			device NMS_SOHO_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) service Call Manager 2009-4-10 11:37:12 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) service Call Manager 2009-4-10 11:37:12 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 (172.16.253.118) not response or delete by administrator

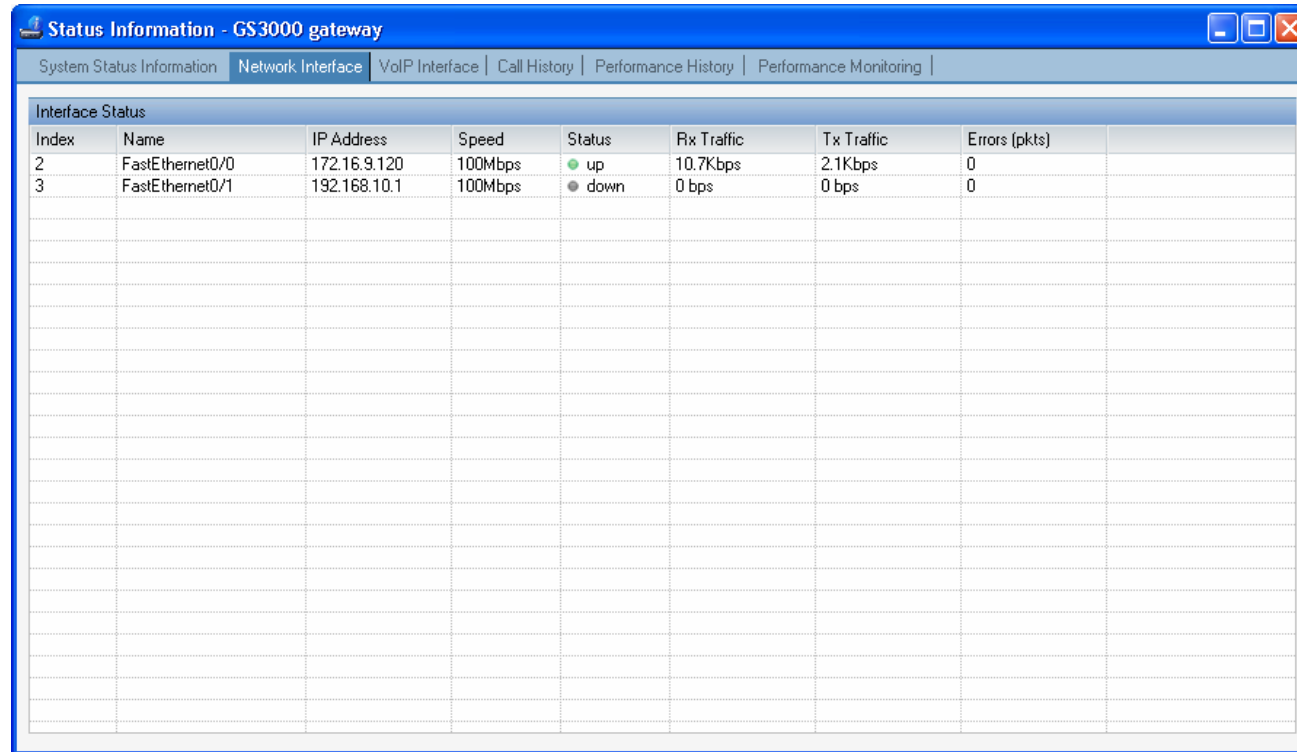
Device Status Information

- System Performance Information (CPU, HDD, Memory,...)
- Provide device current service status (up/down)
- Provide device main status (max value vs current value)
- Provide network interface status (up/down & network traffic)
- Provide VoIP interface status and call statistics.
- Search call history for the device and port
- Display Graph Series with System Performance Information
- Monitor Main Status Flow with System Monitoring View

System Status Information



Network Interface



The screenshot shows a web-based interface for a GS3000 gateway. The title bar reads "Status Information - GS3000 gateway". Below the title bar is a navigation menu with tabs for "System Status Information", "Network Interface", "VoIP Interface", "Call History", "Performance History", and "Performance Monitoring". The "Network Interface" tab is selected. The main content area is titled "Interface Status" and contains a table with the following data:

Index	Name	IP Address	Speed	Status	Rx Traffic	Tx Traffic	Errors (pkts)
2	FastEthernet0/0	172.16.9.120	100Mbps	● up	10.7Kbps	2.1Kbps	0
3	FastEthernet0/1	192.168.10.1	100Mbps	● down	0 bps	0 bps	0

VoIP Interface

You can view call summary informations such as total call, ASR, and ACD for the GSM gateway device each

The screenshot displays the 'Status Information - GS3000 gateway' web interface. The 'VoIP Interface' tab is selected, showing 'GSM Call Statistics' and 'VoIP Interfaces Status'.

GSM Call Statistics

Inbound Calls				Total			All Clear
VoIP	FXS	FXD	E1	Call	ASR (%)	ACD (sec)	
0	58	0	0	58	94 %	11	

VoIP Interfaces Status

Port	Line Type	Line Status	In Gain	Out Gain	Phone Number	GSM Phone Number	Inbound Calls (VoIP/FXS/FXD/E1)	ASR (%)	ACD (sec)
0/0	GSM	hookOn	0	0	5T		0 / 37 / 0 / 0	94%	5
0/1	GSM	hookOn	0	0	6T		0 / 21 / 0 / 0	95%	6
0/2	GSM	hookOn	0	0	7T		0 / 0 / 0 / 0	0%	0
0/3	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
1/0	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
1/1	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
1/2	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
1/3	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
2/0	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
2/1	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
2/2	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
2/3	GSM	hookOn	0	0			0 / 0 / 0 / 0	0%	0
7/0	FXS	hookOn	0	0	7000			0%	
7/1	FXS	hookOn	0	0				0%	
7/2	FXS	hookOn	0	0				0%	
7/3	FXS	hookOn	0	0				0%	
7/4	FXD	hookOn	0	0	1231			0%	
7/5	FXD	hookOn	0	0				0%	

ⓘ GSM call statistics (Inbound calls, ASR, ACD) was created in the device to collect data is displayed on the screen.

Call History

You can search call history with various conditions such as start date, end date, port and ip etc.

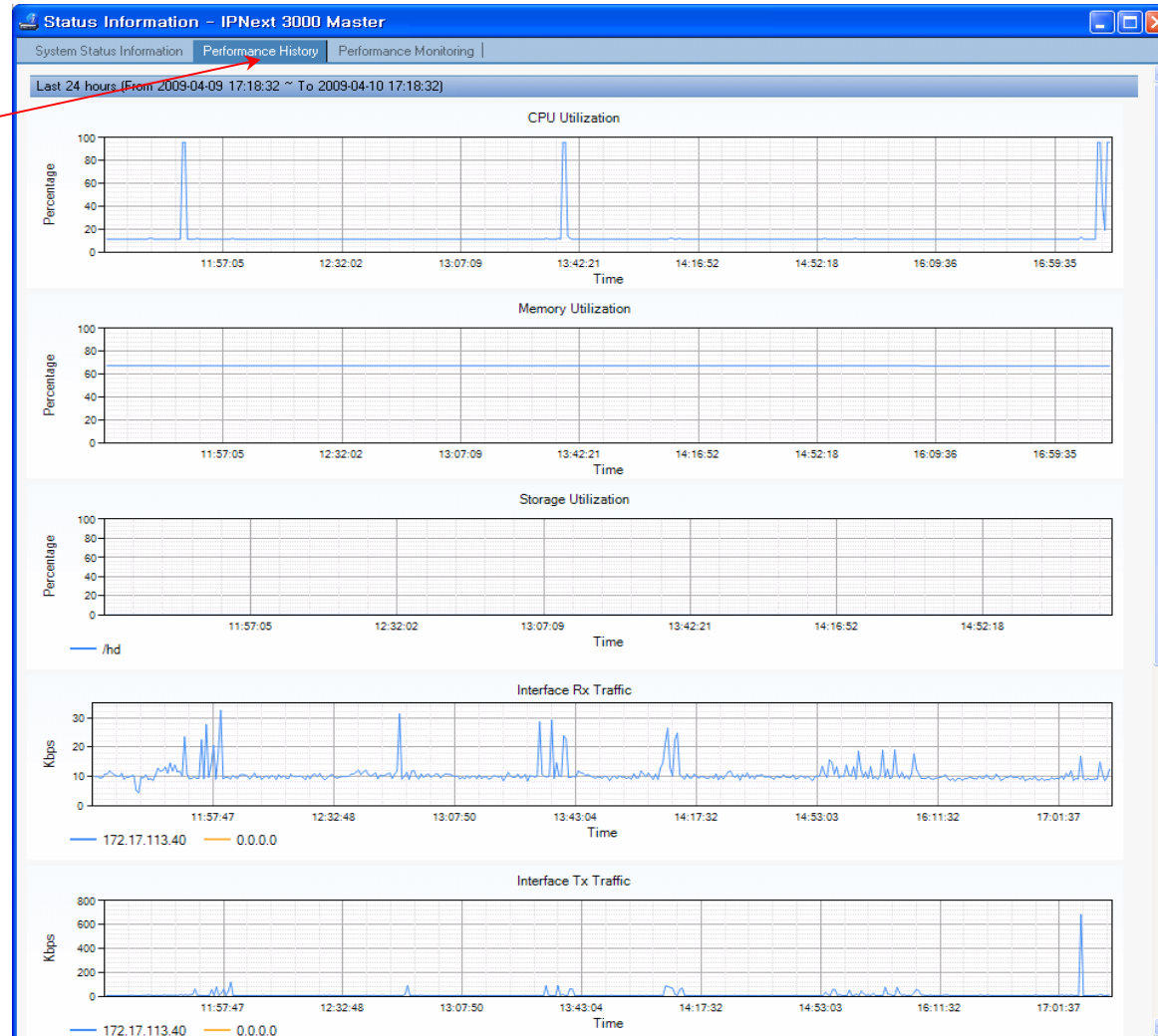
Device Call History

*Destination Port: <All> *Search Count: 153
*Period: 2010-11-18 10:15:01 ~ 2010-11-19 10:15:01
*Filter: Empty

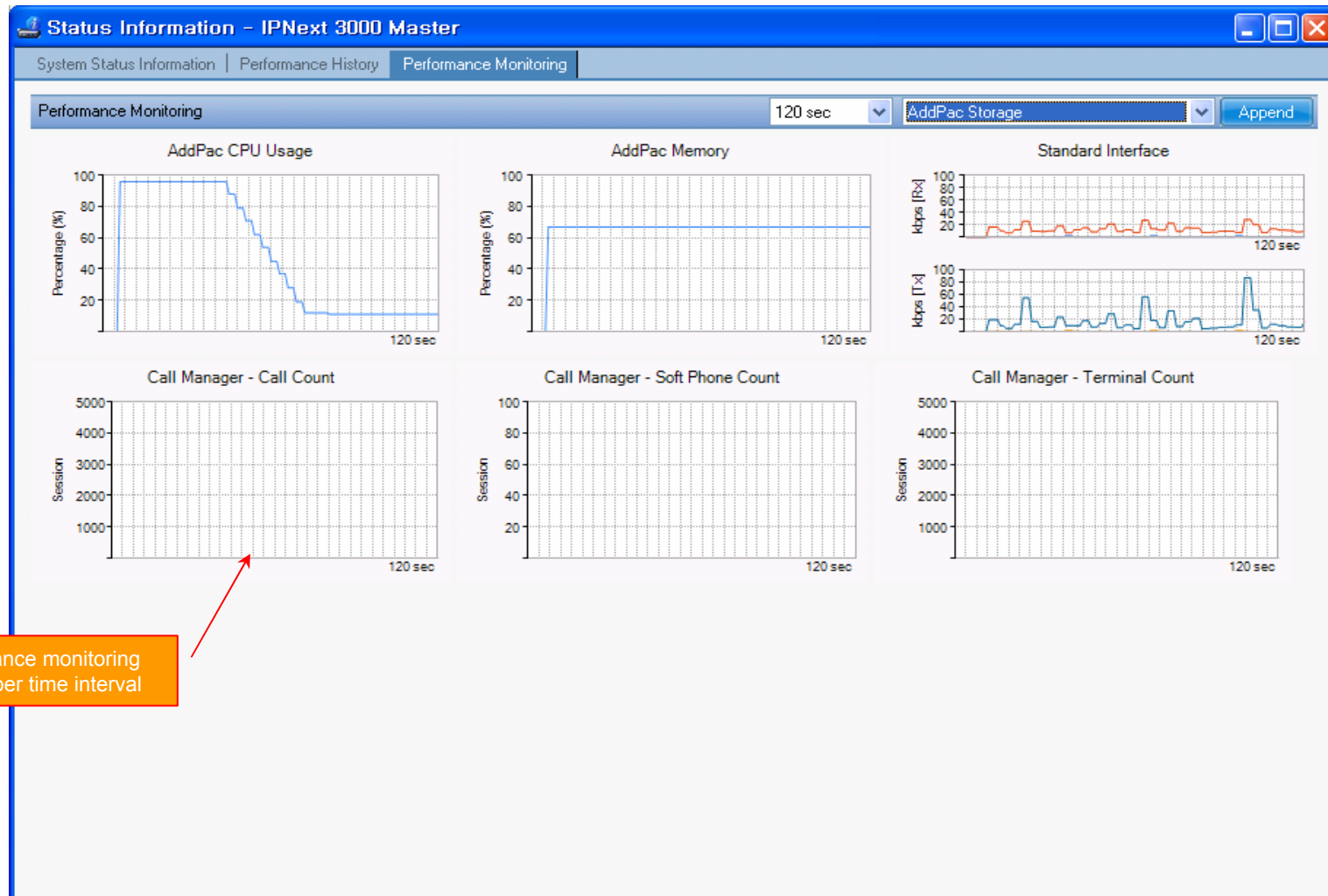
ID	Create Time	Duration	Caller Type	Caller Number	Called Type	Called Number	Remote IP	GSM Phone N...	Codec	Status
346	11/18/2010 3:54:50 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed
345	11/18/2010 3:50:43 PM	00:00:03	FXS	7000	VoIP	9999	172.16.9.18		g7231r63	Success
344	11/18/2010 3:46:54 PM	00:00:16	FXS	7000	GSM	6000			g711alaw	Success
343	11/18/2010 3:45:59 PM	00:00:02	FXS	7000	GSM	5000			g711alaw	Success
342	11/18/2010 3:43:33 PM	00:00:03	FXS	7000	VoIP	9999	172.16.9.18		g7231r63	Success
341	11/18/2010 3:43:23 PM	00:00:00	FXS	7000	GSM	600			g711alaw	Failed
340	11/18/2010 3:43:16 PM	00:00:00	FXS	7000	GSM	600			g711alaw	Failed
339	11/18/2010 3:43:12 PM	00:00:00	FXS	7000	GSM	500			g711alaw	Failed
338	11/18/2010 3:43:07 PM	00:00:00	VoIP	9999	FXS	7000	172.16.9.18		g7231r63	Failed
337	11/18/2010 3:42:32 PM	00:00:04	FXS	7000	VoIP	9999	172.16.9.18		g7231r63	Success
336	11/18/2010 3:25:48 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed
335	11/18/2010 3:21:05 PM	00:00:03	VoIP	9999	FXS	7000	172.16.9.18		g7231r63	Success
334	11/18/2010 3:20:57 PM	00:00:00	VoIP	9999	FXS	7000	172.16.9.18		g7231r63	Failed
332	11/18/2010 3:20:54 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed
330	11/18/2010 3:20:43 PM	00:00:02	FXS	7000	GSM	6000			g711alaw	Success
328	11/18/2010 3:20:30 PM	00:00:02	FXS	7000	GSM	5000			g711alaw	Success
325	11/18/2010 3:05:30 PM	00:00:03	FXS	7000	VoIP	9999	172.16.9.18		g7231r63	Success
324	11/15/2010 3:05:22 PM	00:00:00	VoIP	9999	FXS	7000	172.16.9.18		g7231r63	Failed
323	11/15/2010 3:05:11 PM	00:00:03	VoIP	9999	FXS	7000	172.16.9.18		g7231r63	Success
322	11/15/2010 3:05:08 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed

Performance History

performance analysis graph for last 24 hours



Performance Monitoring



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

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

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) | **Service Outages** | **Event Notification**

Name	Service...	Availability
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 ...	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 server(o...	3 of 3	0.000 %
Subnetwork #2		
NMS_SOHO_...	2 of 2	0.000 %

Notification Name	Event	Destination Path	Description
serviceUnresponsive	Node event: serviceUnresponsive	NMS Admin	test
serviceResponsive	Node event: serviceResponsive	NMS Admin	
interfaceDown	Node event: interfaceDown	NMS Admin	
nodeDown	Node event: nodeDown	NMS Admin	
interfaceUp	Node event: interfaceUp	NMS Admin	
nodeUp	Node event: nodeUp	NMS Admin	
nodeLostService	Node event: nodeLostService	NMS Admin	
nodeRegainedService	Node event: nodeRegainedService	NMS Admin	
coldStart	SNMP Cold Start	NMS Admin	
warmStart	SNMP Trap: SNMP Warm Start	NMS Admin	
authenticationFailure	SNMP Trap: SNMP Authen Failure	NMS Admin	
serviceDeleted	Node event: serviceDeleted	NMS Admin	
nodeAdded	Node event: nodeAdded	NMS Admin	
nodeInfoChanged	Node event: nodeInfoChanged	NMS Admin	
interfaceDeleted	Node event: interfaceDeleted	NMS Admin	
High Threshold	highThresholdExceeded	NMS Admin	
Low Threshold	lowThresholdExceeded	NMS Admin	
Low Threshold Rearmed	lowThresholdRearmed	NMS Admin	
High Threshold Rearmed	highThresholdRearmed	NMS Admin	

Event Notification Properties

Notification Name:

Description:

Event:

Destination Path:

Notification Type:

Current Rule:

Apply Category:

- Desktop
- Network Camera
- Phone
- Server
- Switch

Email Subject:

Text Message:

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

Total event notifications : 19

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: 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		

4/13/2009 9:52:03 AM | 172.16.31.20:5101 | admin | Version 1.2.3384

Event Notification Management

The screenshot shows the Smart Network Management System (NMS) interface. The main window displays a tree view of network devices and their service availability. A dialog box titled "Destination Path Properties" is open, showing configuration options for a destination path named "default".

The "Destination Path Properties" dialog includes the following sections:

- Destination Path Name:** default
- Initial Target:** (empty)
- Initial Delay:** 0m
- Notification Type Table:**

Notification Type	Target	Auto Notify
alarmLamp	alarmLamp	on
email	admin	on
sms	admin	on
- Escalation:** (empty)
- Delay:** 0m

A red callout box with the text "define notification channel such as e-mail, sms, or alarmlamp" points to the "alarmLamp" entry in the Notification Type table.

At the bottom of the interface, there is a "Your Outstanding Notices (18)" table:

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_RB_T_server			device 00_RB_T_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_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_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

Event Notification Management

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

Add Edit Delete

Destination Path Name: default

onlyAlarmLamp

Destination Path Properties

Destination Path Name: default

Initial Target: Initial Delay: 0m

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

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

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

Name	Service...	Availability
Branch AQ		
NMS_Camera	6 of 12	50.000 %
NMS_IP_PBX...	3 of 3	0.000 %
Branch GK		
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_FBT_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 server(o...	3 of 3	0.000 %
Subnetwork #2		
Center		
NMS_SOHD_...	2 of 2	0.000 %

Destination Path Name: default, onlyAlarmLamp

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

global notification channel configuration

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 GK	00_FBT_server			device 00_FBT_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_SOHD_PBX			device NMS_SOHD_PBX, all services are down
<input type="checkbox"/>	9495	4/10/2009 11:37:12 AM	/AddPac/Branch GK	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 GK	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 GK	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	92%	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%
VoIP Gateway	0 / 0 / 6	100%

Overall Availability	Count	Percentage
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/Cent...	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 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
<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 condition panel with filters for 'Hour' (4/ 9/2009) and 'Site' (Branch A, Branch AQ, B). Below this is a bar chart titled 'Fault Statistics (Site)' showing fault counts over time for various sites. A detailed data table for '4/9/2009' provides a breakdown of fault counts by site and time. The bottom section shows a list of 'Your Outstanding Notices (18)' with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

Table 1: Event Summary (Left Panel)

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

Table 2: Fault Statistics (Site) - 4/9/2009

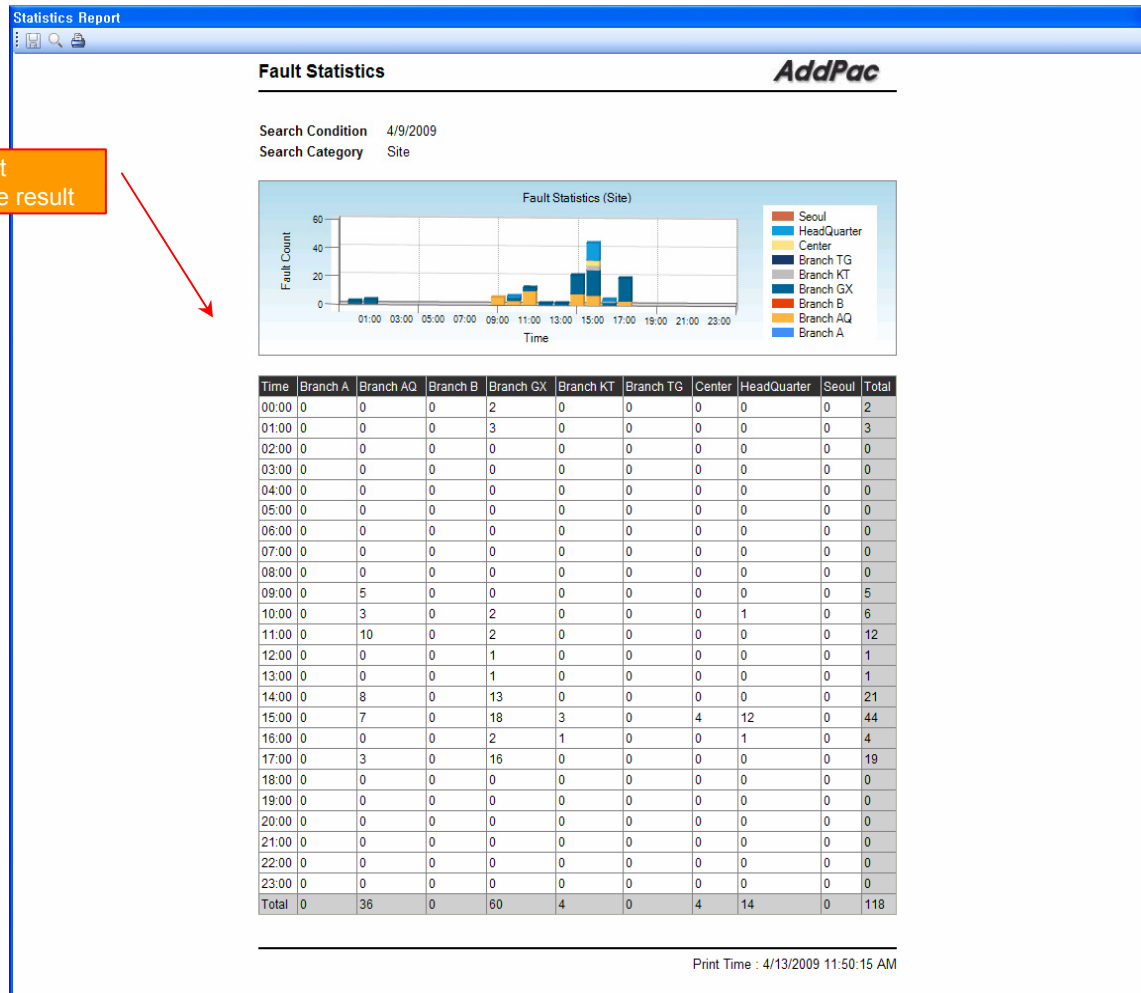
Time	Branch A	Branch AQ	Branch B	Branch GX	Branch KT	Branch TG	Center	HeadQuarter	Seoul	Total
07:00	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0
09:00	0	5	0	0	0	0	0	0	0	5
10:00	0	3	0	2	0	0	0	0	0	6
11:00	0	10	0	2	0	0	0	1	0	12
12:00	0	0	0	1	0	0	0	0	0	1
13:00	0	0	0	1	0	0	0	0	0	1
14:00	0	8	0	13	0	0	0	0	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	1	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

Table 3: Your Outstanding Notices (18)

Ack	ID	Send Time	Site	Device Name	IP Address	Service	Message
	9535	4/10/2009 9:26:04 PM	/AddPac/Branch GX	00_RBT_server			device 00_RBT_server's all services are down.
	9527	4/10/2009 5:34:10 PM	/AddPac/HeadQuarter	5th floor meeting...			device 5th floor meeting room phone device, all services are down.
	9502	4/10/2009 3:34:29 PM	/Subnetwork: #2/Cent...	NMS_SDHO_PBX			device NMS_SDHO_PBX, all services are down
	9505	4/10/2009 11:23:13 AM	/AddPac/Branch GX	IPNext 3000 Slave	172.17.113.41	Call	interface 172.17.113.41 (172.17.113.41) device (IPNext 3000 Slave) service

Fault Statistics – Report Generation

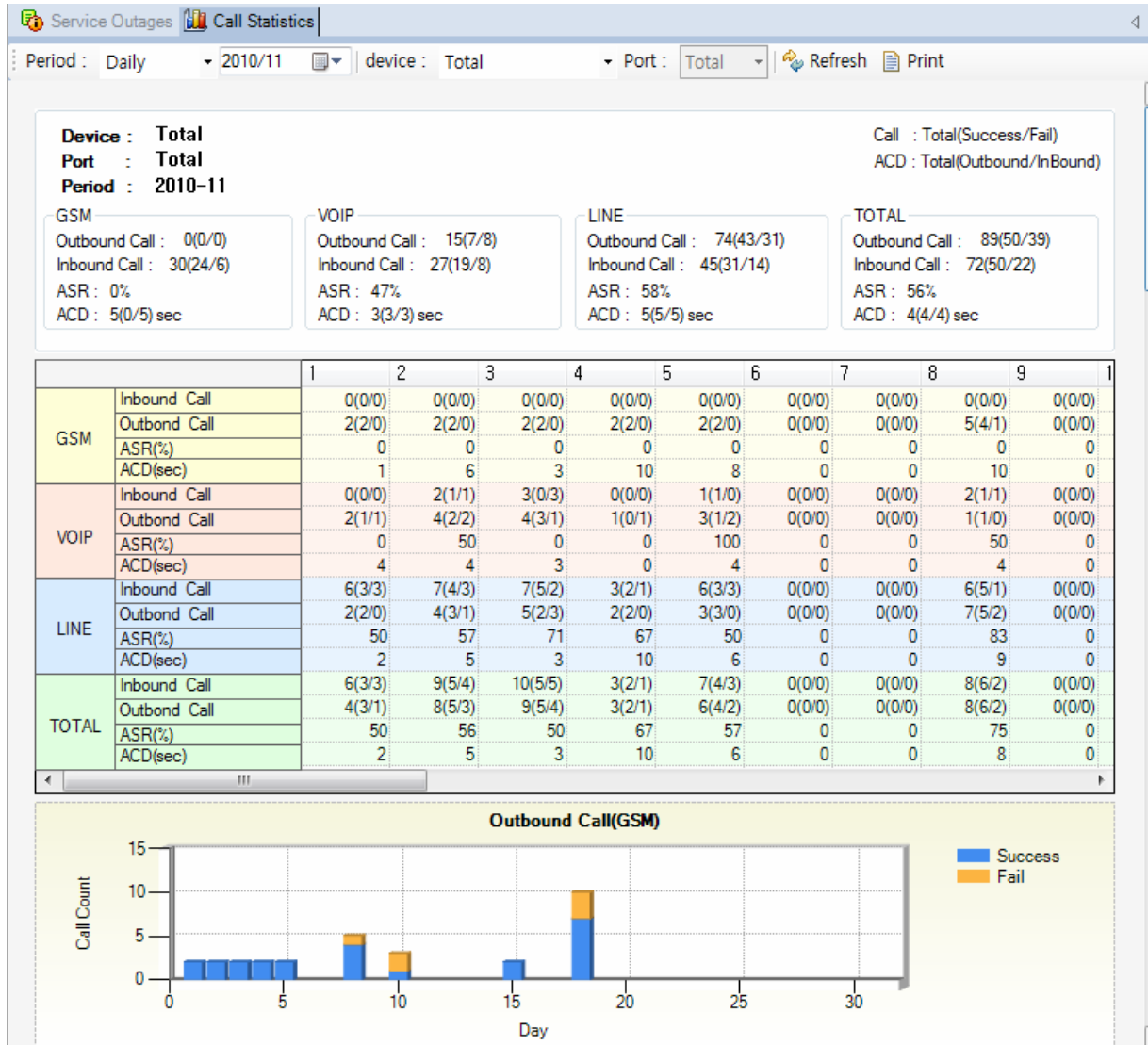
report generation for fault statistics and print out the result



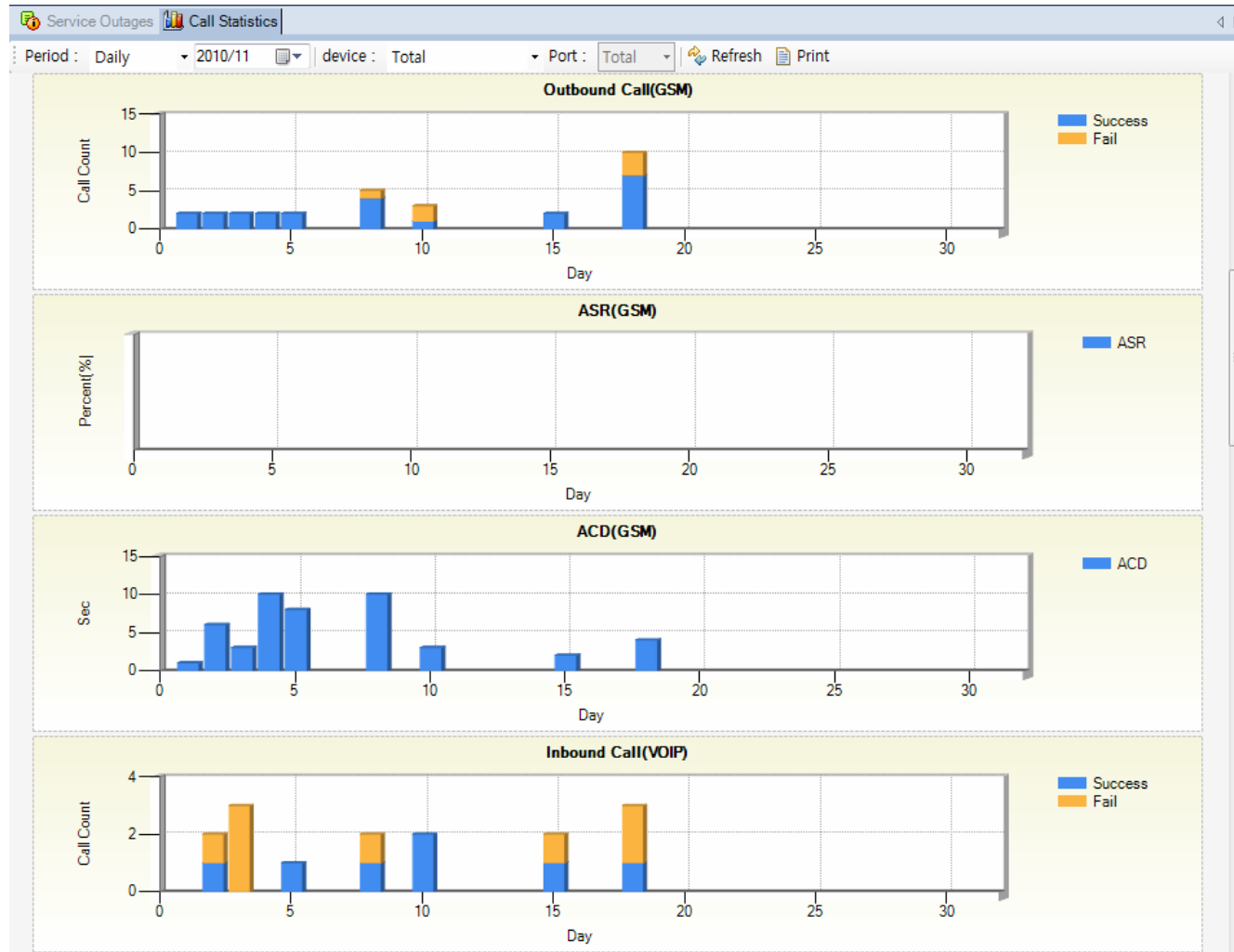
Call Statistics

- SmartNMS receives CDR data for calls which is used for call statistics from the VOIP or GSM gateway.
- You can get statistics data with various time interval conditions such as daily and monthly basis for the device and VOIP port.
- Report statistics can be exported to the various document formats such as PDF and MS-Excel.

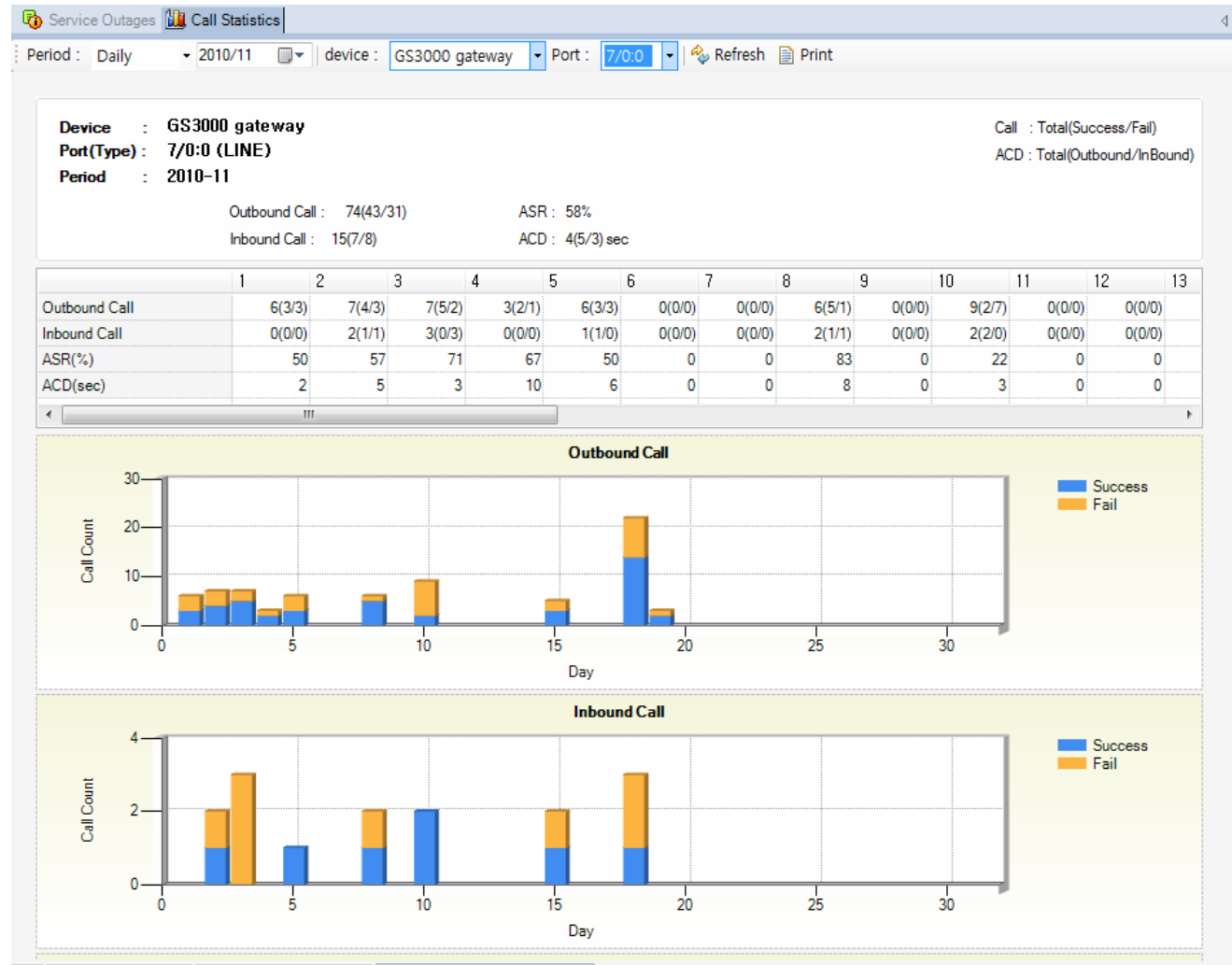
Call Statistics



Call Statistics



Call Statistics



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
Branch B	
GangNamGu	GangNamGu
Branch TG	Yeoksam Area
SeoChoGu	seoul seocho district
Seoul West Area	Seoul West Area
Gangseo Area	Gangseo 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
IPNext100	Server
IPNext1000	Server
IPNext180	Server
IPNext200	Server

Device Model Properties

General Service Availability System Monitoring Service Monitoring

Model Name: AP-IPC250M

Category: Network Camera

Management by SSCP:

SSCP Port: 5061 (1~65535)

Model Image:

Model Image Management

model image repository for selection

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 se
<input type="checkbox"/>	9502	4/10/2009 3:34:29 PM	/Subnetwork_#2/Cent...	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 (If
<input type="checkbox"/>	9494	4/10/2009 11:37:12 AM	/AddPac/Branch GX	IPNext 3000 Master	172.17.113.4		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 (If
<input type="checkbox"/>	9396	4/9/2009 10:57:37 AM	/AddPac/Branch AQ	NMS_IP_PBX_3...			53.118
<input type="checkbox"/>	9239	4/6/2009 7:49:20 PM	/AddPac/Branch AQ	NMS Camera 2	172.16.253.1		
<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
<input type="checkbox"/>	9237	4/6/2009 7:49:20 PM	/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	ICMP 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

Service Definition

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

Service Name	Protocol	Port
Call Manager	SNMP	161
Presence	SNMP	161
Media	SNMP	161
NMS	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 Name	Protocol	Port
Call Manager	SNMP	161
Presence	SNMP	161
Media	SNMP	161
NMS	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

Site	Device Name	IP Address	Service	Message
/AddPac/Branch GX	00_RB_T_server		Call Manager	device 00_RB_T_serv
/AddPac/Branch GX	5th floor meeting...		Call Manager	device 5th floor meet
/Subnetwork #2/Cent...	NMS_SDHD_PBX		Call Manager	device NMS_SDHD_PBX
/AddPac/Branch GX	IPNext 3000 Slave	172.17.113.41	Call Manager	interface 172.17.113.
/AddPac/Branch GX	IPNext 3000 Master	172.17.113.40	Call Manager	Call Manager 2009-4-
/AddPac/Branch GX	00_IVR_server		Call Manager	interface 172.17.113.
/AddPac/Branch AQ	NMS_IP_PBX_3...		Call Manager	service Call Manager
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	device 00_IVR_serv
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	device NMS_IP_PBX_3
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	device (NMS_Camera
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	response or delete by
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	device (NMS_Camera
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	SNMP not response o
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	device(NMS_Camera
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	ICMP not response o
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	device(NMS_Camera
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	ICMP not response o



Thank you!

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