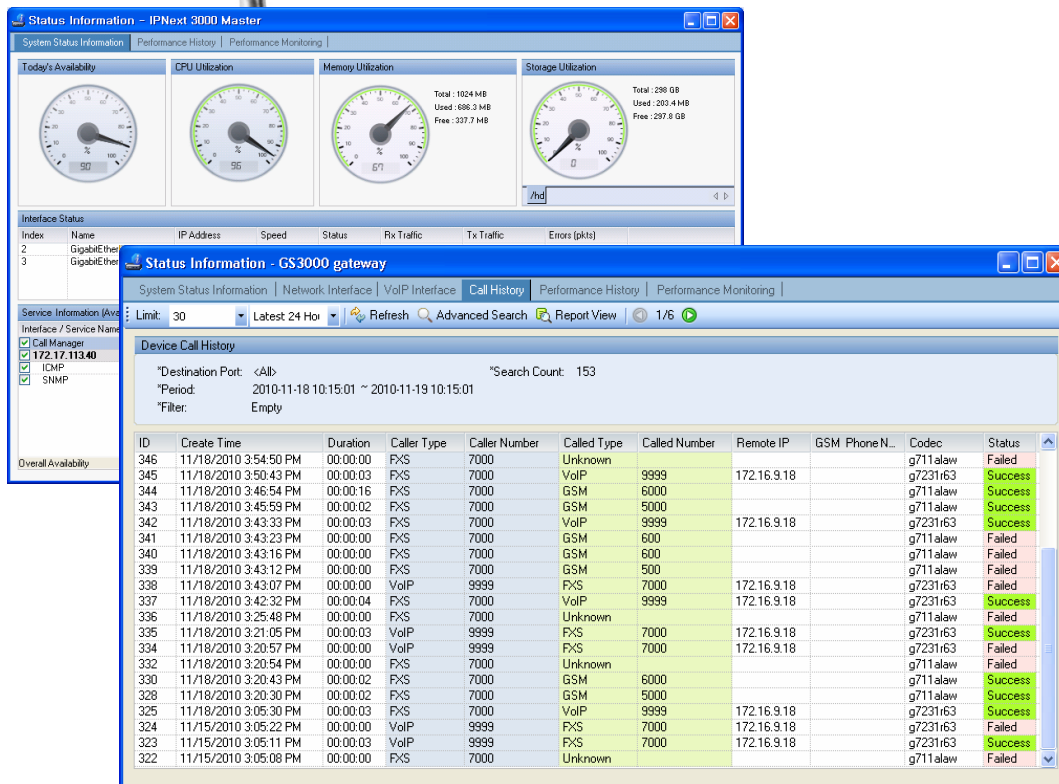


# Smart GSM NMS

## Smart Network Management System

### Smart GSM NMS Overview



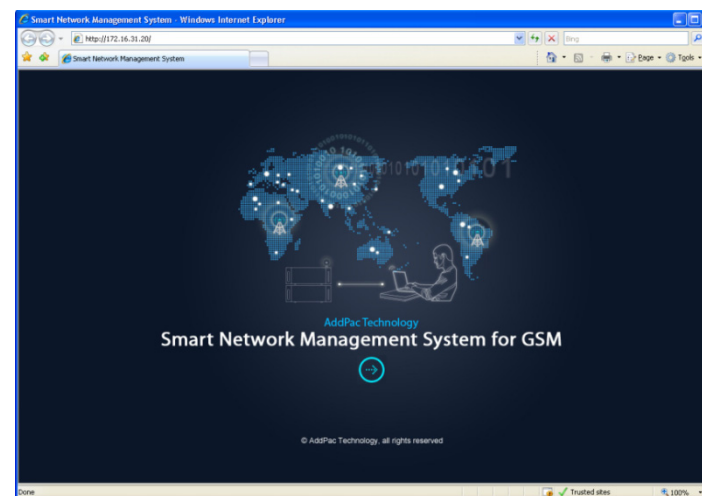
# AddPac

## AddPac Technology

2010, Sales and Marketing

# Contents

- System Requirement
- Smart NMS Networking Diagram
- Web-based Management
- Network Resource Management
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- **GSM Gateway Management**
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  - **Network Interface**
  - **GSM, VoIP Interface**
  - **Call History**
  - **Performance History & Monitoring**
- Notification Management
- Fault Statistics
- **Call Statistics for GSM**
- Model & Service Management



# System Requirement

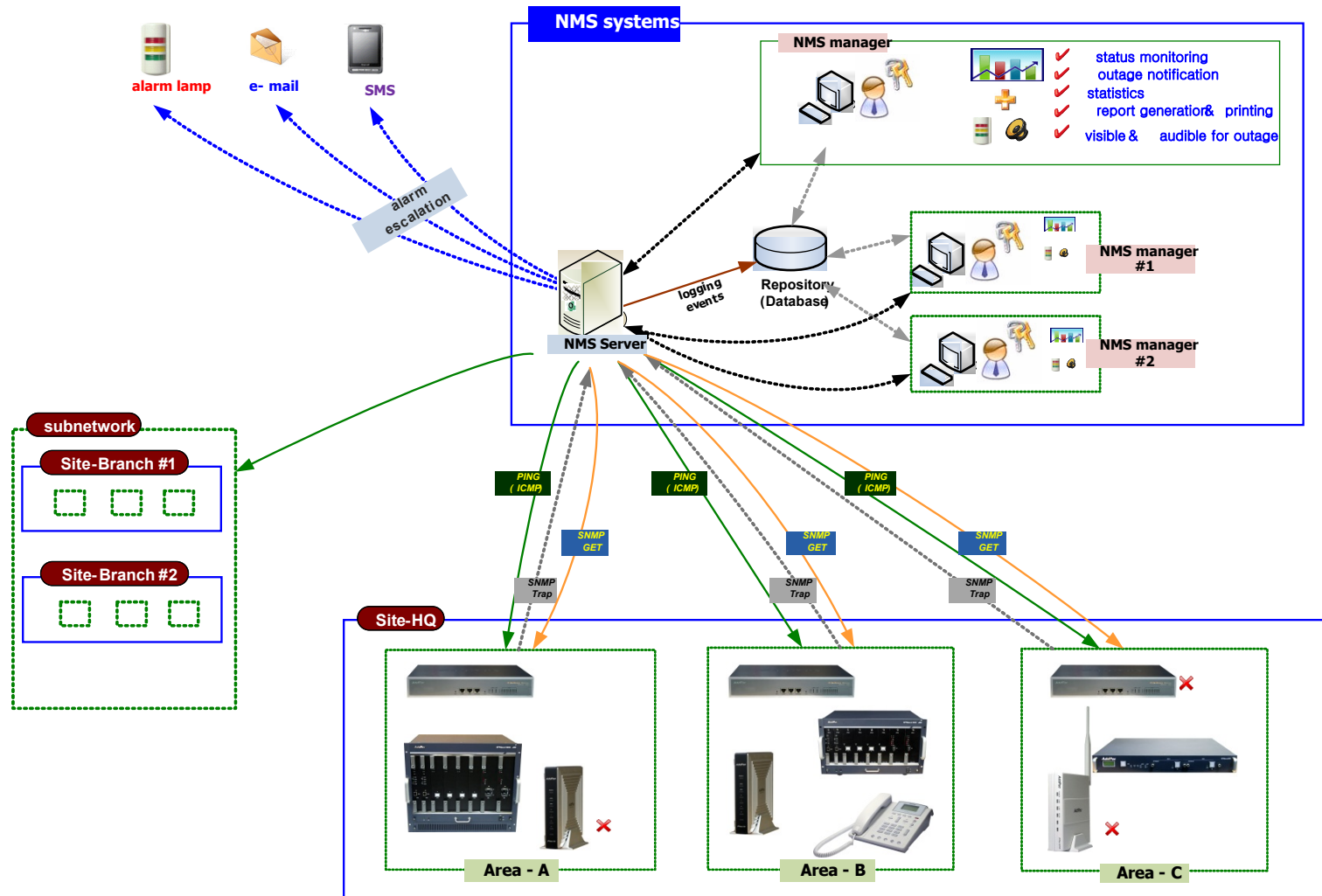
## **NMS Server**

- 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 icons, 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:

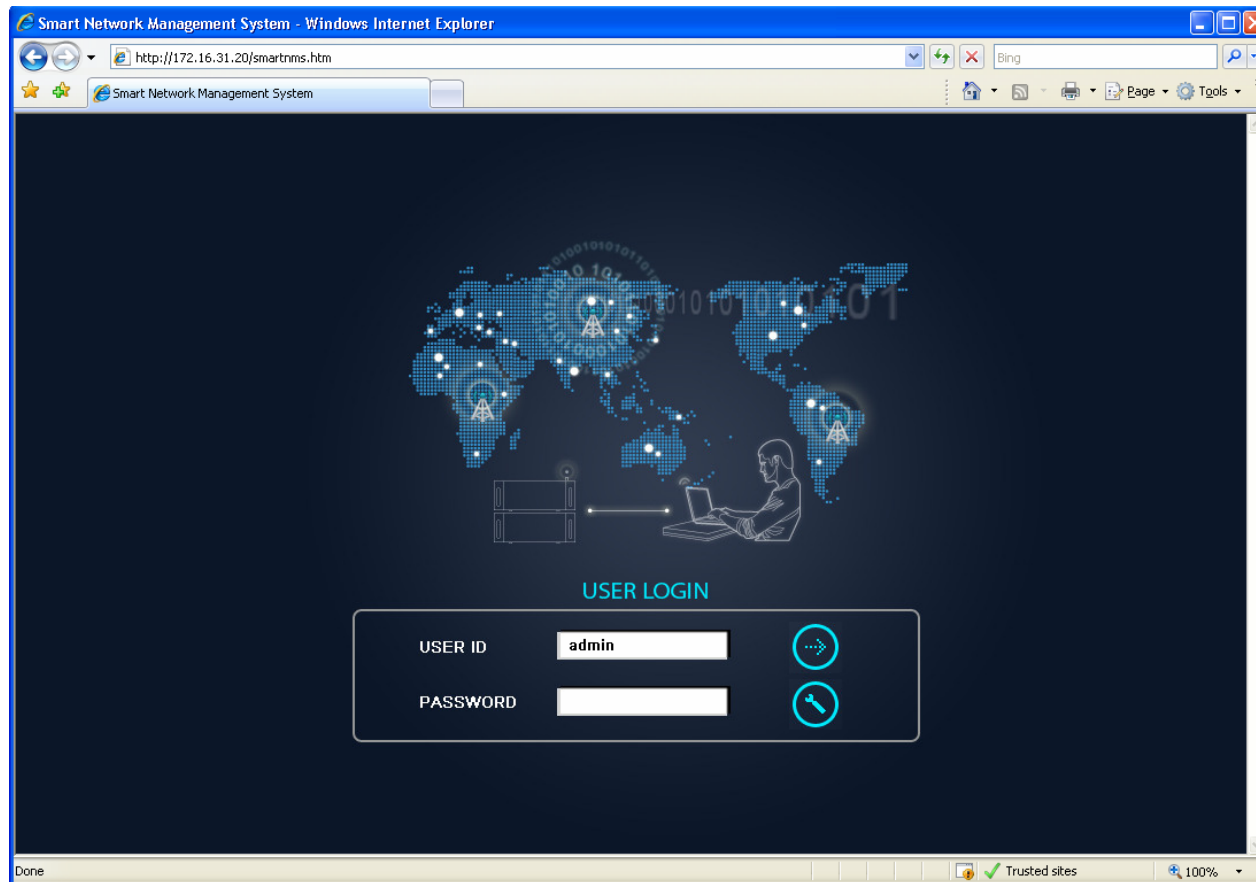
- Launching Application:** A blue dialog box with a close button. It contains a progress bar and the text: "Verifying application requirements. This may take a few moments."
- (61%) Downloading installnms:** A blue dialog box with a close button. It contains a progress bar and the text: "Downloading 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 "(61%) Downloading installnms" dialog box.

The browser's status bar at the bottom shows "Done", "Trusted sites", and "100%" zoom level.

# 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. Three orange callout boxes provide additional context: one points to the tree structure, another to the 'Execute SMM' menu item, and a third to the 'User Properties' dialog.

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

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)

Name	Service...	Availability
Branch AQ		
NMS Camera	6 of 12	48.994 %
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_NR_server	1 of 2	98.015 %
00_PS_server	3 of 3	0.000 %
00_PS_Slave...	2 of 3	32.703 %
IPNext 3000 ...	1 of 3	90.536 %
IPNext 3000 S...	1 of 3	90.584 %
UMS slave	3 of 3	0.000 %
HeadQuarter		
UMS serverfo...	3 of 3	0.000 %
Subnetwork #2		
Center		
NMS_SOHO_...	2 of 2	92.939 %

Service Outages

Device Monitoring - <All>

Group Type Value View Mode Refresh Import

Site <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

Total Monitoring Devices : 34

ACK ID	Send Time	Site	Device Name	IP Address	Service	Message
9525	4/10/2009 5:21:06 PM	/AddPac/Branch GX	00_IVR_server	172.17.111.21	SNMP	인터페이스 172.17.111.21 (172.17.111.21)의 장비명(00_IVR_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.

Your Outstanding Notices (17)

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 NMS interface within a Windows Internet Explorer browser. The main content area shows a 'Device Monitoring' view with a grid of device status icons. A red arrow points to two 'NMS Camera' devices in the grid, which are highlighted with a red box. A callout box next to the arrow contains the text: "device status matrix with small view mode".

Below the device grid, there is a table titled "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	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 summary 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 detailed fault events.
 

Ack	ID	Send Time	Site	Device Name	IP Address	Service	Message	Response	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_NR_server	172.17.11.1			auto-acknowledged	4/10/2009 5:22:43 PM
<input type="checkbox"/>	9525	4/10/2009 5:21:06 PM	/AddPac/Branch GX	00_NR_server	172.17.11.1			auto-acknowledged	4/10/2009 5:17:56 PM
<input type="checkbox"/>	9524	4/10/2009 5:17:29 PM	/AddPac/Branch GX	00_NR_server	172.17.11.1			auto-acknowledged	4/10/2009 4:03:13 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 co...				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 4:03:14 PM
<input type="checkbox"/>	9517	4/10/2009 3:36:08 PM	/AddPac/HeadQuarter	company_MCU_s...				auto-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9516	4/10/2009 3:36:00 PM	/AddPac/Branch GX	00_PS_Slave_ser...				auto-acknowledged	4/10/2009 4:02:54 PM
<input type="checkbox"/>	9514	4/10/2009 3:35:50 PM	/AddPac/Branch GX	00_PS_server				auto-acknowledged	4/10/2009 4:02:43 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 4:02:44 PM
<input type="checkbox"/>	9512	4/10/2009 3:35:41 PM	/AddPac/HeadQuarter	IP_PBX_Master (our company)				auto-acknowledged	4/10/2009 4:02:43 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:** A modal window for filtering fault events. It includes fields for Sub Network, Site, IP Address Contains, Notice Status Type, Message Contains, Level (Severity), Notices After, and Notices Before. The 'Sub Network' dropdown is currently set to 'AddPac'.
- Your Outstanding Notices (17):** A table listing current outstanding fault events.
 

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_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"/>	9386	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"/>	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.

# Device Fault History Management

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a table of events 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 (Event ID : 45393)' and 'Troubleshooting Note'. The latter has a text area containing the message: 'Fixed it manually. 2009-04-10 PM by Administrator.' An orange callout box with the text 'Can write troubleshooting note if needed' points to this text area.

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 in a Windows Internet Explorer browser. The main window shows a tree view of network devices on the left and a table of 'Current Outage Devices' on the right. An 'Event Detail' window is open, showing information for a specific event (ID: 45412).

**Current Outage Devices Table:**

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 ...	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_SOHO_...	2 of 2	0.000 %

**Event Detail (ID: 45412) Window:**

Event Time: 4/10/2009 9:26:04 PM  
 Site: /AddPac/Branch GX  
 Device Name: 00\_RBT\_server  
 Service: Media  
 Status: Down  
 Severity: Critical  
 Device Model: AP-RBT1000  
 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.

**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_RBT_server		device	device
<input type="checkbox"/>	9527	4/10/2009 5:34:10 PM	/AddPac/HeadQuarter	5th floor meeting...		device	device
<input type="checkbox"/>	9502	4/10/2009 3:34:29 PM	/Subnetwork #2/Cent...	NMS_SOHO_PBX		interf	interf
<input type="checkbox"/>	9495	4/10/2009 11:37:12 AM	/AddPac/Branch GX	IPNext 3000 Slave	172.17.113.41	Call Manager	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	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	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	device (NMS Camera 2) interface 172.16.253.118 (172.16.253.118) not response or delete by administrator



# Device Event History

The screenshot displays the Smart Network Management System (NMS) interface within a Windows Internet Explorer browser. The interface is divided into several sections:

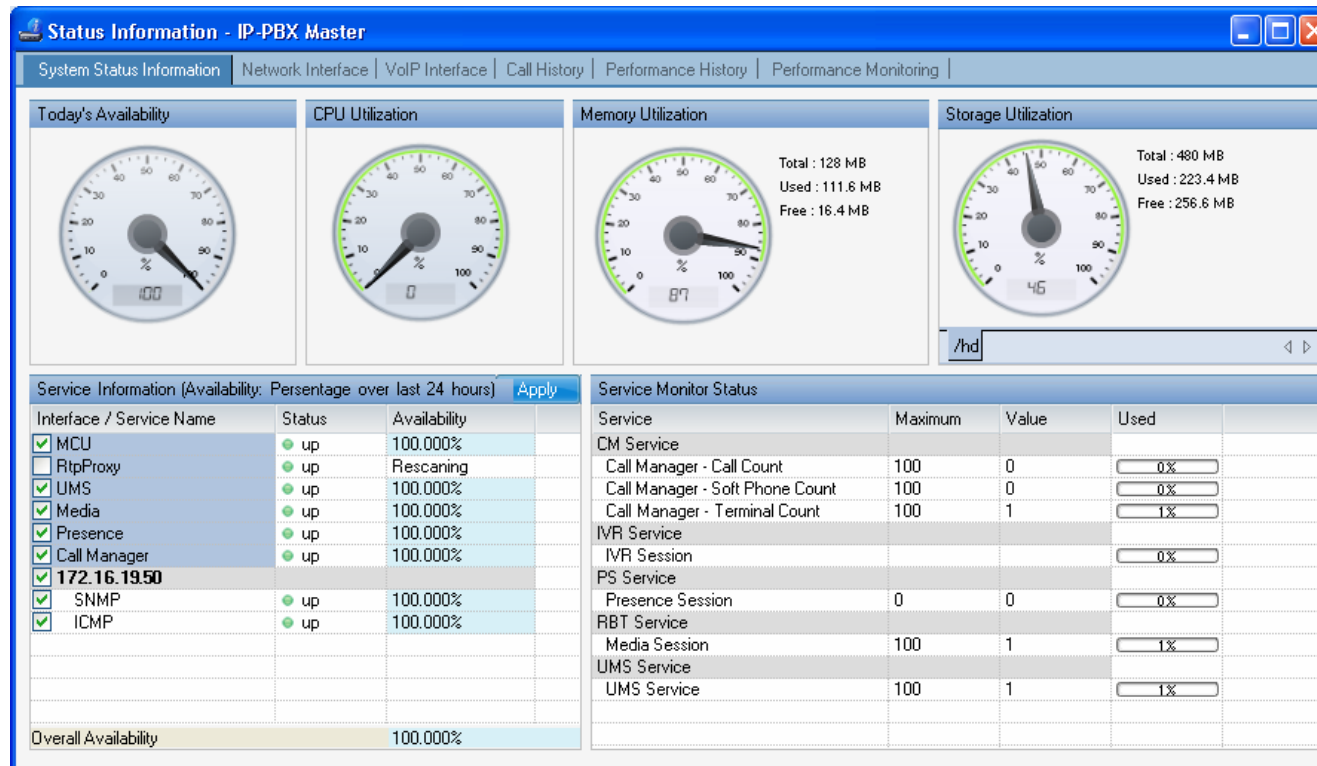
- Event Summary Table:** A table on the left provides a high-level overview of events, including columns for Event Time, Outsta., Ackno., Not Clea., Cleared, and In Pr.
- Main Event List:** A central table lists individual events with columns for ID, Severity, Event Time, Site, Device Name, IP Address, Service, and Message. An orange callout box points to this table with the text: "Can view all events for devices with search condition".
- Search and Filter Options:** Above the main event list, there are buttons for "Limit", "Refresh", "Advanced Search", "Acknowledge Events", and "Troubleshooting Note".
- Summary Table:** An orange callout box points to a table at the bottom left with the text: "summarize daily event statistics data". This table provides a detailed view of specific events, including Site, Device Name, IP Address, Service, and Message.

The interface also shows navigation tabs at the top (NMS, Account, Configuration, Monitoring, Notification, Fault, Statistics, View Help) and a status bar at the bottom indicating the current date and time (4/13/2009 11:46:45 AM) and user information (admin, Version 1.2.3384).

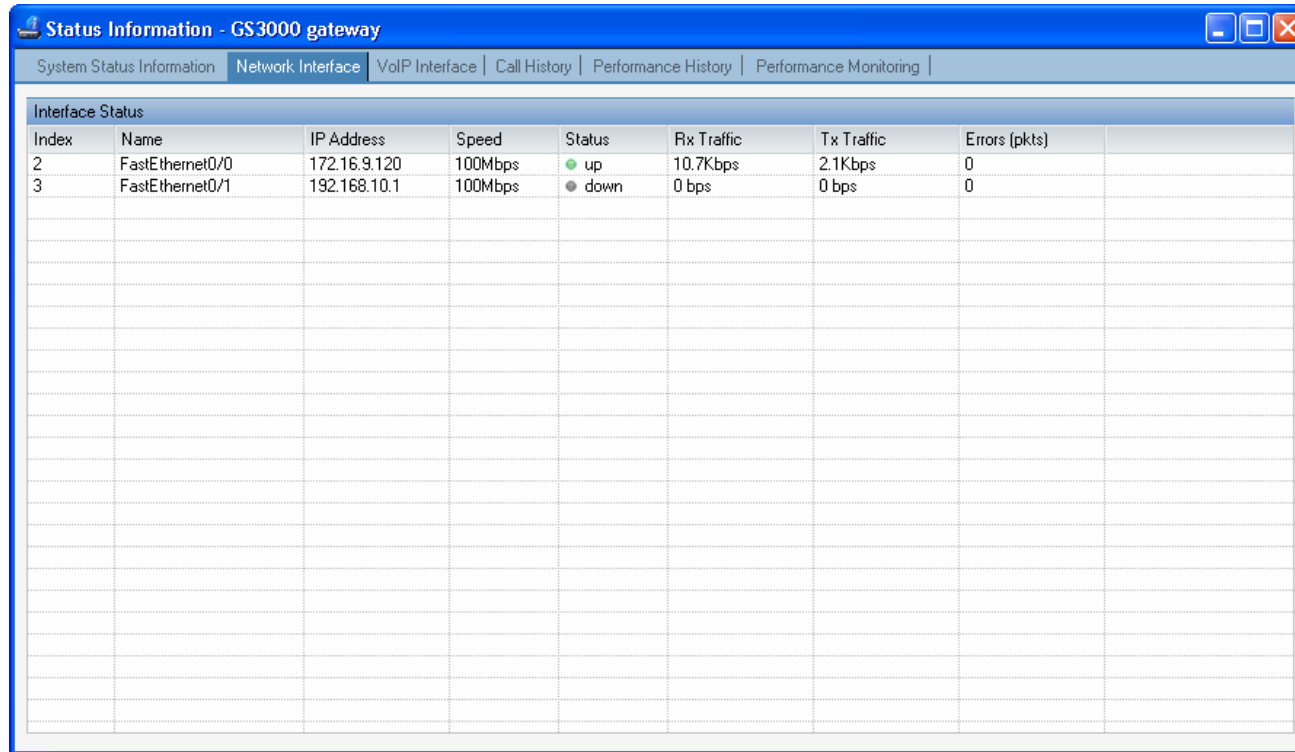
# Device Status Information

- 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.

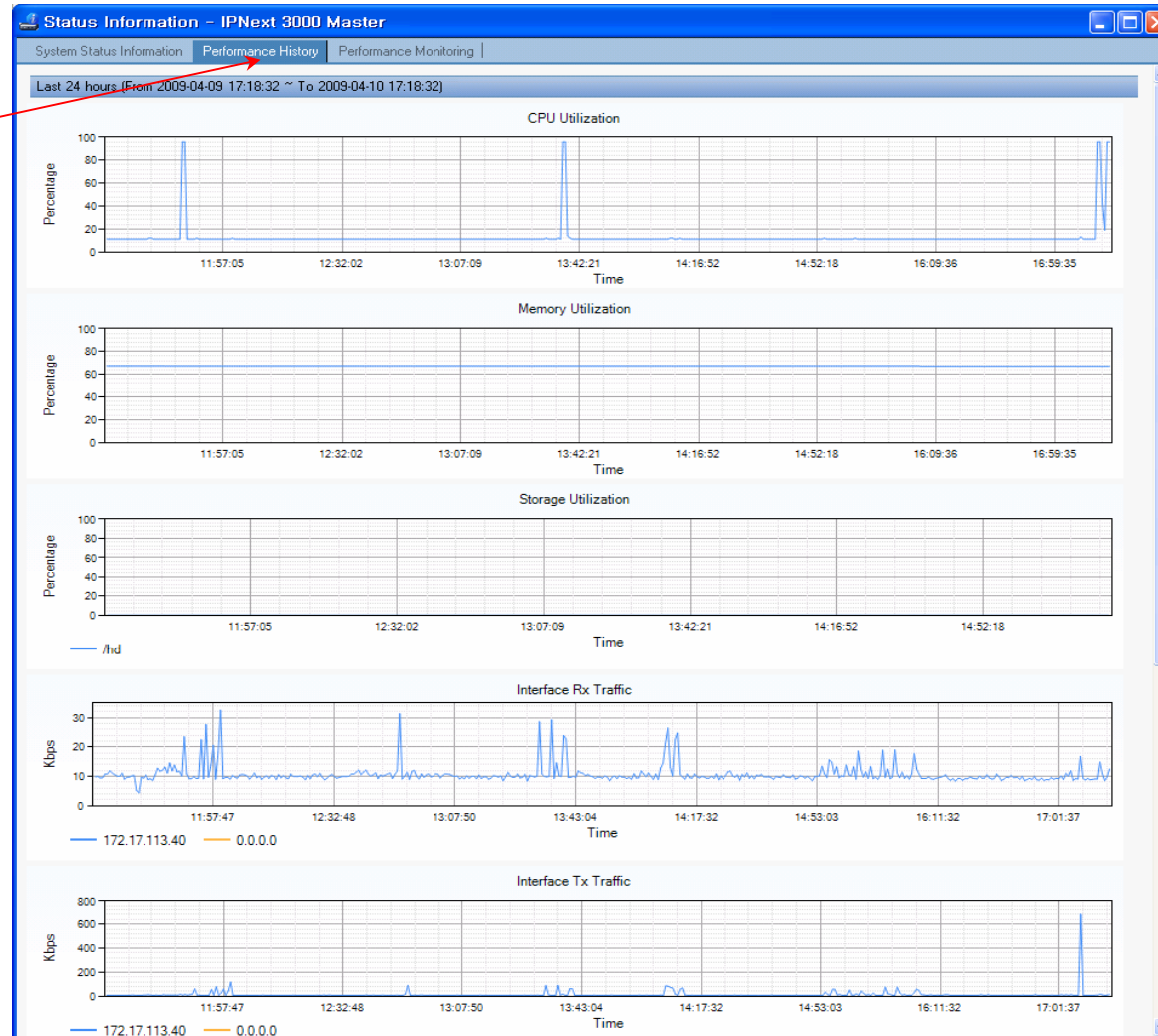
Device Call History

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

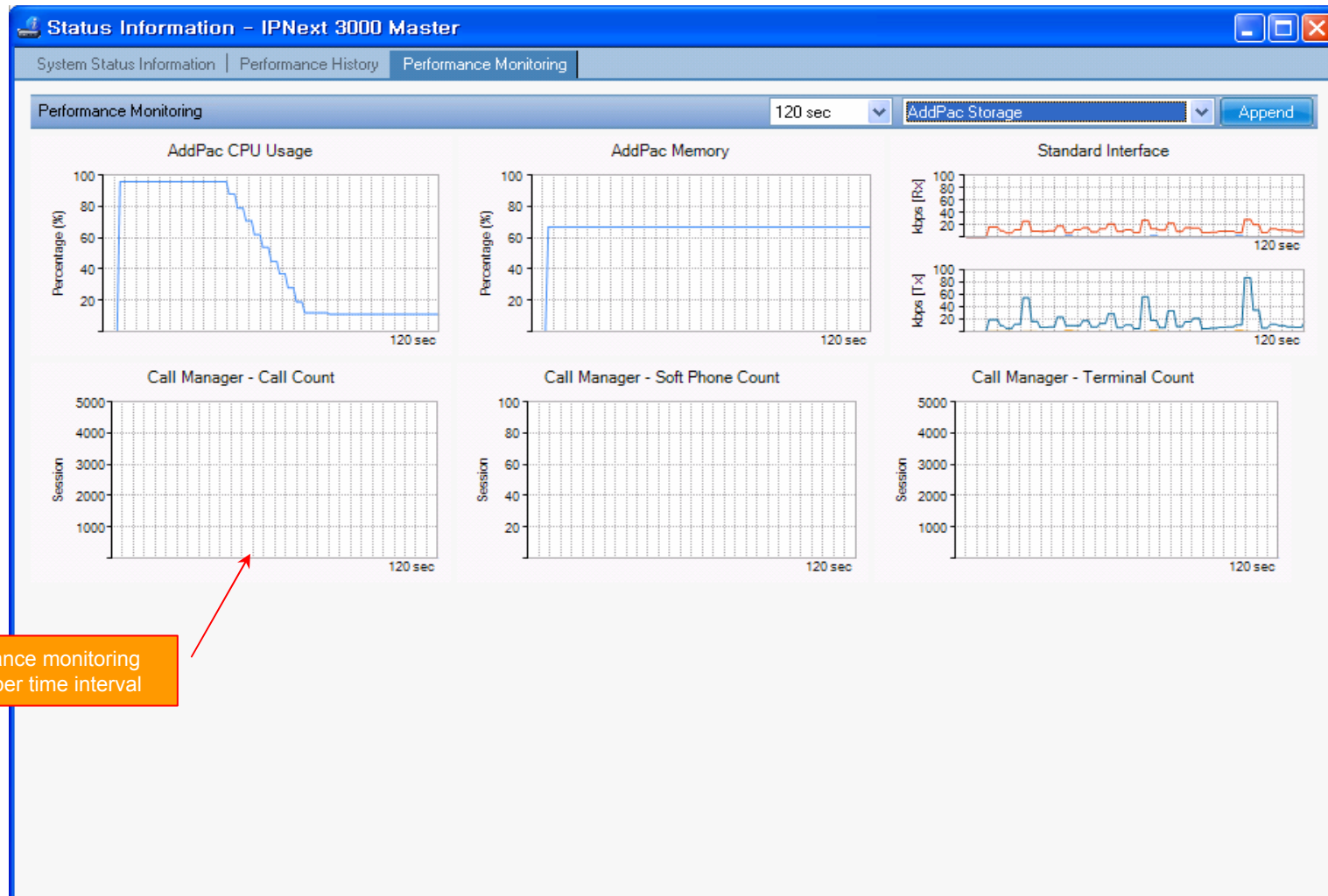
ID	Create Time	Duration	Caller Type	Caller Number	Called Type	Called Number	Remote IP	GSM Phone N...	Codec	Status
346	11/18/2010 3:54:50 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed
345	11/18/2010 3:50:43 PM	00:00:03	FXS	7000	VoIP	9999	172.16.9.18		g7231r63	Success
344	11/18/2010 3:46:54 PM	00:00:16	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 downed through SMS, e-mail)

**specify category when each event occurs**

**describe notification message content for e-mail or SMS**

**Event Notification Properties**

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 connection to the service listener on the remote machine. However, the synthetic transaction failed to complete within %param[timeout]% milliseconds, over %param[attempts]% attempts. This event will NOT impact service level agreements, but may be an indicator of other problems on that node.

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 ...	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 Authn 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	

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		

# Event Notification Management

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a tree view of 'Current Outage Devices' and a 'Destination Paths' section. A 'Destination Path Properties' dialog box is open, showing the configuration for a path named 'default'. The 'Destination Path Name' is 'onlyAlarmLamp'. The 'Initial Target' is 'alarmLamp' with an 'Initial Delay' of '0m'. A table lists notification types and their targets:

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

An orange callout box with a red arrow points to the 'alarmLamp' entry in the table, containing the text: 'define notification channel such as e-mail, sms, or alarmlamp'. Below the dialog, 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.

# Event Notification Management

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

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

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

# Configuration

The screenshot displays the Smart Network Management System (NMS) configuration interface. The main window shows a tree view of devices and a 'Configure Notification' dialog box. The dialog box is set to 'Alarm Lamp' and 'E-Mail' notification, with fields for 'Sender Email Address' (nms@addpac.com) and 'SMTP Server Host' (61.33.161.2). An orange callout box points to the dialog with the text 'global notification channel configuration'. Below the dialog, a table of 'Your Outstanding Notices' is visible.

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_RB1_server			device 00_RB1_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

# 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%

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/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 top navigation bar includes 'NMS', 'Account', 'Configuration', 'Monitoring', 'Notification', 'Fault', 'Statistics', 'View', and 'Help'. The main content area is divided into several sections:

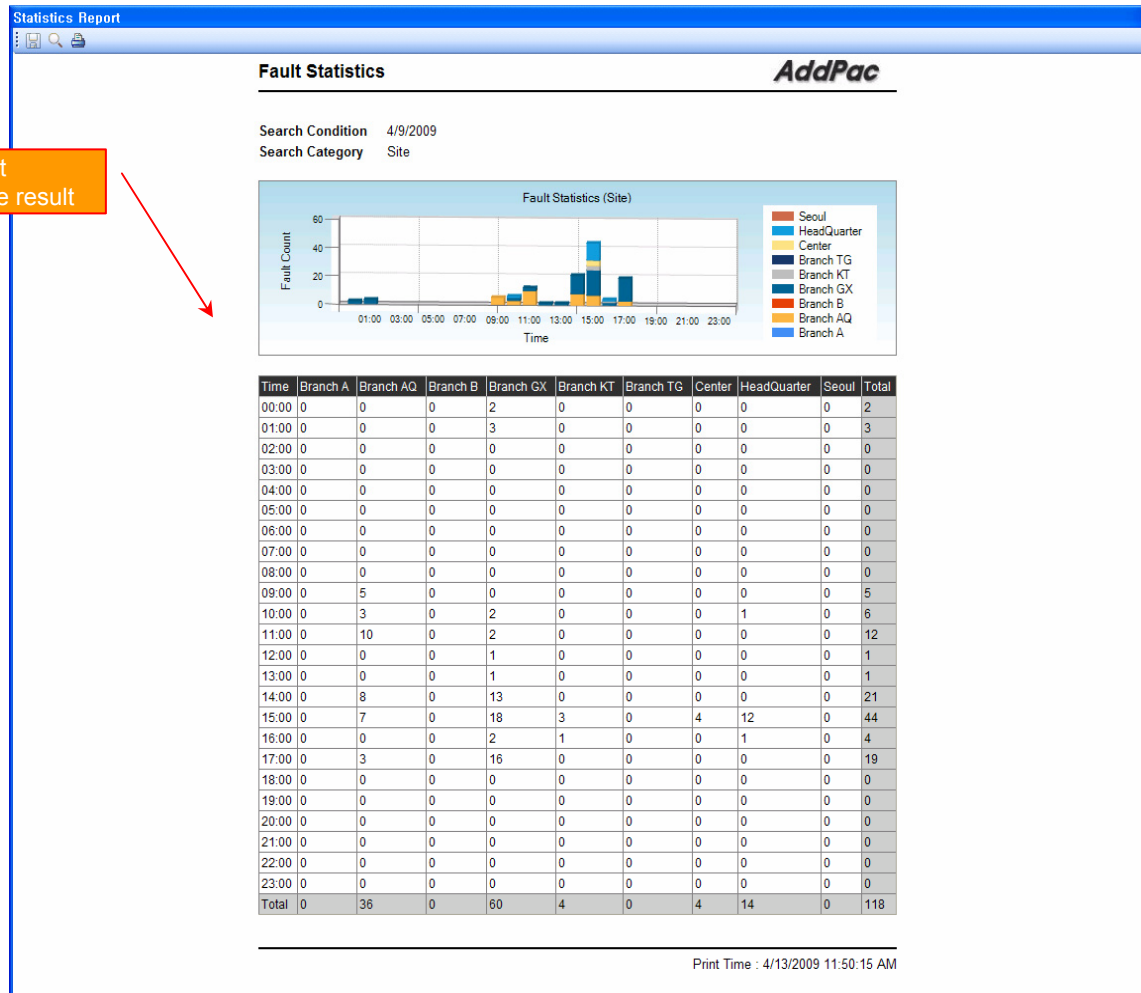
- Event Summary Table:** A table on the left showing event statistics for various dates from 2009-04-04 to 2009-04-13. Columns include 'Event Time', 'Outsta...', 'Ackno...', 'Not Clea...', 'Cleared', and 'In Pr'. A callout box points to this table with the text: "display graph for fault statistics with various search condition".
- Search Condition Panel:** A panel with 'Search Condition' and 'Search Category' sections. The search condition is set to 'Hour' for the date range '4/ 9/2009' to '3/30/2009'. The search category is 'Site' with a dropdown menu showing 'Branch A, Branch AQ, B'. A callout box points to this panel with the text: "display detailed data for fault statistics".
- Fault Statistics (Site) Graph:** A bar chart showing fault counts over time for various sites. The x-axis represents 'Time' from 01:00 to 23:00. The y-axis represents 'Fault Count' from 0 to 60. A legend on the right identifies the sites: Seoul (red), HeadQuarter (blue), Center (yellow), Branch TG (green), Branch KT (purple), Branch GX (orange), Branch B (brown), Branch AQ (pink), and Branch A (grey).
- Detailed Data Table (4/9/2009):** A table showing fault counts for each hour of the day on 4/9/2009, broken down by site. The total fault count for the day is 118.
 

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	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
<b>Total</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>60</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>	<b>0</b>	<b>118</b>
- Your Outstanding Notices (18):** A table at the bottom showing a list of notices with columns for 'Ack', 'ID', 'Send Time', 'Site', 'Device Name', 'IP Address', 'Service', and 'Message'. The messages describe service outages on various devices and interfaces.



# Fault Statistics – Report Generation

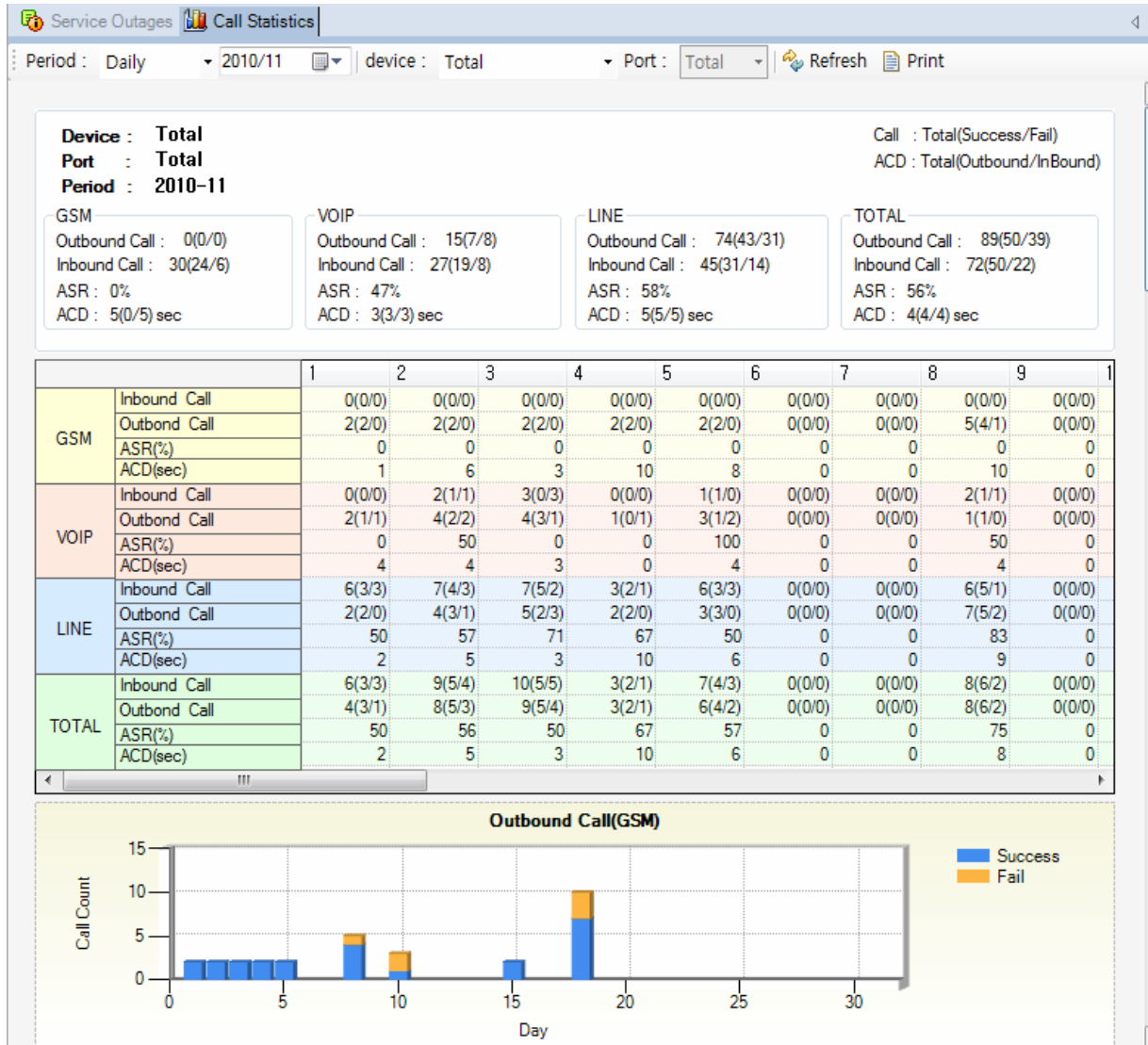
report generation for fault statistics and print out the result



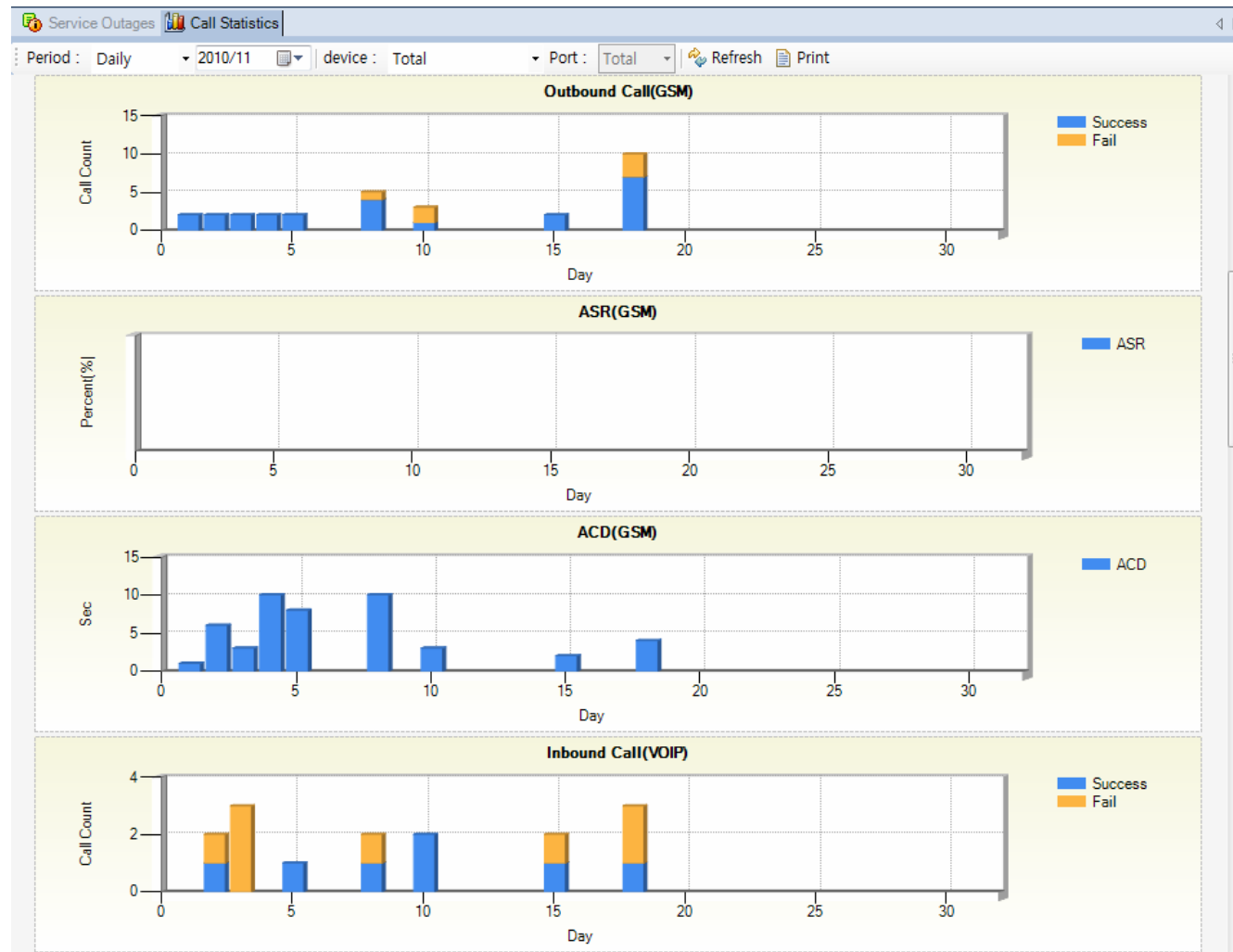
# Call Statistics

- 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.

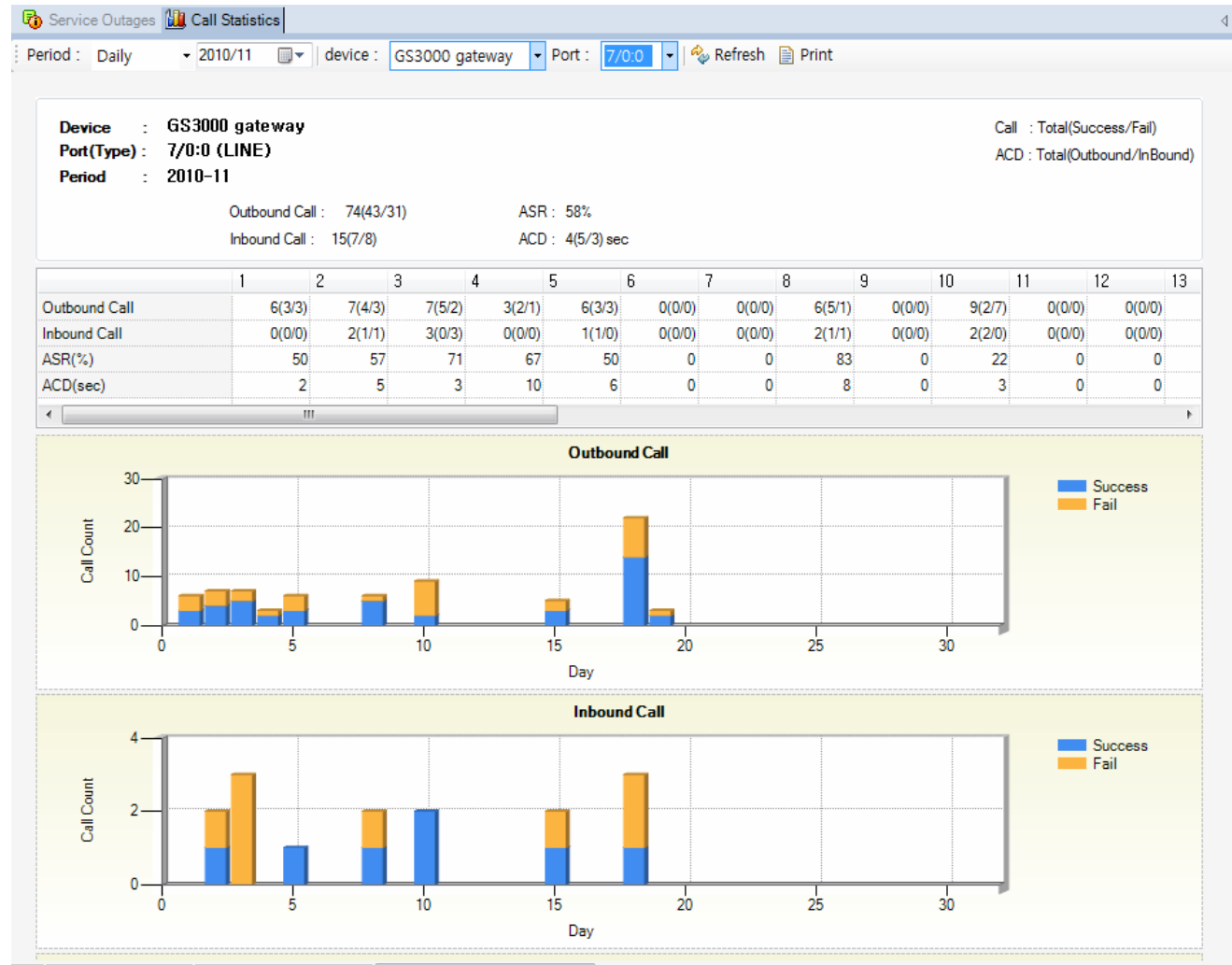
# Call Statistics



# 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

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 device models in the center. A 'Device Model Properties' dialog box is open, showing the configuration for a selected device model (AP-IPC250M). The dialog box has tabs for 'General', 'Service Availability', 'System Monitoring', and 'Service Monitoring'. The 'General' tab is active, showing fields for 'Model Name' (AP-IPC250M) and 'Category' (Network Camera). There is also a checkbox for 'Management by SSCP' and a field for 'SSCP Port' (5061). A 'Model Image' field shows a camera icon. Below the main window, a 'Model Image Management' window is open, displaying a grid of various device icons for selection. An orange text box with an arrow points to the 'Model Image Management' window, stating 'model image repository for selection'. Another orange text box with an arrow points to the 'Device Model Properties' dialog box, stating 'manage device model with various properties such as model image'. At the bottom of the interface, there is a table of 'Your Outstanding Notices (18)' with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

manage device model with various properties such as model image

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 (00_IVR_server) interface 172.16.253.118
<input type="checkbox"/>	9396	4/9/2009 10:57:37 AM	/AddPac/Branch AQ	NMS_IP_PBX_3...			device (NMS_IP_PBX_3) interface 172.16.253.118
<input type="checkbox"/>	9239	4/6/2009 7:49:20 PM	/AddPac/Branch AQ	NMS Camera 2	172.16.253.1		device (NMS Camera 2) interface 172.16.253.118
<input type="checkbox"/>	9238	4/6/2009 7:49:20 PM	/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	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	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	ICMP not response or deleted by administrator

# Service Definition

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

The screenshot displays the Smart Network Management System (NMS) interface. At the top, there's a navigation menu with options like NMS, Account, Configuration, Monitoring, Notification, Fault, Statistics, and View. Below this is a tree view of sites, including AddPac, Branch AQ, Branch GX, Branch KT, HeadQuarter, Seoul, Seoul East Area, SongPaGu Area Ce..., Subnetwork #2, SongPaGu Area Center, North Area, South Area, NamGu, sam Area, seocho district, West Area, Gangseo Area, Seoul, and MokDong Area.

In the center, there's a table of services. The 'Service Name' column lists various services like Call Manager, Presence, Media, NMS, RtpProxy, MCU, IVR, Recording, Tomcat, FTP, Camera Pan, Camera Tilt, Camera Zoom, and Camera Operation Status. The 'Protocol' column shows protocols like SNMP and TCP, and the 'Port' column shows port numbers like 161 and 8080.

Two 'Service Properties' dialog boxes are overlaid on the interface. The first dialog, titled 'Service Properties', shows the configuration for the 'Camera Operation Status' service. It includes fields for Service Name (Camera Operation Status), Protocol (SNMP), Port (161), Interval (30000 msec), Timeout (3000 msec), and Retry (3). The second dialog, also titled 'Service Properties', shows the configuration for the same service, focusing on the 'Service Condition' section. It includes a field for Service OID (1.3.6.1.4.1.4855.7.51.1.3.0) and a 'Service Condition' section with an Operator (=) and an Operand (1).

At the bottom of the interface, there's a section for 'Your Outstanding Notices (18)' with a table of notices. The table has columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message. The notices list various events like '00\_RBT\_server', '5th floor meeting...', 'NMS\_SDHD\_PBX', 'IPNext 3000 Slave', 'IPNext 3000 Master', '00\_IVR\_server', 'NMS\_IP\_PBX\_3', 'NMS Camera 2', and 'NMS Camera 2'.





# Thank you!

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