

# Smart GSM NMS

## Smart Network Management System

### Smart GSM NMS Overview

The screenshot displays two windows from the Smart GSM NMS. The top window, titled 'Status Information - IPNext 3000 Master', shows system status information including Today's Availability, CPU Utilization, Memory Utilization, and Storage Utilization. The bottom window, titled 'Status Information - GS3000 gateway', shows a table of Device Call History with columns for ID, Create Time, Duration, Caller Type, Caller Number, Called Type, Called Number, Remote IP, GSM Phone N., Codec, and Status.

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		g723163	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 3:43:39 PM	00:00:03	FXS	7000	VoIP	9999	172.16.9.18		g723163	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		g723163	Failed
337	11/18/2010 3:42:32 PM	00:00:04	FXS	7000	VoIP	9999	172.16.9.18		g723163	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		g723163	Success
334	11/18/2010 3:20:57 PM	00:00:00	VoIP	9999	FXS	7000	172.16.9.18		g723163	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		g723163	Success
324	11/15/2010 3:05:22 PM	00:00:00	VoIP	9999	FXS	7000	172.16.9.18		g723163	Failed
323	11/15/2010 3:05:11 PM	00:00:03	VoIP	9999	FXS	7000	172.16.9.18		g723163	Success
322	11/15/2010 3:05:08 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed

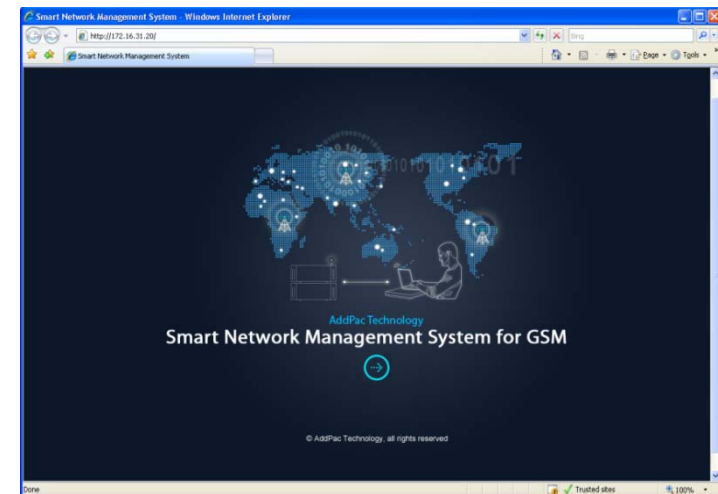
# AddPac

## AddPac Technology

2010, Sales and Marketing

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# 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

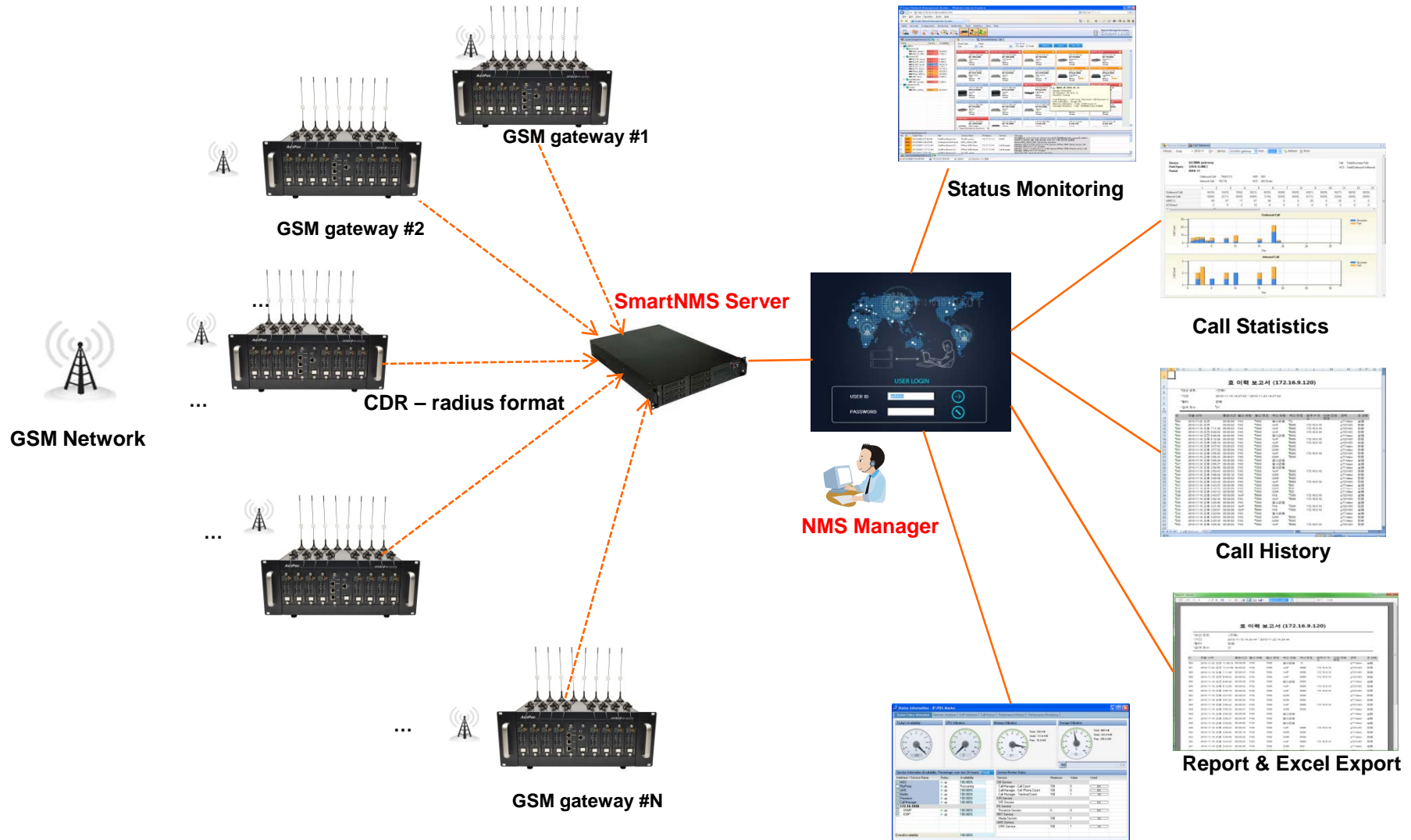
## **NMS Client**

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

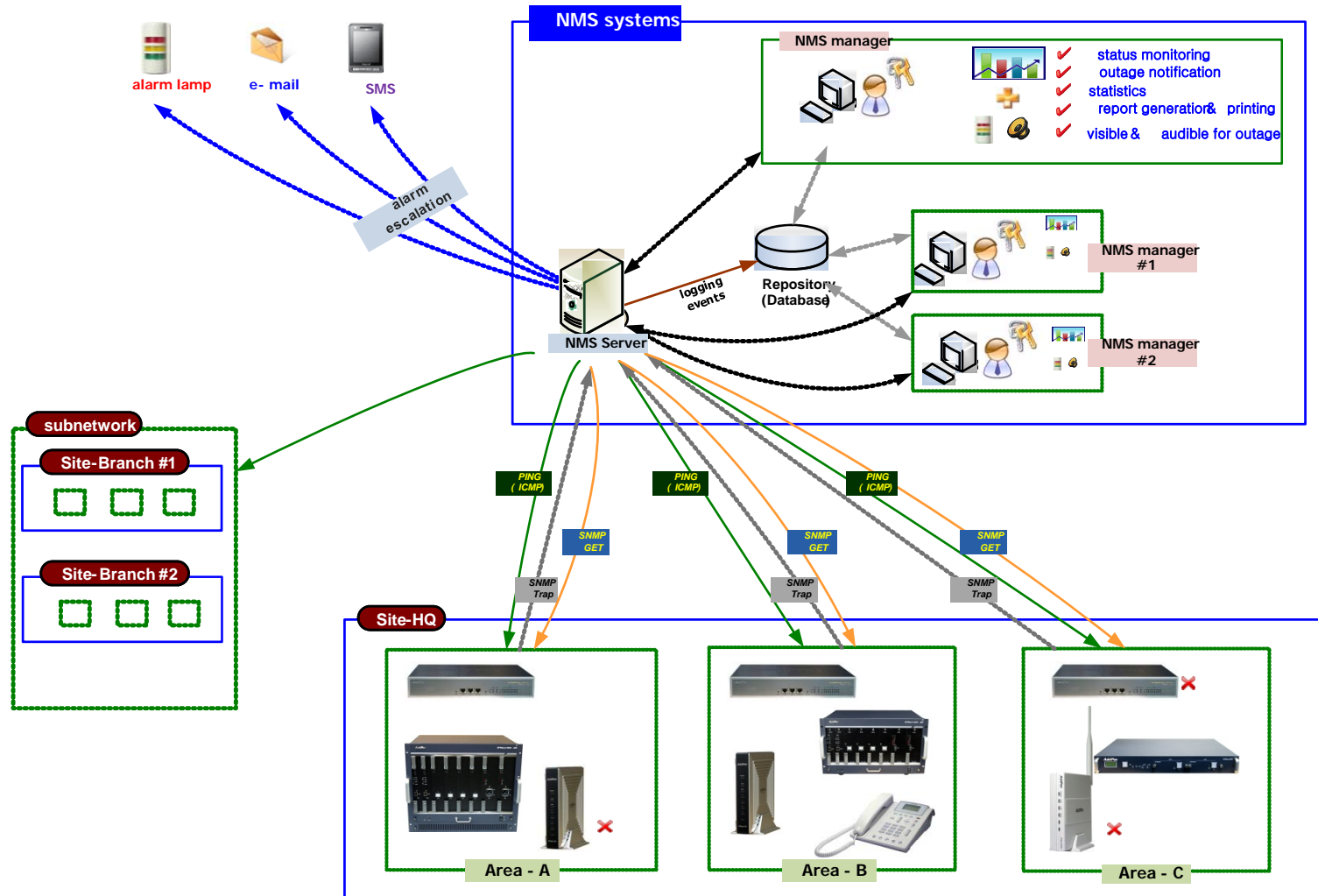
# Main Features

- Smart directory server(LDAP) and data(device, end-user..) integration.
- Site level management for the device and group.
- Auto provisioning for each GSM gateways.
- Event and notification management.
- Dashboard-styled real-time fault monitoring for GSM gateways.
- Port status and summary for GSM gateways (call history and statistics) .
- Fault statistics for GSM gateways.
- Batch processing for GSM gateways (initialize, backup, restore, upgrade, batch script, batch excel).
- System backup and restore of the SmartNMS operating data.

# Smart NMS CDR Processing Diagram



# 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

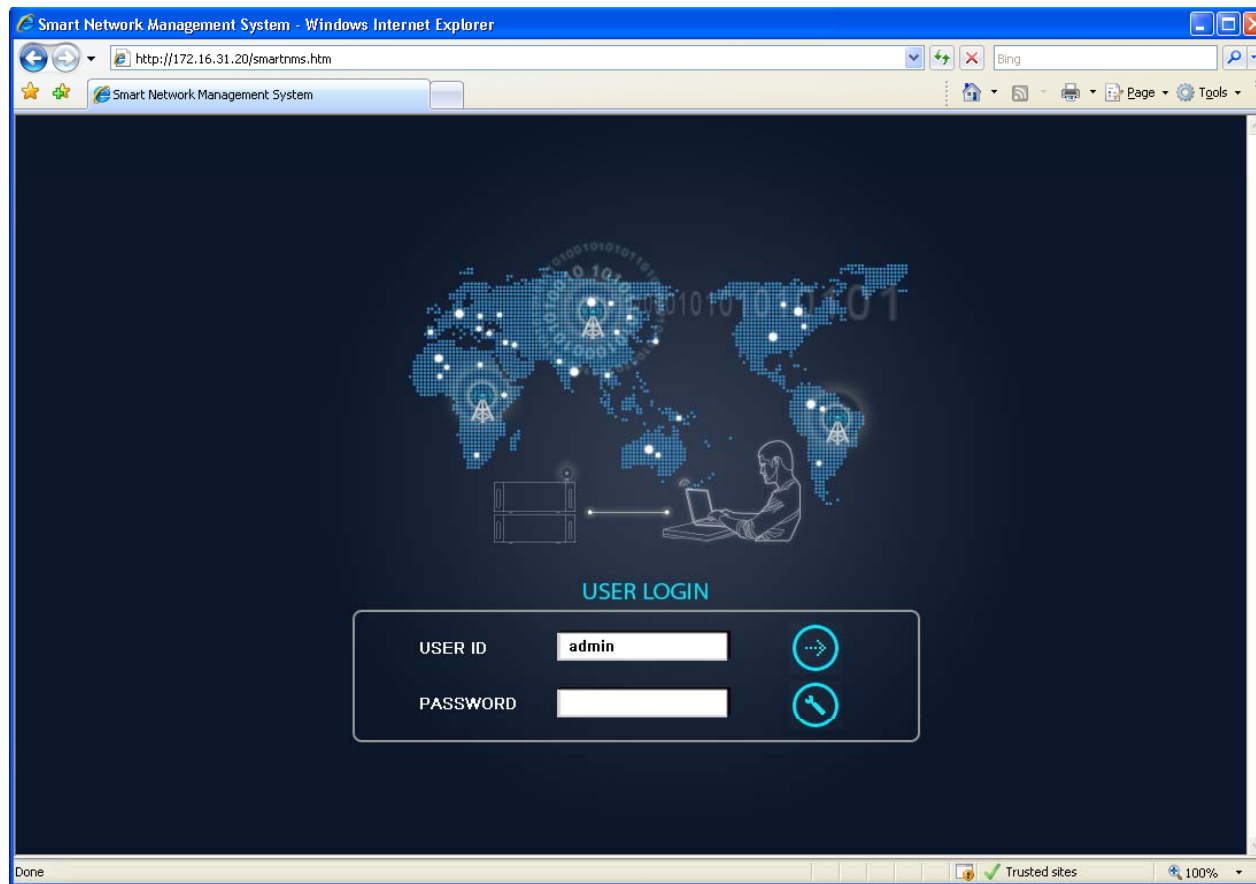
The screenshot displays a Windows Internet Explorer browser window titled "Smart Network Management System - Windows Internet Explorer" with the address bar showing "http://172.16.31.20/". The main content area features a dark blue background with a world map, server racks, and a person at a laptop.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

- Launching Application:** A dialog box with a blue title bar and a close button. It contains an icon of a computer and a globe, and the text "Verifying application requirements. This may take a few moments." A yellow callout box labeled "Automatic version check" points to this dialog.
- (61%) Downloading installnms:** A dialog box with a blue title bar and standard window controls. It shows the file name "installnms", the source "From: 172.16.31.20", and a progress bar. The text "Downloading: 6.29 MB of 10.1 MB" is visible. A yellow callout box labeled "New S/W version update" points to the progress bar.

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



# Web-based Login

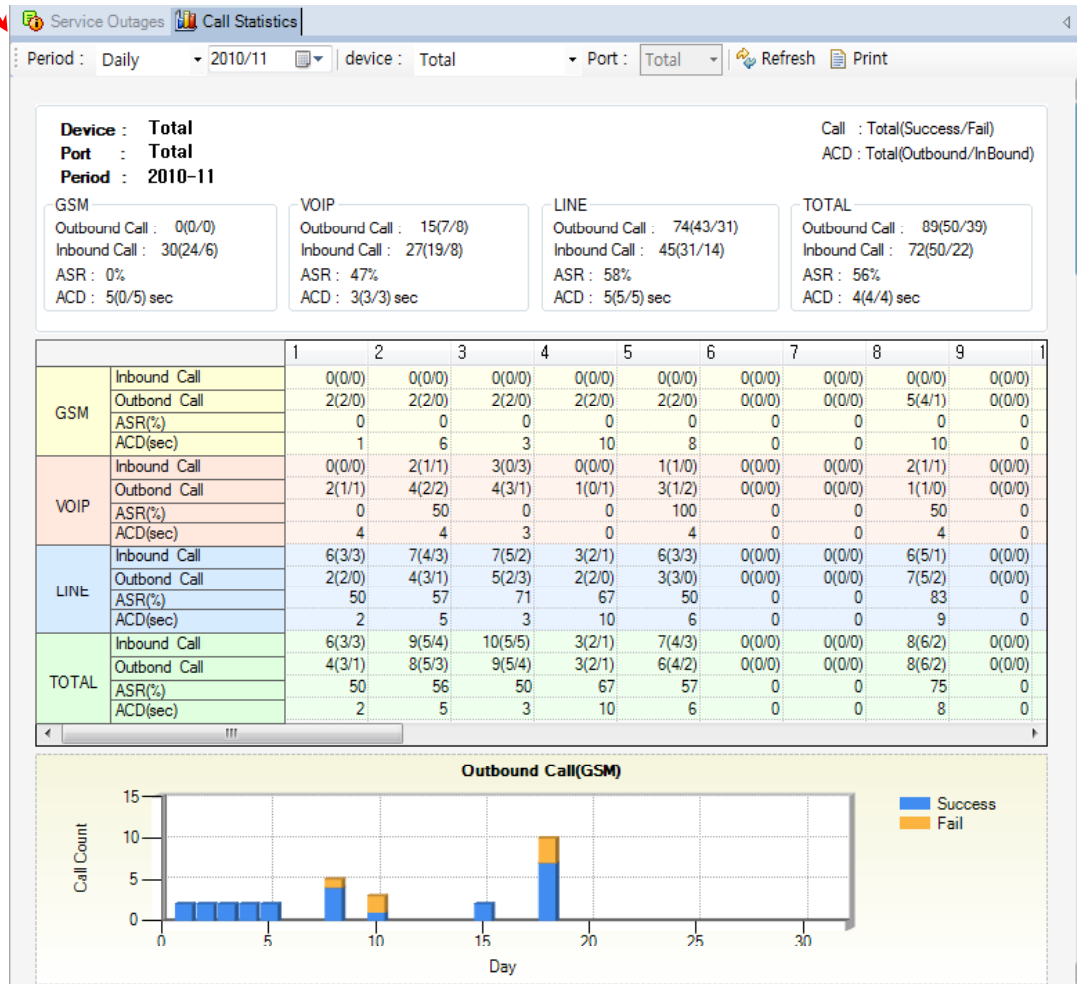


# Call Statistics

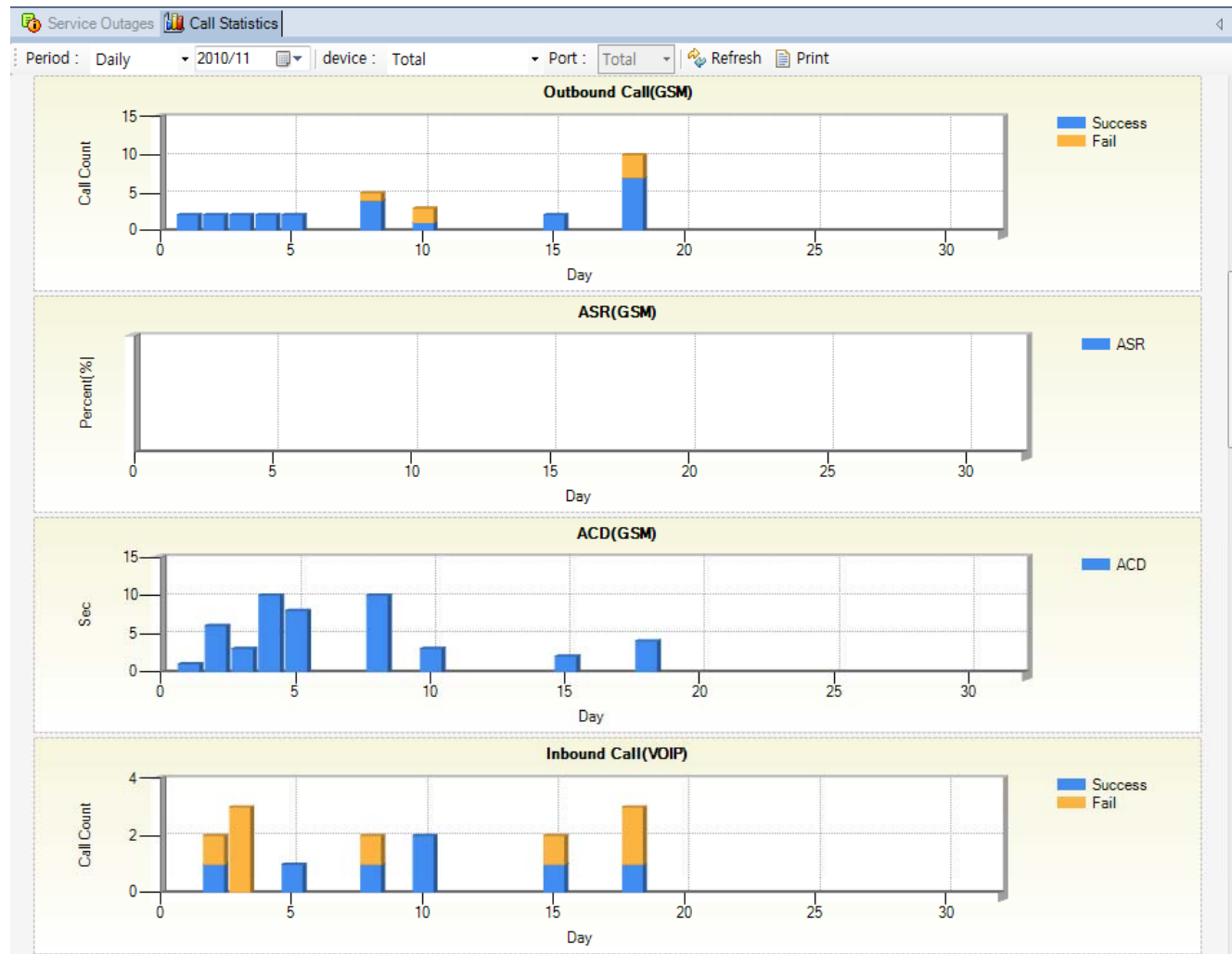
- SmartNMS receives CDR data for calls which is used for call statistics from the VOIP or GSM gateway.
- You can get statistics data with various time interval conditions such as daily and monthly basis for the device and VOIP port.
- Report statistics can be exported to the various document formats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

# Call Statistics

Total call statistics



# Call Statistics



# Call Statistics

Call statistics for the specified gateway.

Service Outages | Call Statistics

Period : Daily | 2010/11 | device : GS3000 gateway | Port : | Refresh | Print

**Device : GS3000 gateway** | Call : Total(Success/Fail)  
**Port : Total** | ACD : Total(Outbound/InBound)  
**Period : 2010-11**

	GSM	VOIP	LINE	TOTAL
Outbound Call :	0(0/0)	15(7/8)	76(44/32)	91(51/40)
Inbound Call :	30(24/6)	28(20/8)	45(31/14)	73(51/22)
ASR :	0%	47%	58%	56%
ACD :	5(0/5) sec	3(3/3) sec	5(4/5) sec	4(4/4) sec

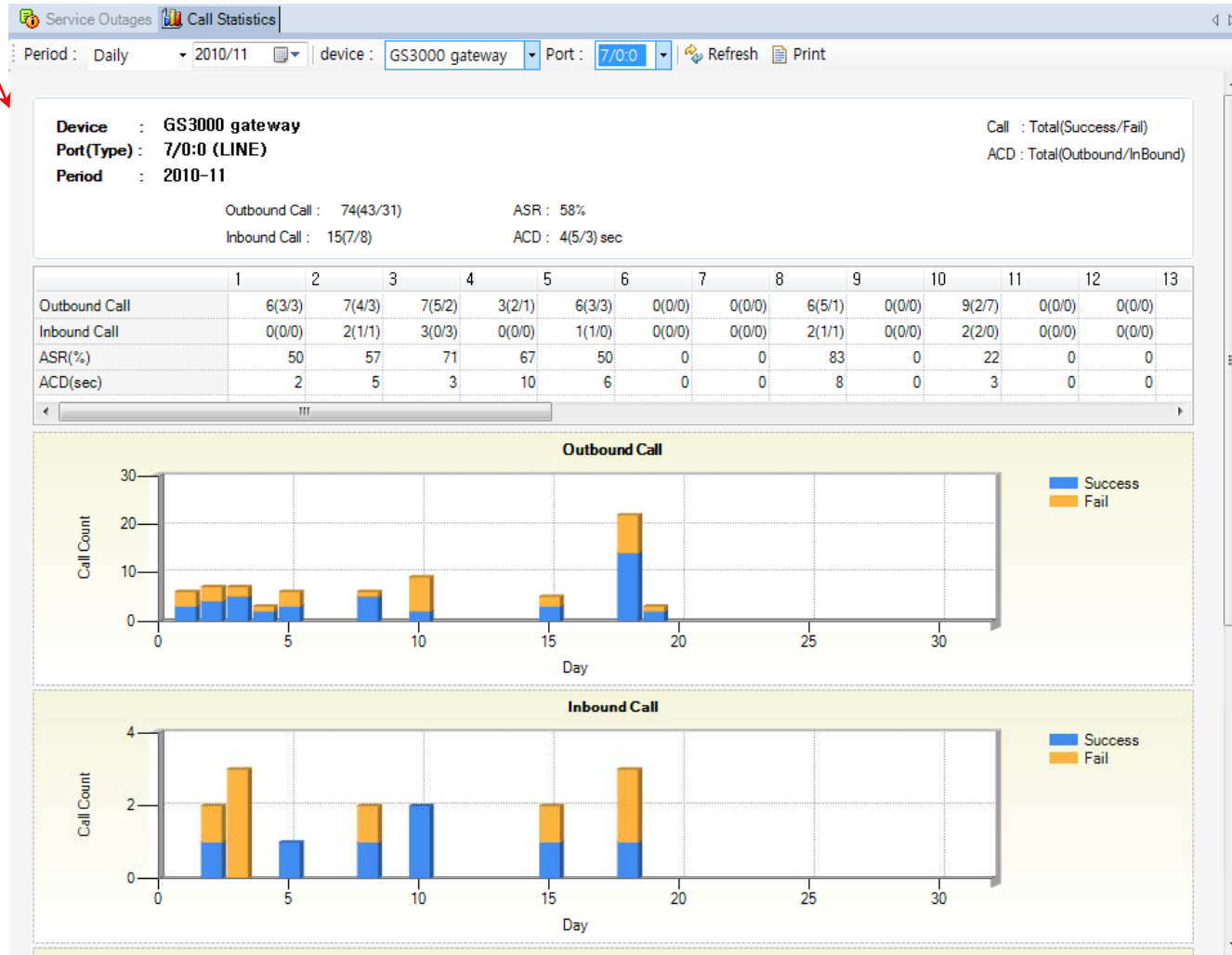
	1	2	3	4	5	6	7	8	9
GSM	Inbound Call	0(0/0)	0(0/0)	0(0/0)	0(0/0)	0(0/0)	0(0/0)	0(0/0)	0(0/0)
	Outbound Call	2(2/0)	2(2/0)	2(2/0)	2(2/0)	2(2/0)	0(0/0)	0(0/0)	5(4/1)
	ASR(%)	0	0	0	0	0	0	0	0
	ACD(sec)	1	6	3	10	8	0	0	10
VOIP	Inbound Call	0(0/0)	2(1/1)	3(0/3)	0(0/0)	1(1/0)	0(0/0)	0(0/0)	2(1/1)
	Outbound Call	2(1/1)	4(2/2)	4(3/1)	1(0/1)	3(1/2)	0(0/0)	0(0/0)	1(1/0)
	ASR(%)	0	50	0	0	100	0	0	50
	ACD(sec)	4	4	3	0	4	0	0	4
LINE	Inbound Call	6(3/3)	7(4/3)	7(5/2)	3(2/1)	6(3/3)	0(0/0)	0(0/0)	6(5/1)
	Outbound Call	2(2/0)	4(3/1)	5(2/3)	2(2/0)	3(3/0)	0(0/0)	0(0/0)	7(5/2)
	ASR(%)	50	57	71	67	50	0	0	83
	ACD(sec)	2	5	3	10	6	0	0	9
TOTAL	Inbound Call	6(3/3)	9(5/4)	10(5/5)	3(2/1)	7(4/3)	0(0/0)	0(0/0)	8(6/2)
	Outbound Call	4(3/1)	8(5/3)	9(5/4)	3(2/1)	6(4/2)	0(0/0)	0(0/0)	8(6/2)
	ASR(%)	60	66	60	67	67	0	0	76
	ACD(sec)	2	5	3	10	6	0	0	8

**Outbound Call(GSM)**

**Inbound Call(GSM)**

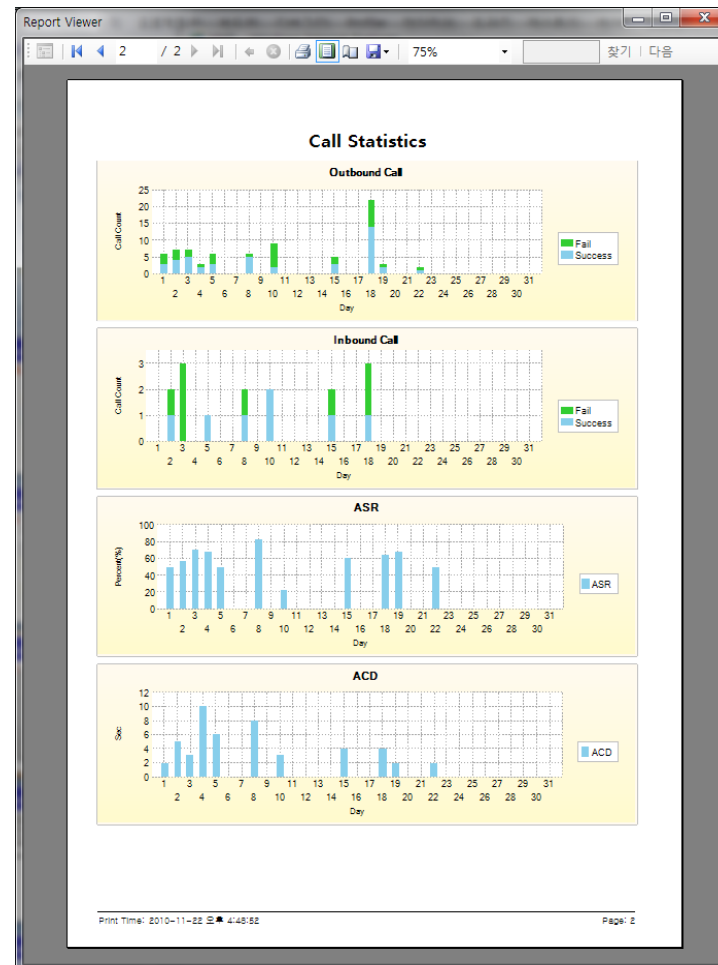
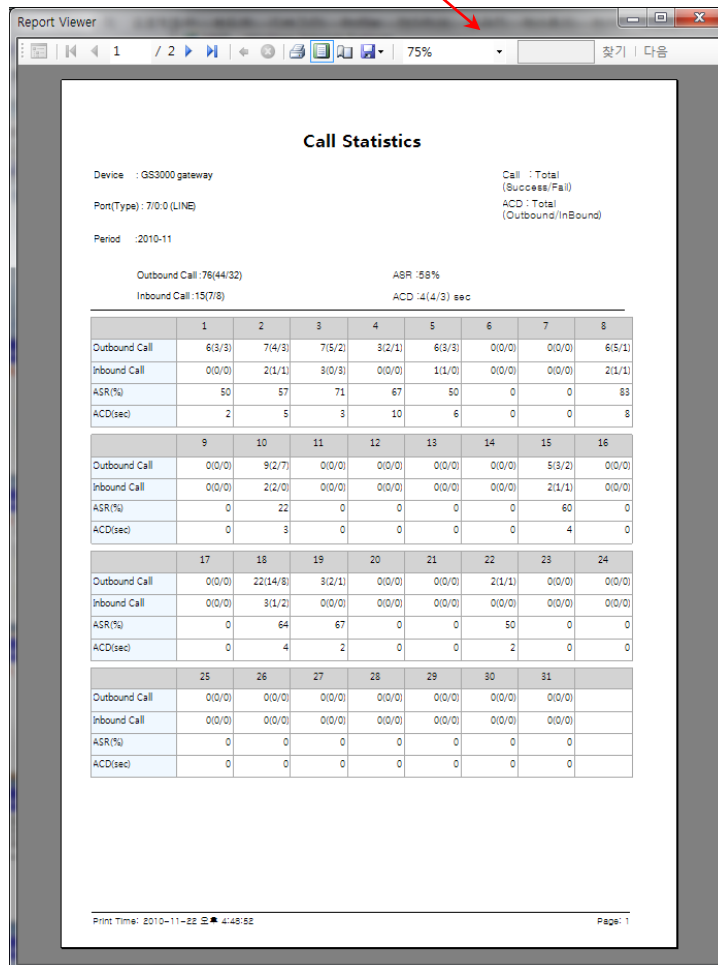
# Call Statistics

Call statistics for the specified port of the GSM gateway.



# Call Statistics Report

Can export to MS-Excel document or PDF and printout for the call statistics.



# Network Resource Management

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

The screenshot displays the AddPac Network Resource Management interface. On the left, a hierarchical tree view shows the network structure, including sites like AddPac, Seoul, and various branches. The main pane shows a list of categories such as Desktop, Network Camera, Phone, Server, Switch, and VoIP Gateway. A context menu is open over the tree, highlighting 'Execute SMM'. A 'User Properties' dialog box is also visible, showing a selection of site nodes.

**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_IP_PBX_31.13 all services down.
<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) 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 ICMP 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 SNMP 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

Your Outstanding Notices (16) All Outstanding Notices (16)

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 this grid, with a red arrow pointing to it and 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)'. The table has columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message. The status bar at the bottom shows the date and time as 4/13/2009 3:14:58 PM, the IP address 172.16.31.20:5101, the user 'admin', and the version 'Version 1.2.3384'.

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	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"/>	9229	4/6/2009 7:19:20 PM	/AddPac/Branch AQ	NMS Camera 2	172.16.253.110		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 in a Windows Internet Explorer browser. The main window shows a 'Notification Summary' table on the left and a detailed fault event history table on the right. An 'Advanced Search' dialog box is open over the main table, allowing for filtering of fault events based on various criteria.

**Notification Summary Table:**

Date/Time	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

**Advanced Search Dialog:**

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

**Main Fault Event History Table (Partial):**

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 4:03:13 PM
<input type="checkbox"/>	9517	4/10/2009 3:36:08 PM	/AddPac/HeadQuarter	company_MCU_s...				auto-acknowledged	4/10/2009 4:03:14 PM
<input type="checkbox"/>	9516	4/10/2009 3:36:00 PM	/AddPac/Branch GX	00_PS_Slave_ser...				auto-acknowledged	4/10/2009 4:03:13 PM
<input type="checkbox"/>	9514	4/10/2009 3:35:50 PM	/AddPac/Branch GX	00_PS_server				auto-acknowledged	4/10/2009 4:02:54 PM
<input type="checkbox"/>	9513	4/10/2009 3:35:41 PM	/AddPac/HeadQuarter	5th floor meeting room phone device				auto-acknowledged	4/10/2009 4:02:43 PM
<input type="checkbox"/>	9512	4/10/2009 3:35:41 PM	/AddPac/HeadQuarter	IP_PBX_Master (our company)				auto-acknowledged	4/10/2009 4:02:44 PM
<input type="checkbox"/>	9511	4/10/2009 3:35:33 PM	/AddPac/Branch KT	172.16.51.12				auto-acknowledged	4/10/2009 4:02:43 PM

**Your Outstanding Notices (17) Table:**

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_SOH_PBX			device NMS_SOH_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 fault events with columns for Date/Time, Outstanding status, Acknowledge status, Limit, ID, Send Time, Site, Device Name, IP Address, Service, Message, Responder, and Respond Time. A 'Troubleshooting Note (Event ID : 45393)' dialog box is open, showing a log message and a table for adding notes. Another dialog box is open with the status set to 'Cleared' and a text area containing 'Fixed it manually. 2009-04-10 PM by Administrator.' An orange callout box points to this dialog with the text 'Can write troubleshooting note if needed'.

Date/Time	Outstanding	Acknowledge	Limit	ID	Send Time	Site	Device Name	IP Address	Service	Message	Responder	Respond Time
2009-04-10	4	27	20	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
2009-04-09	2	76		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
2009-04-08	0	96		9526	4/10/2009 5:33:42 PM	/AddPac/Branch GX					to-acknowledged	4/10/2009 5:22:43 PM
2009-04-07	0	40		9525	4/10/2009 5:21:06 PM	/AddPac/Branch GX					to-acknowledged	4/10/2009 5:17:56 PM
2009-04-06	7	489		9524	4/10/2009 5:17:29 PM	/AddPac/Branch GX					to-acknowledged	4/10/2009 4:03:13 PM
2009-04-05	0	722		9523	4/10/2009 3:36:26 PM	/AddPac/HeadQuarter	IP cor				to-acknowledged	4/10/2009 4:03:13 PM
2009-04-04	0	708		9522	4/10/2009 3:36:18 PM	/AddPac/HeadQuarter	PB cor				to-acknowledged	4/10/2009 4:03:13 PM
2009-04-03	1	476		9521	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	IP cor				to-acknowledged	4/10/2009 4:03:13 PM
2009-04-02	0	248		9520	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	LUM				to-acknowledged	4/10/2009 4:03:13 PM
2009-04-01	0	19		9519	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	Re (ou				to-acknowledged	4/10/2009 4:03:13 PM
2009-03-31	0	37		9518	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	ter				to-acknowledged	4/10/2009 4:03:14 PM
2009-03-30	0	9		9517	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:03:13 PM
2009-03-29	0	3		9516	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:54 PM
2009-03-28	0	1		9515	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-27	0	14		9514	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:44 PM
2009-03-26	0	52		9513	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-25	0	8		9512	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-24	0	19		9511	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-23	0	59		9510	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-22	0	102		9509	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-21	0	102		9508	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-20	0	102		9507	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-19	0	102		9506	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-18	0	102		9505	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-17	0	102		9504	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-16	0	102		9503	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-15	0	102		9502	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-14	0	102		9501	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-13	0	102		9500	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-12	0	102		9499	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-11	0	102		9498	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-10	0	102		9497	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-09	0	102		9496	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-08	0	102		9495	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-07	0	102		9494	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-06	0	102		9493	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-05	0	102		9492	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM
2009-03-04	0	102		9491	4/10/2009 3:36:17 PM	/AddPac/HeadQuarter	00				to-acknowledged	4/10/2009 4:02:43 PM

Can write troubleshooting note if needed

# Current Device Fault (Outage)

**Current Outage Devices [13]**

Name	Service...	Availability
AddPac		
Branch AQ		
NMS Camera	6 of 12	50.000 %
NMS_IP_PBX...	3 of 3	0.000 %
Branch GX		
00_IVR_server	3 of 3	0.000 %
00_IVR_slave...	3 of 3	0.000 %
00_PS_server	3 of 3	0.000 %
00_PS_slave...	2 of 3	33.333 %
00_RBT_server	3 of 3	0.000 %
IPNext 3000 ...	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 %

**Service Outages**

Outage ID	Site	Device Name	IP Address	Service	Time Down
13968	/AddPac/Branch GX	00_RBT_server	172.17.114.60	Media	4/10/2009 9:26:04 PM
13967	/AddPac/Branch GX	00_RBT_server	172.17.114.60	ICMP	4/10/2009 9:26:04 PM
13966	/AddPac/Branch GX	00_RBT_server	172.17.114.60	SNMP	4/10/2009 9:26:04 PM
13948	/AddPac/HeadQuarter	5th floor meeting room p...	172.16.53.101	ICMP	4/10/2009 5:34:10 PM
13907	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	ICMP	4/10/2009 3:34:29 PM
13906	/Subnetwork #2/Cent...	NMS_SOHO_PBX	172.16.19.50	SNMP	4/10/2009 3:34:29 PM

**Event Detail (ID: 45412)**

Acknowledge Events    Device Properties    Help    Close

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

Site: /AddPac/Branch GX    Device Name: 00\_RBT\_server    Device Model: AP-RBT1000

Service: [ ]    Status: [ ]    Acknowledged By: [ ]

Time Acknowledge: [ ]

Log Message: device 00\_RBT\_server down

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

Troubleshooting Note List

Time	User	Status	Note

Add    Edit    Delete



# Device Event History

**Smart Network Management System - Windows Internet Explorer**  
 http://172.16.31.20/smartnms.htm

**Event Summary**

Event Time	Outlets	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

**Event List**

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 [1.3.6.1.6.3.1.1.4.3.0="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 [1.3.6.1.4.1.4855.3.2.10] args [1.3.6.1.6.3.1.1.4.3.0="1.3.6.1.4.1.4855.3.2.10"
<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/Center	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/Center	NMS_SDHO_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/Center	NMS_SDHO_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/Center	NMS_SDHO_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/Center	NMS_SDHO_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/Center	NMS_SDHO_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/Center	NMS_SDHO_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.

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

**Event Details**

ID	Site	Device Name	IP Address	Service	Message
9502	/AddPac/Branch GX	00_RBT_server			device 00_RBT_server's all services are down.
9501	/AddPac/HeadQuarter	5th floor meeting...			device 5th floor meeting room phone device, all services are down.
9495	/Subnetwork #2/Center	NMS_SDHO_PBX		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	/AddPac/Branch GX	IPNext 3000 Slave	172.17.113.41	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	/AddPac/Branch GX	00_IVR_server			device 00_IVR_server all services are down.
9396	/AddPac/Branch AQ	NMS_IP_PBX_3...			device NMS_IP_PBX_31.13 all services down.
9239	/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

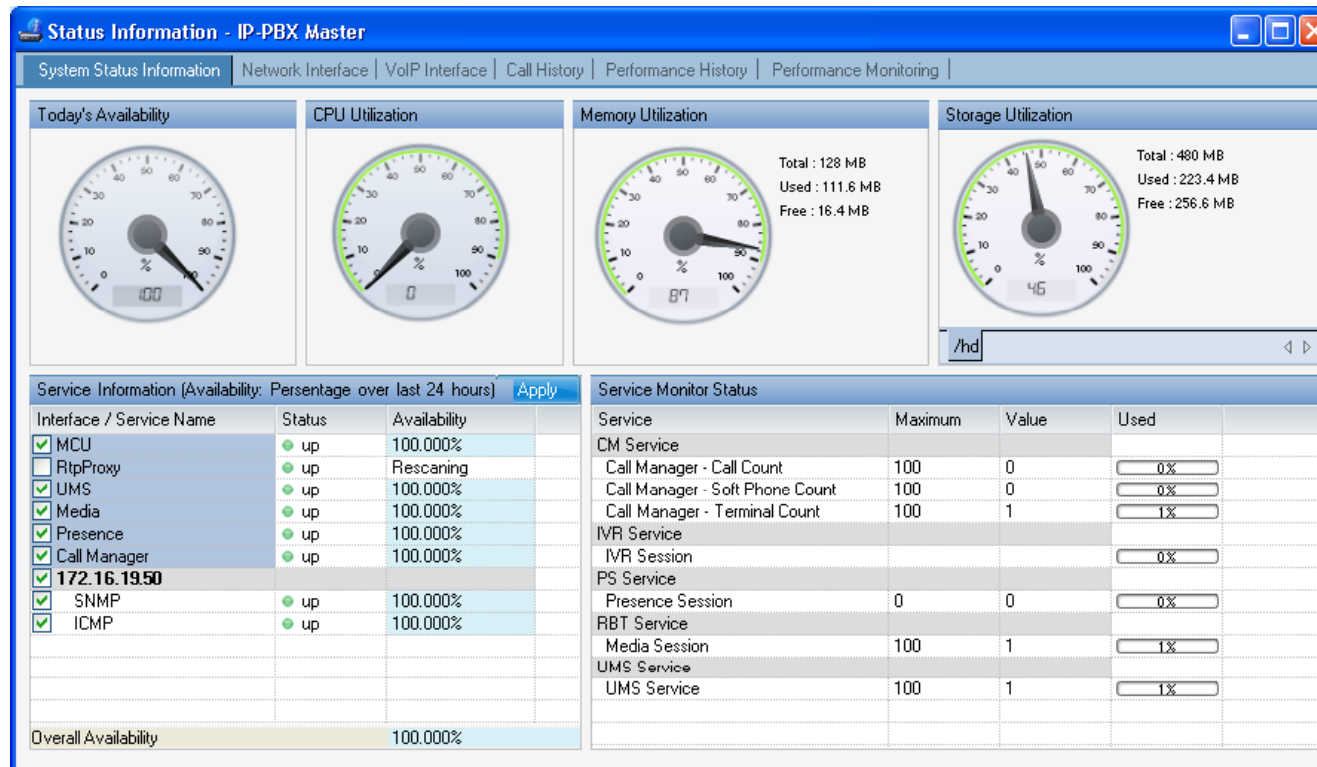
Can view all events for devices with search condition

summarize daily event statistics data

# Device Status Information

- System Performance Information (CPU, HDD, Memory,...)
- Provide device current service status (up/down)
- Provide device main status (max value vs current value)
- 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

Status Information - GS3000 gateway

System Status Information | Network Interface | VoIP Interface | Call History | Performance History | Performance Monitoring

Interface Status

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

Status Information - GS3000 gateway

System Status Information | Network Interface | **VoIP Interface** | Call History | Performance History | Performance Monitoring

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.

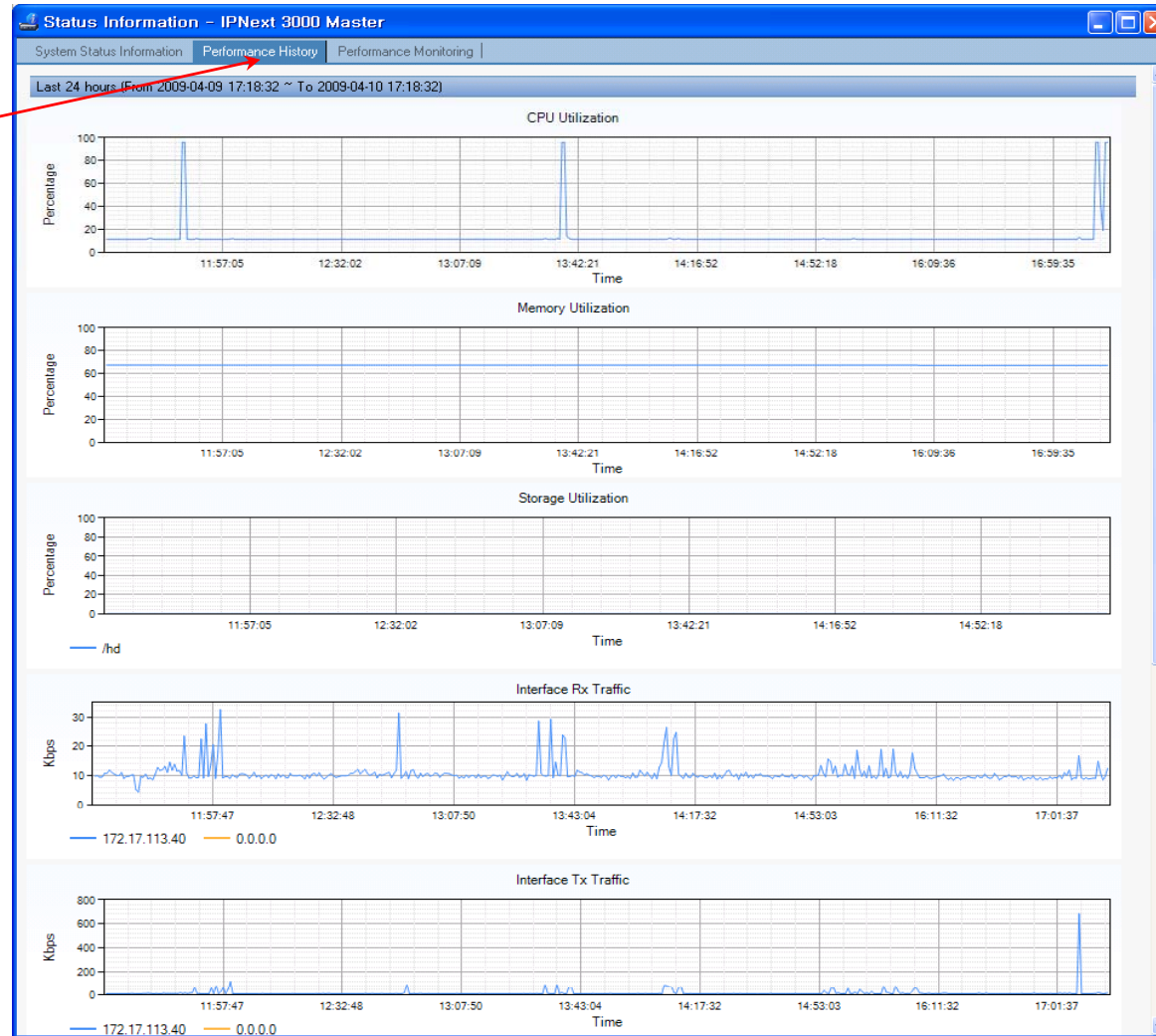
Device Call History

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

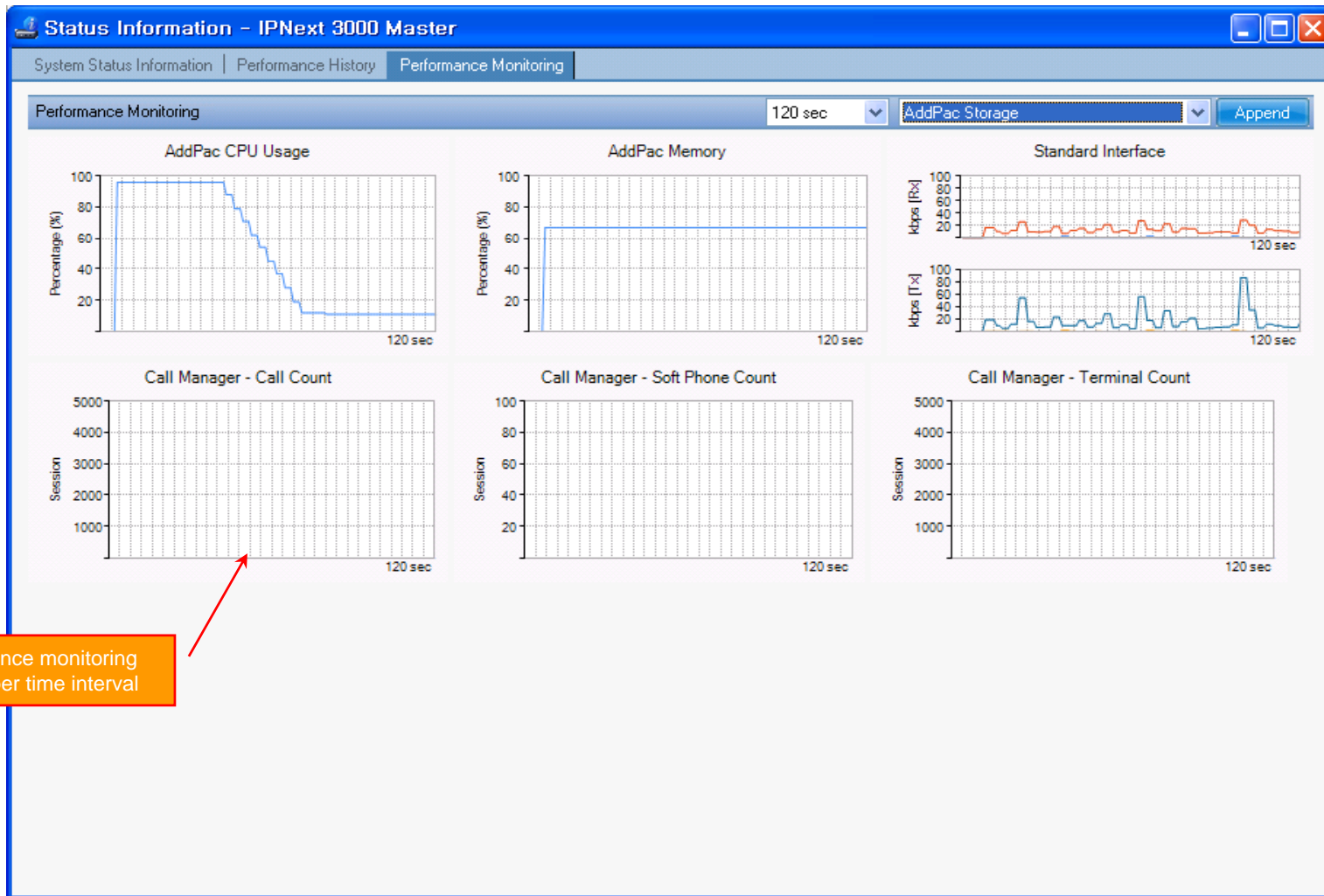
ID	Create Time	Duration	Caller Type	Caller Number	Called Type	Called Number	Remote IP	GSM Phone N...	Codec	Status
346	11/18/2010 3:54:50 PM	00:00:00	FXS	7000	Unknown				g711alaw	Failed
345	11/18/2010 3:50:43 PM	00:00:03	FXS	7000	VoIP	9999	172.16.9.18		g7231r63	Success
344	11/18/2010 3:46:54 PM	00:00:16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

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a tree view of devices on the left and a table of event notifications in the center. A dialog box titled 'Event Notification Properties' is open on the right, showing configuration details for a specific event notification.

**Event Notification Properties Dialog:**

- 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.

**Callout Boxes:**

- 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**

**Table: 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_RB1_server		device:00_RB1_server's 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 network devices and their service availability. A dialog box titled "Destination Path Properties" is open, allowing configuration of notification channels. The dialog includes a table for defining notification channels:

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

A red callout box with the text "define notification channel such as e-mail, sms, or alarmlamp" points to the 'email' and 'sms' rows in the table. The dialog also includes an "Escalation" section with a similar table and "Add", "Delete", "Ok", and "Cancel" buttons.

At the bottom of the screenshot, a table titled "Your Outstanding Notices (18)" is visible, showing a list of events with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

# Event Notification Management

The screenshot displays the Smart Network Management System (NMS) interface. The main window shows a tree view of network devices and their availability. Two dialog boxes are open: 'Destination Path Properties' and 'Target Properties'. The 'Target Properties' dialog is the primary focus, showing the configuration for event notifications. It includes a dropdown for 'Choose the notification type' (set to 'sms'), a 'Target Information' section with radio buttons for 'Send to select user' (selected) and 'Send to Email or Mobile', and a dropdown for 'Choose the desired behavior for automatic notification on responded events' (set to 'on'). A red box highlights the 'Send to select user' option, with a red arrow pointing to the 'Account Administrator' dropdown menu.

**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 open to the 'Alarm Lamp' tab, showing fields for 'Sender Email Address' (nms@addpac.com) and 'SMTP Server Host' (61.33.161.2). A red arrow points to the dialog box with a callout box containing the text 'global notification channel configuration'.

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_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 serverfo...	3 of 3	0.000 %
Subnetwork #2		
Center		
NMS_SOHD_...	2 of 2	0.000 %

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_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 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%
WiFi 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 main content area shows a search condition panel with a date range of 4/9/2009 to 3/30/2009 and a site selection of 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 is also visible, showing fault counts for different sites and a total of 118 faults. At the bottom, there is a section for "Your Outstanding Notices (18)" with columns for Ack, ID, Send Time, Site, Device Name, IP Address, Service, and Message.

**Event Summary Table:**

Event Time	Outsta...	Ackno...	Not Clo...	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

**4/9/2009 Detailed Data Table:**

Time	Branch A	Branch AQ	Branch B	Branch GX	Branch KT	Branch TG	Center	HeadQuarter	Seoul	Total
07:00	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0
09:00	0	5	0	0	0	0	0	0	0	5
10:00	0	3	0	2	0	0	0	1	0	6
11:00	0	10	0	2	0	0	0	0	0	12
12:00	0	0	0	1	0	0	0	0	0	1
13:00	0	0	0	1	0	0	0	0	0	1
14:00	0	8	0	13	0	0	0	0	0	21
15:00	0	7	0	18	3	0	4	12	0	44
16:00	0	0	0	2	1	0	0	1	0	4
17:00	0	3	0	16	1	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>

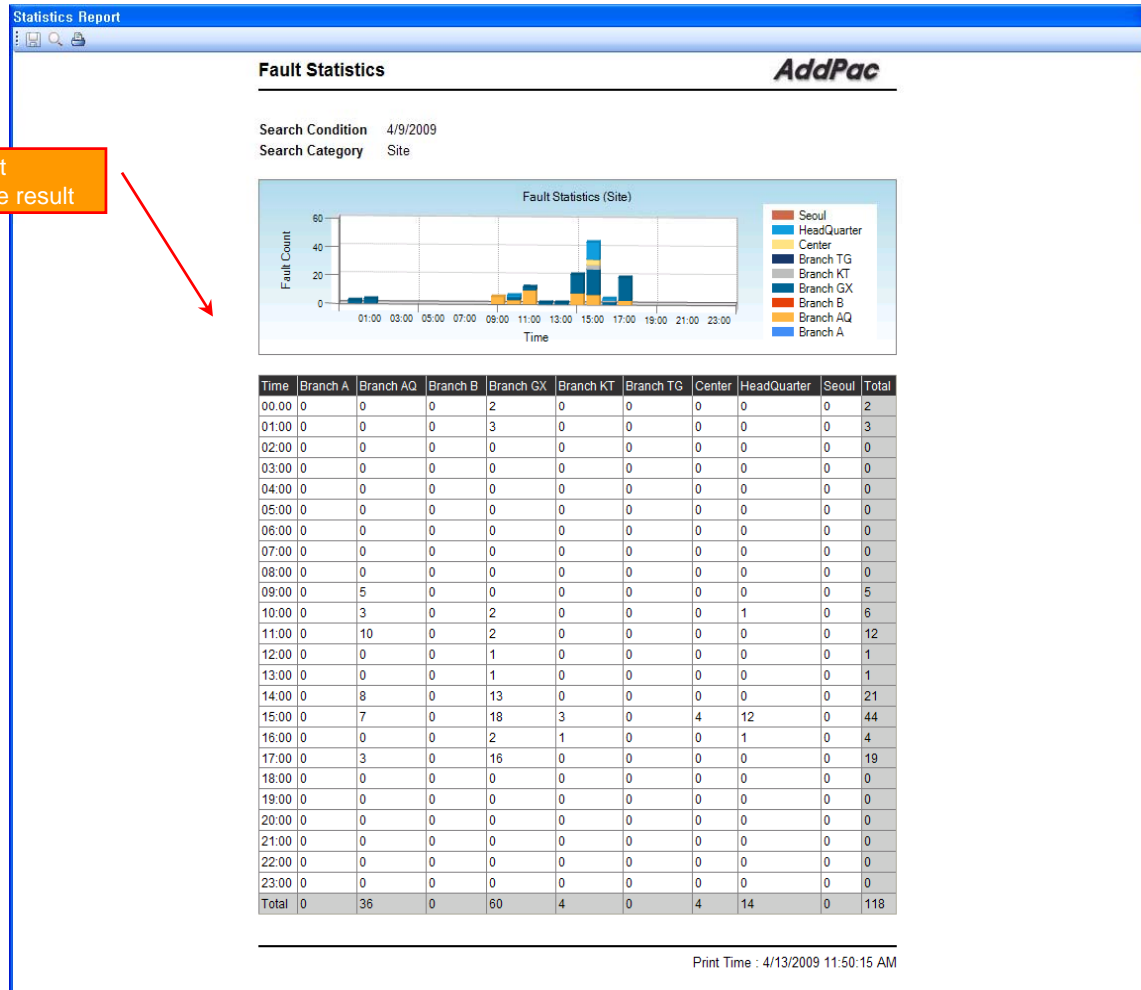
**Your Outstanding Notices (18):**

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_SOHO_PBX			device NMS_SOHO_PBX, all services are down
	9505	4/10/2009 11:23:13 AM	/AddPac/Branch GX	IPNext_3000_Slave1	172.17.113.41	Call	interface 172.17.113.41 (172.17.113.41) device IPNext_3000_Slave1 service



# Fault Statistics – Report Generation

report generation for fault statistics and print out the result



# Model & Service Management

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

# Device Model Management

manage device model with various properties such as model image

model image repository for selection

Name	Description	Model Name	Category
Branch AQ	Branch AQ description	AP-IP200	Phone
Branch GX	Branch GX description	AP-IP300	Phone
Branch KT	Branch KT description	AP-IPC	Network Camera
HeadQuarter	Main HeadQuarter Cen...	AP-IPC250M	Network Camera
Seoul	Seoul subnetwork	AP-IVR1000	Server
Seoul East Area	Seoul East Area	AP-MC1000	Server
		AP-MC3000	Server
		AP-MC5000	Server
		AP-NR2000	Server
		AP-PS2000	Server
		AP-RBT1000	Server
		AP-RS2000	Server
		AP-UMS1000	Server
		AP-UMS2000	Server
		AP-VC2000	Phone
		AP-VP200	Phone
		AP-VP300	Phone
		AP-VP350	Phone
		AP-VP500	Phone
		IPNext1000	Server
		IPNext1000	Server
		IPNext180	Server
		IPNext200	Server

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 se
/Subnetwork #2/Cent...	NMS_SDHO_PBX			device NMS_SDHO_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 (If
/AddPac/Branch GX	IPNext 3000 Master	172.17.113.4		Call Manager 2009-4-10 11:37:12 failed.
/AddPac/Branch GX	00_IVR_server			device (00_IVR_server's all services are down.
/AddPac/Branch AQ	NMS_IP_PBX_3...			device (NMS_IP_PBX_3's all services are down.
/AddPac/Branch AQ	NMS Camera 2	172.16.253.1		device(NMS Camera 2) interface 172.16.253.118
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	ICMP not response or deleted by administrator
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	SNMP not response or deleted by administrator
/AddPac/Branch AQ	NMC Camera 2	172.16.253.110	ICMP	device(NMS Camera 2) interface 172.16.253.118
/AddPac/Branch AQ	NMC Camera 2	172.16.253.110	ICMP	ICMP not response or deleted by administrator
/AddPac/Branch AQ	NMC Camera 2	172.16.253.118	SNMP	device(NMS Camera 2) interface 172.16.253.118
/AddPac/Branch AQ	NMC Camera 2	172.16.253.118	SNMP	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
NIS	SNMP	161
RtpProxy	SNMP	161
MCU	SNMP	161
IVR	SNMP	161
Recording	SNMP	161
Tomcat	TCP	8080
FTP	TCP	21
Camera Pan	SNMP	161
Camera Tilt	SNMP	161
Camera Zoom	SNMP	161
Camera Operation Status	SNMP	161

**Service Properties (General - SNMP)**

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

**Service Properties (General - SNMP)**

Service OID: 1.3.6.1.4.1.4855.7.51.1.3.0

Service Condition:  
 Operator: =  
 Operand: 1

Site	Device Name	IP Address	Service	Message
/AddPac/Branch GX	00_RBT_server		Call Manager	device 00_RBT_serv
/AddPac/Branch AQ	00_IVR_server		Call Manager	device 00_IVR_serv
/AddPac/Branch GX	NMS_IP_PBX_3		Call Manager	device NMS_IP_PBX_3
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	device (NMS_Camera response or delete by
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	device (NMS_Camera ICMP not response o
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	SNMP	device (NMS_Camera SNMP not response o
/AddPac/Branch AQ	NMS Camera 2	172.16.253.118	ICMP	device (NMS_Camera ICMP not response o



# Thank you!

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