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NS1000

CLASSROOM MATERIAL (TRAINER)



Introduction

This material refers to the KX-NS1000 PBX system, and details the basic information that should be covered in a classroom session (1 day)

The Session comprises of the following sections;

NS1000 – Installation & Initialisation

NS1000 – WebMC

NS1000 – Terminal Registration

NS1000 – User Profiles

NS1000 – DSP Resources

NS1000 – Networking

NS1000 – Upgrade & Backup

NS1000 - Maintenance

From following this course element, participants will be gain an understanding of how to install, initialize and maintain the NS1000 system.

Further information about feature implementation and specifications, may be found in the associated Installation Manual, Feature Guide and User Manual.

Section - 1

INSTALLATION AND INITIALIZATION



Introduction

This material refers to the KX-NS1000 PBX system, and details the basic steps necessary to install and initialize the unit.

The Module comprises of the following sections;

NS1000 – Installation

NS1000 – System Initialization

From following this course element, participants will be gain an understanding of how to install and initialize the NS1000 ready for first use.

Further information about feature implementation and specifications, may be found in the associated Installation Manual, Feature Guide and User Manual.

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Chapter 1

INSTALLATION

NOTE

IMPORTANT:

Before installing the NS1000 system, refer to the Installation Manual. The Installation Manual contains specific information regarding the safe installation of the unit and also details specific installation and wiring precautions.


The information contained in this presentation is intended to supplement the NS1000 Installation Manual by providing an overview of the installation and initialization process and in no way replaces the published Installation Manual.

Where any information contained herein appears unclear or incomplete, the information contained in the published NS1000 Installation Manual shall take precedence.

1.1 Unpacking (1)

Unpacking

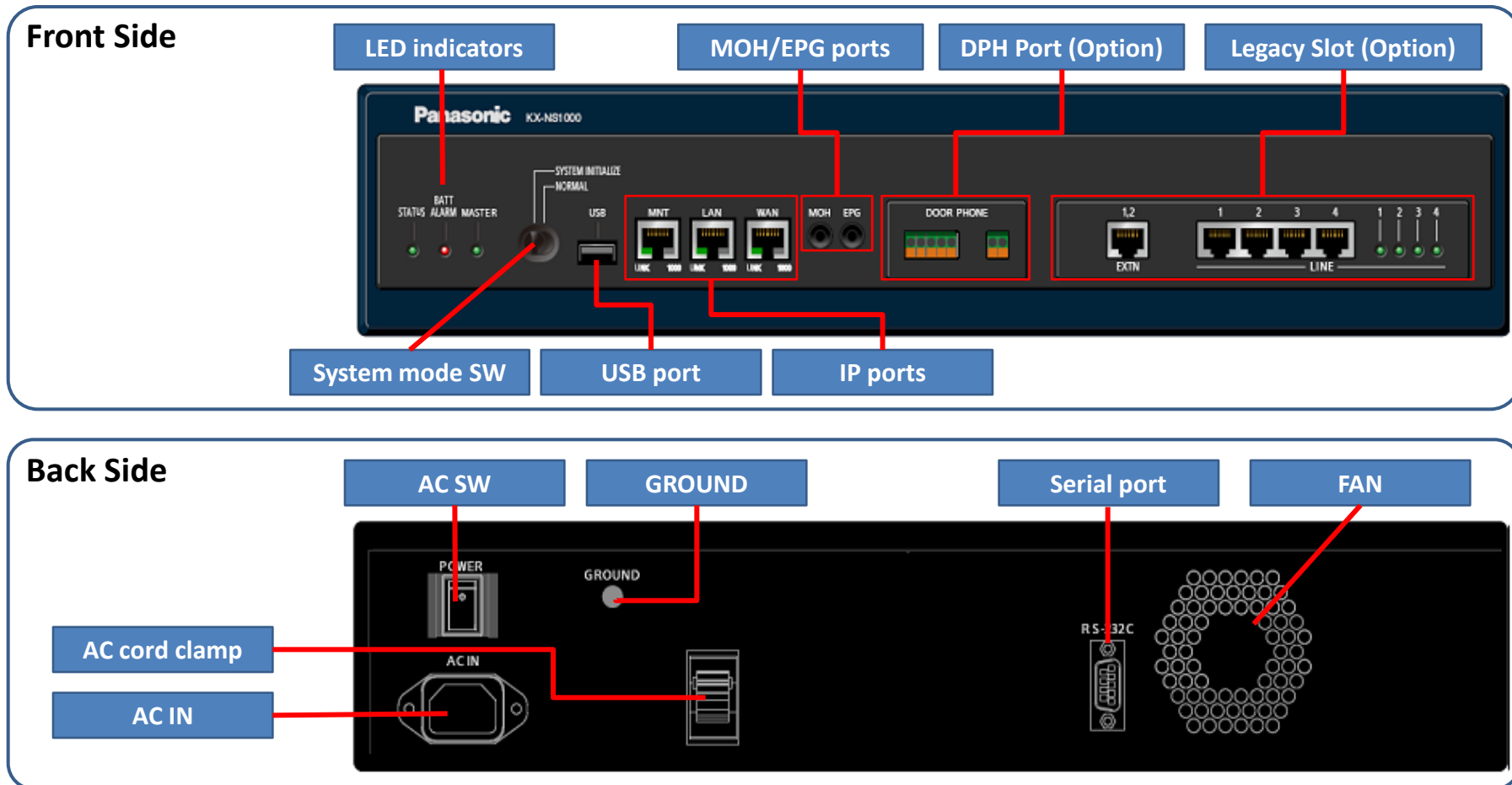
Remove the NS1000 from the box and check that the following items are present;

Description	Quantity
NS1000 Main Unit	1
AC Cord	1
19" Rack-mounting bracket	2
AC Cord Hook Clip	1
Screws 	6

1.2 Component Location (1)

Component location (External)

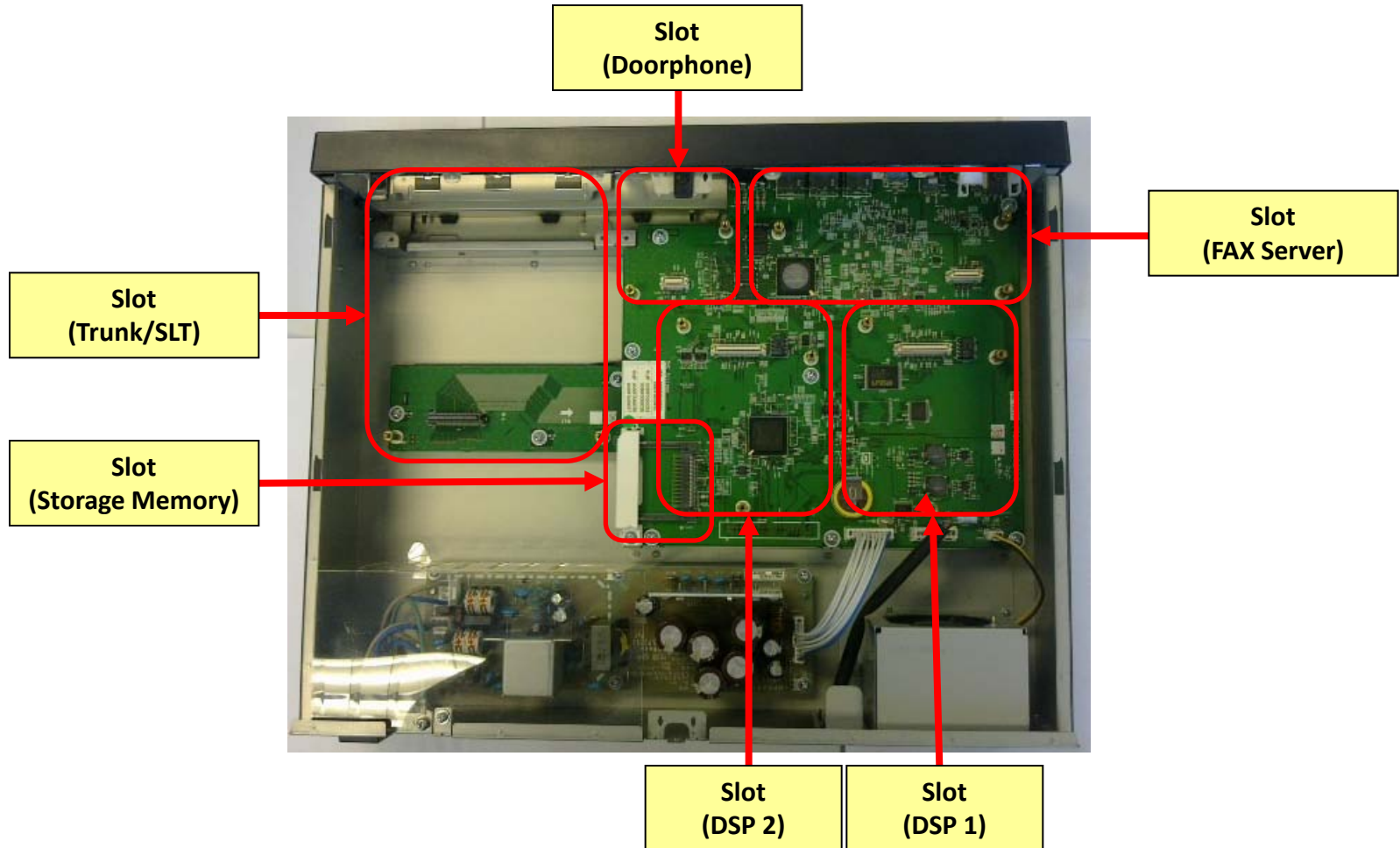
The main ports, jacks and LEDs etc are shown below;



1.2 Component Location (2)

Component location (Internal)

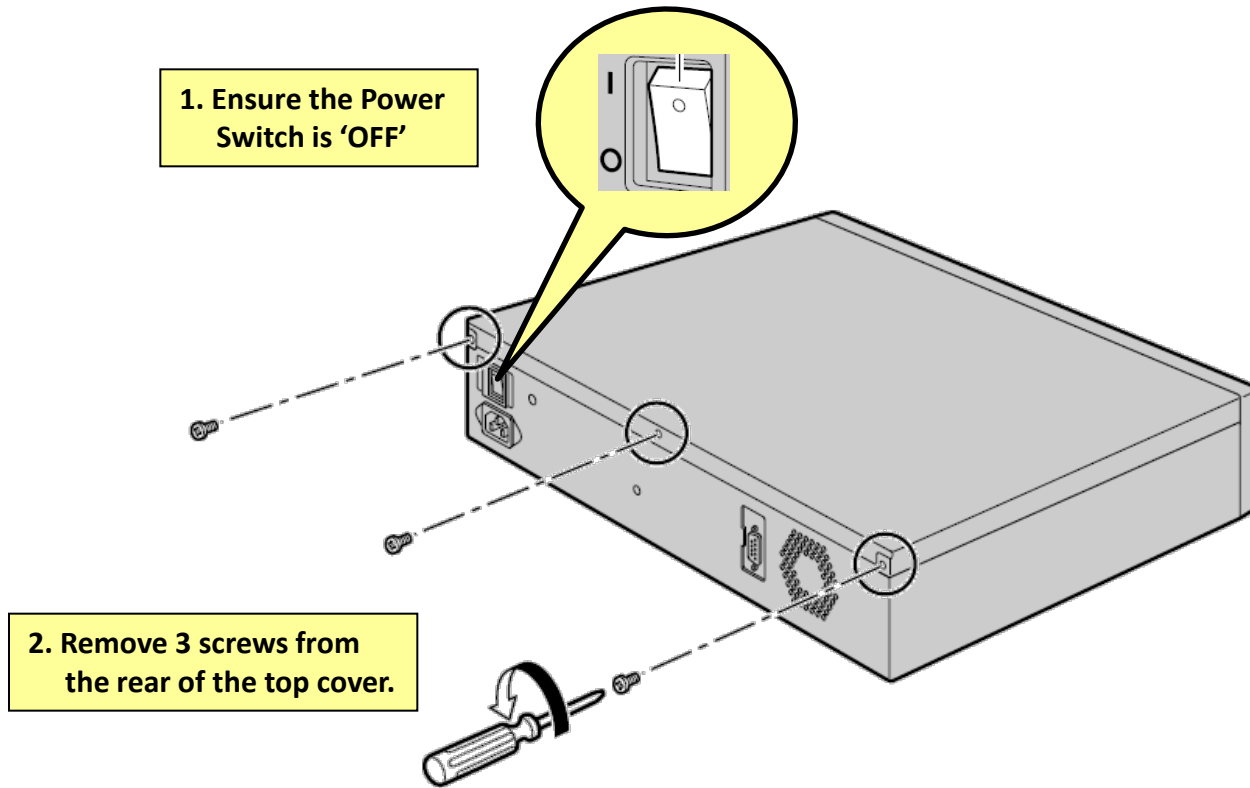
The expansion/option slots are shown below;



1.3 Option Installation (1)

Option Installation

- Optional cards can be installed when the top cover is removed.
- Option Cards are not “Hot-Swap”
- Power must be removed from the unit before optional cards are installed



NB: Where possible, Option cards should be installed before installing and powering-on the unit for the first time. When this is not possible, the system must first be 'SHUTDOWN' using the Web Maintenance Console.

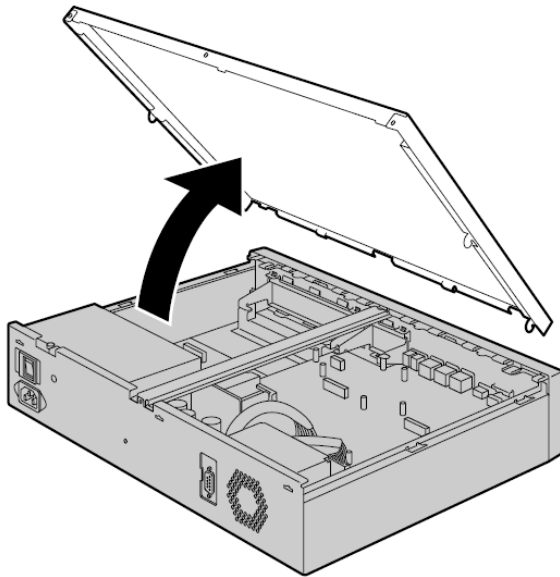
Removing the power without shutting down the unit may damage the systems file-structure and render the system inoperable.

1.3 Option Installation (2)

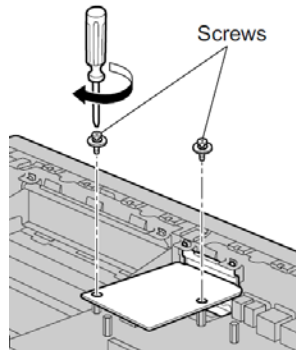
Option Installation

The required options can now be installed.

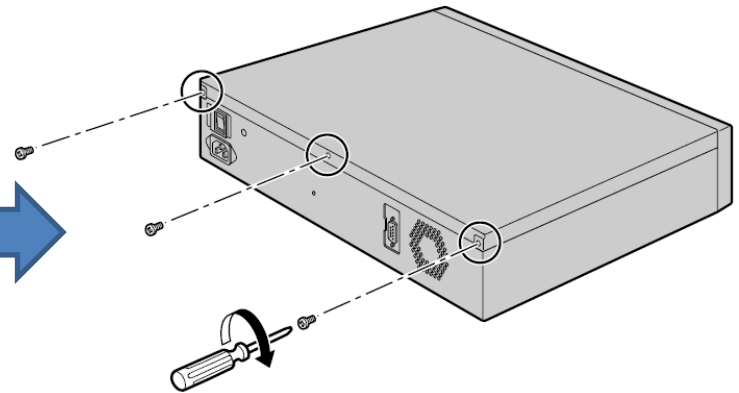
3. Remove the cover



4. Install the required options



5. Replace the top cover and screws.



CAUTION:

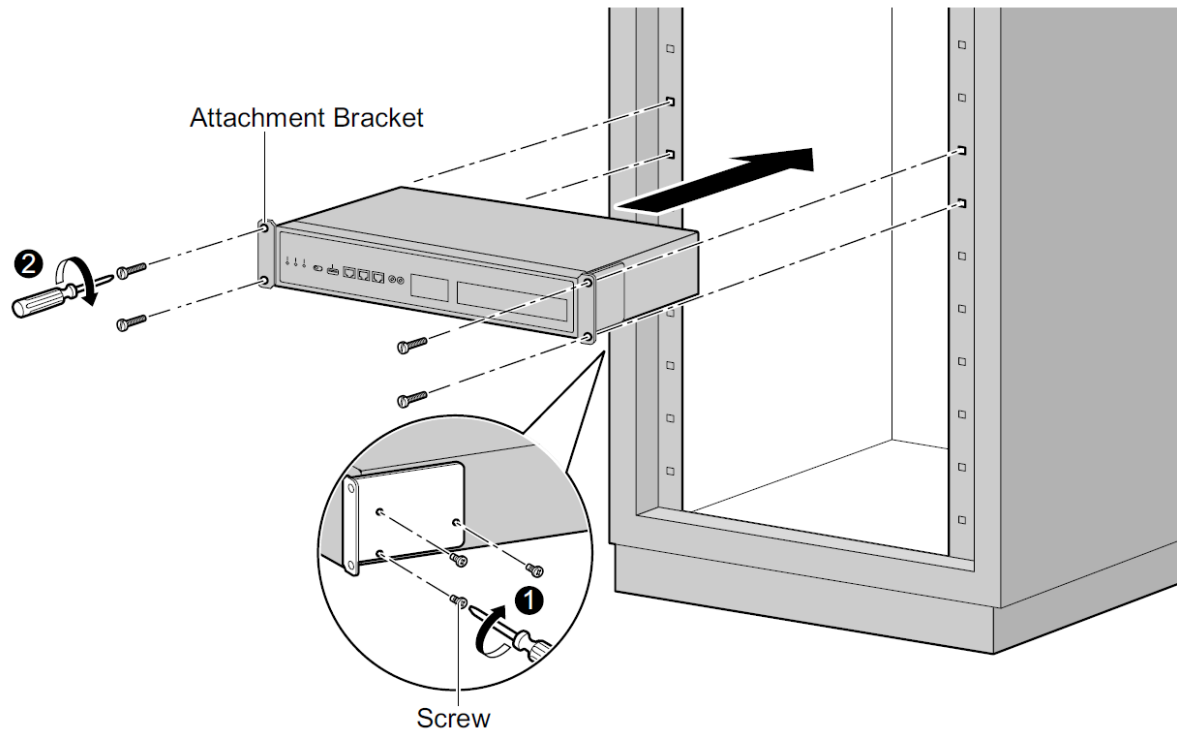
When installing or removing option cards, do not put pressure on the main board. Damage to the option and main board may result.

1.4 Rack Mounting

Rack Mounting the NS1000

The NS1000 can be rack-mounted using the supplied brackets and screws.

1. Mount the brackets onto the NS1000.
2. Bolt the NS1000 into the rack using the hardware supplied by the rack manufacturer.



Size = 2U

Dimensions:
430mm×88mm×340mm

Weight : Under 4.5kg
(Fully Mounted)

**NB: Ensure that there is sufficient ventilation around the system and that the rack temperature limit is not exceeded.
(Refer to the Installation manual for further details)**

1.5 Desk Mounting

Desk Mounting the NS1000

The NS1000 can be installed on a flat surface.

- The unit **MUST** be placed flat on it's base (Not on it's back, sides or upside-down etc)
- The units FAN opening **MUST** be clear
- A 10cm gap around the sides and 20cm over the top of the unit **MUST** be maintained.
- **DO NOT** place flammable (wood etc) objects behind the unit (Refer to the Installation Manual for more details)

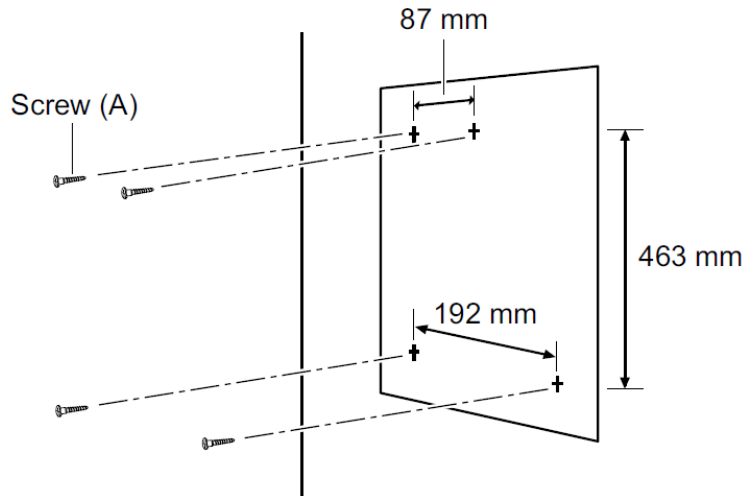


1.6 Wall Mounting

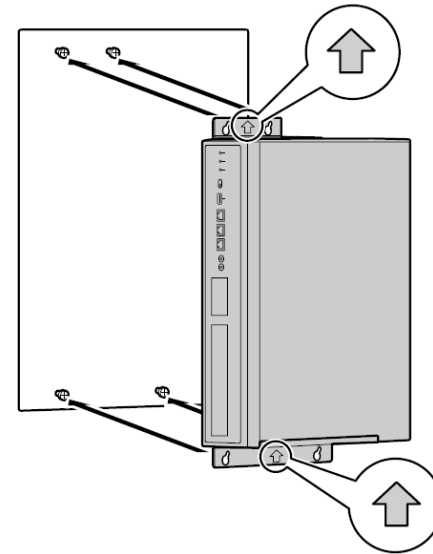
Wall Mounting the NS1000

The NS1000 can be installed onto a suitable wall using the optional Wall Mounting kit.
(Refer to the Installation Manual for further details)

1. Install the screws
(with suitable wall anchors etc)



2. Mount the unit to the wall
(using the Wall Mounting Kit)



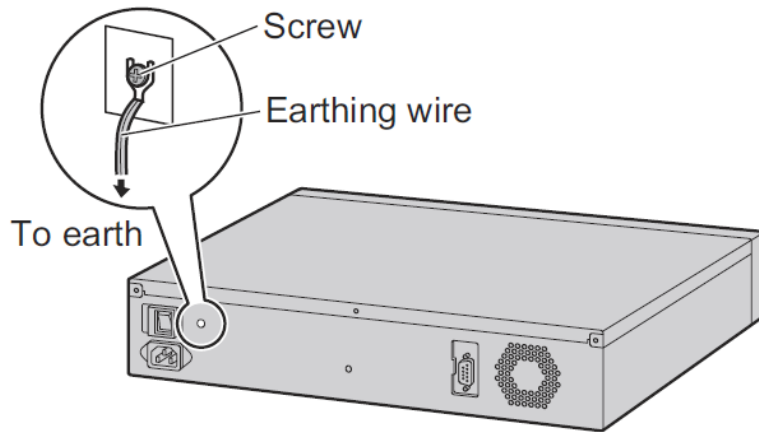
**NB: The unit must be installed with the arrows on the Wall Mounting brackets pointing "UP".
In any other orientation, the unit will not be secured correctly to the wall and may fall.**

1.7 Earth / Surge Protector connection

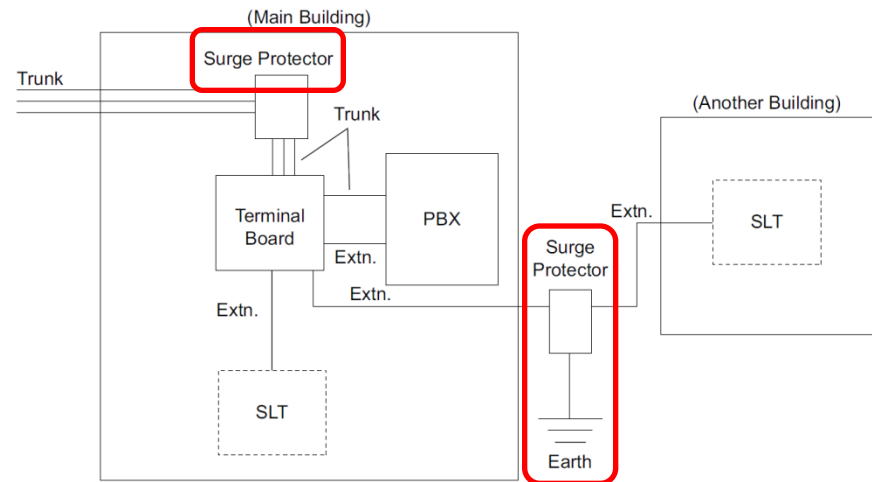
Frame Ground (Earth) and Surge Protection

(Refer to the Installation Manual!)

Frame Ground



Surge Protection



WARNING

- Proper connection to earth is very important to reduce the risk to the user of electrocution or to protect the PBX from the effects of external noise or lightning strike.
- The earth wire of the AC cable has an effect against external noise and lightning strikes, but it may not be enough to protect the PBX and to ensure electromagnetic compatibility. A permanent connection between earth and the earth terminal of the PBX must be made.
- To protect the system from electrical surges, it is strongly recommend to connect the system to a surge protector that meets the following specifications:
 - Surge arrester type: 3-electrode arrester
 - DC spark-over voltage: 230 V
 - Maximum peak current: at least 10 kA

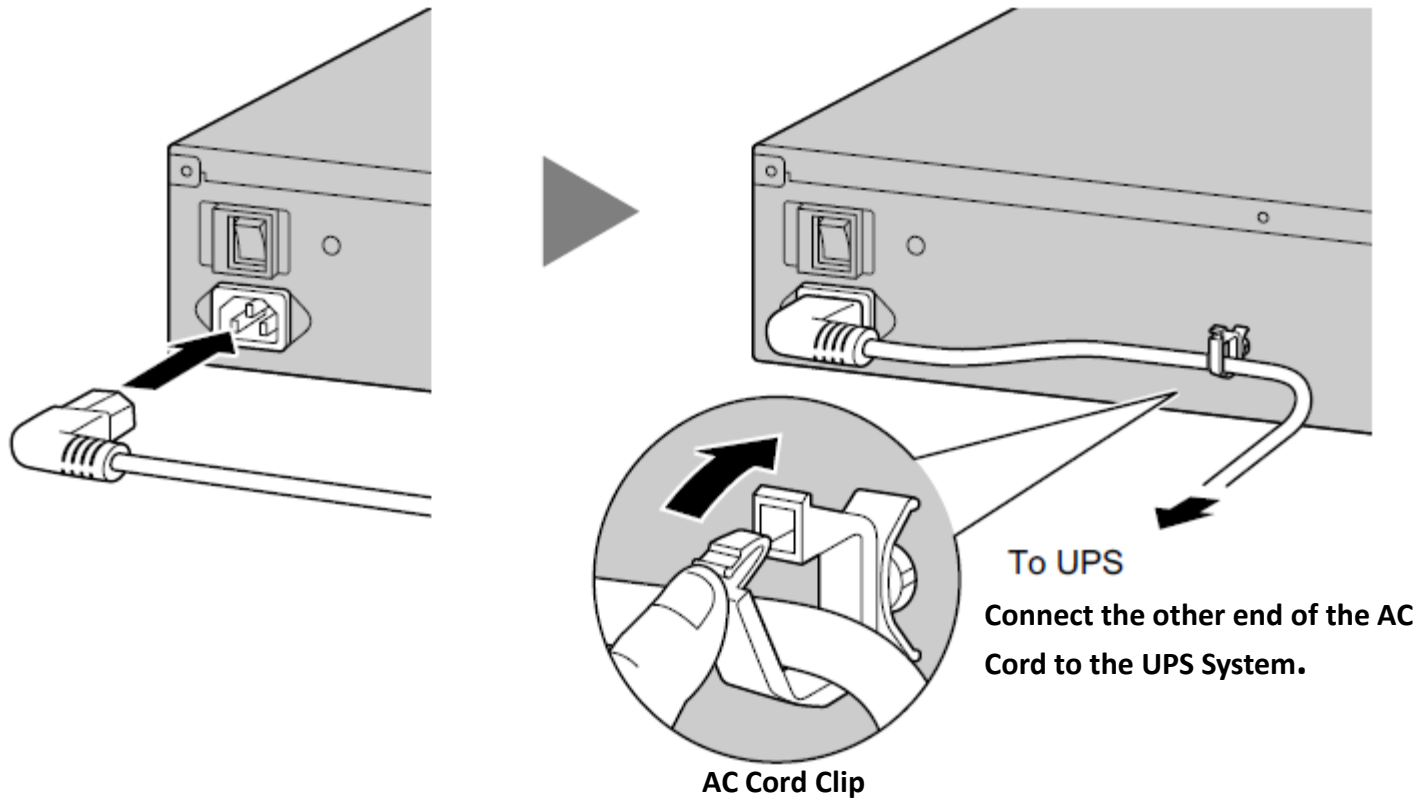
Many countries/areas have regulations requiring surge protection.

Be sure to comply with all applicable laws, regulations, and guidelines.

1.8 Connecting Power

Connecting the AC Cord

Using the AC Cord supplied with the unit, connect it to the PBX and secure with the supplied AC Cord Clip.



UPS System:

A UPS should be connected to the PBX to provide temporary in the event of a power failure.

When using the recommended UPS (APC RS Series with USB interface), the PBX can shutdown automatically by sending a warning signal to the PBX through the USB port.

By shutting down correctly, data loss or serious damage to the PBX caused by a sudden power cut can be prevented.

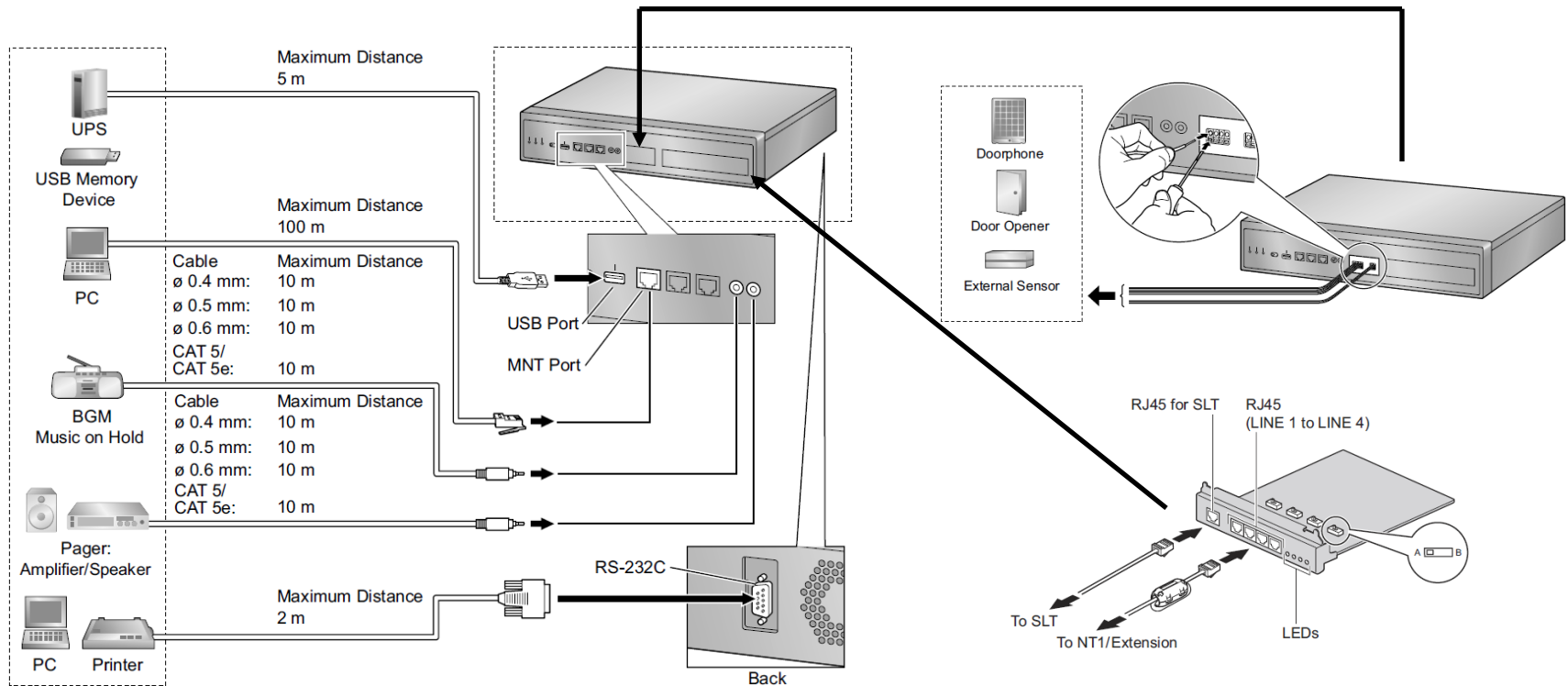
When power is restored, turn off the PBX using the power switch first, and then turn the PBX back on before starting the PBX.

1.9 External connections

Connecting Peripherals and Options

Once the NS1000 has been mounted, various peripherals and options can be connected.

(Refer to the Installation Manual for further details)



Chapter 2

SYSTEM INITIALISATION

2.1 System Initialisation

After installing the option cards, initialize the system (factory default settings)

1. Ensure the power switch is OFF.
2. Slide the System Mode Switch to the “SYSTEM INITIALIZE” position.



3. Turn the power switch ON. (STATUS and MASTER LED will flash AMBER), the STATUS LED will then flash GREEN.
4. Slide the System Mode Switch back to the “NORMAL” position. (When the STATUS LED is flashing.)



STATUS = RED (No DHCP)
STATUS = GREEN (DHCP)
MASTER = Flashing AMBER
(Master/Slave not assigned)



5. When successfully executed, the STATUS indicator will stop flashing and stay lit. (RED or GREEN)
Refer to Appendix for LED Sequence Detail.

2.2 Web Console Preparation

Below are the system requirements necessary for Web Connection to the NS1000

PC Requirements

	Minimum	Recommended
CPU	1.0GHz Intel Pentium/Celeron processor, or higher spec CPU	Intel Core 2 Duo/3.2GHz Intel Pentium/ Celeron processor, or higher spec CPU
RAM	256MB (1024MB for Windows Vista)	2048MB
OS	Windows XP Professional Windows XP HOME Edition Windows Vista Windows 7	Windows XP Professional Windows XP HOME Edition Windows Vista Windows 7
HDD	1.5GB or more available hard disk space	10GB or more available hard disk space
Display	Screen resolution: XGA (1024 * 768) DPI setting: Normal size (96 DPI)	Screen resolution: XGA (1024 * 768) DPI setting: Normal size (96 DPI)

Supported Browsers



Windows Internet Explorer 7 or 8



Mozilla Firefox 4

Browser Settings

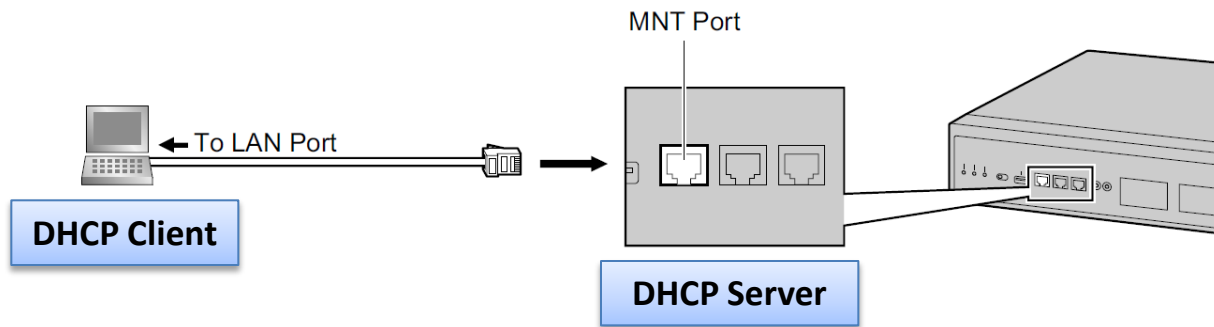
Enable the following functions in the browser's settings:

- Cookies
- JavaScript
- The ability to download files
- The display of animations
- The display of images

2.3 Web Console Connection

When the system has been initialized, the Setup Wizard can be run via the Web Maintenance Console (Web-MC).

Connecting a PC to the NS1000 via the Web-MC

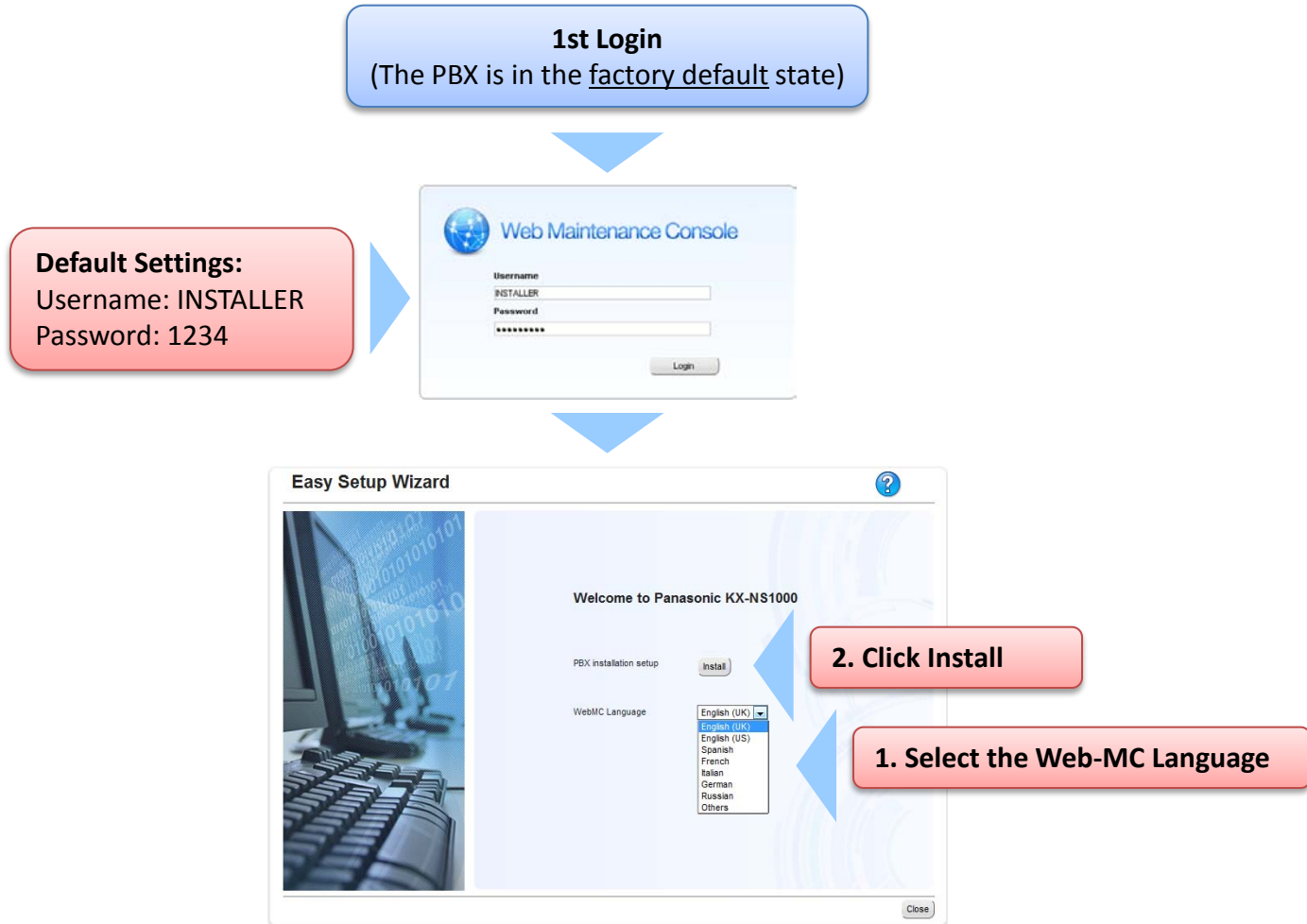


1. Set your PC as a DHCP Client (Automatically Obtain IP Address.)
2. Connect your PC to the MNT Port of the NS1000 (Default IP Address 223.0.0.1)
3. Open your Browser and enter the URL <http://223.0.0.1/WebMC>
4. The Web Maintenance Console login screen will then be displayed in your browser.

The screenshot shows the login interface for the Web Maintenance Console. It has a light blue background. At the top left is a blue globe icon with network lines. To its right is the text 'Web Maintenance Console' in blue. Below this are two input fields: 'Username' and 'Password'. At the bottom right is a 'Login' button.

2.4 First Login (Factory Default Setting)

When connecting to the system for the first time, the Easy Setup Wizard will launch.



2.5 Easy Setup (1)

Location Setting

1. Set the unit status (Master/Slave), Suffix and Area

Easy Setup Wizard

1 Location Setting

2 PBX Setting

3 LAN Setting

4 Registration Setting

5 SNTP Daylight Saving

6 Maintenance Setting

Location Setting

PBX Type:

Master

Slave

If located on different network from Master PBX

Master PBX IP: 0.0.0.0

Suffix Code: UK

Area: United Kingdom

Previous

Next Close

Set the unit as Master or Slave.

Set the unit Suffix Code (UK, NE, CE, GR etc) and your required country. The Suffix Code can be found on the units Nameplate and box

Click 'Next' to continue.

- If the Unit is to be configured as a Slave unit of a One-Look System on a Remote Site (Different Network than the Master), then set the PBX Type as 'Slave' and enter the Master PBX IP Address in the Location Setting. (Master units in a One-Look system or Stand-Alone units must be configured as a 'Master').
- It is important to select the correct Suffix/Country settings so that the correct default tones, emergency dial and other country specific data are set automatically.

2.5 Easy Setup (2)

PBX Setting

2. Give the system an appropriate name and set the Time Zone

The screenshot shows the 'Easy Setup Wizard' interface. On the left, a sidebar lists six steps: 1 Location Setting, 2 PBX Setting (highlighted), 3 LAN Setting, 4 Registration Setting, 5 SNTP Daylight Saving, and 6 Maintenance Setting. The main area is titled 'PBX Setting' and contains three input fields: 'Site name (1-32 characters):' with the value 'NS1000', 'Time Zone:' with '+0' and ': 00' selected, and 'Local Time:' with '2011/10/03 10:42:06'. A 'Previous' button is at the bottom left, and 'Next' and 'Close' buttons are at the bottom right. The 'Next' button is highlighted with a red box. Four red callout boxes with blue arrows provide instructions: 'Use a name which easily identifies the unit.' points to the site name field; 'Select the Time Zone.' points to the time zone dropdowns; 'The Local date and time are obtained automatically from your PC. Check that the PC date/time is correct.' points to the local time field; and 'Click 'Next' to continue.' points to the 'Next' button.

Easy Setup Wizard

PBX Setting

Site name (1-32 characters): NS1000

Time Zone: +0 : 00

Local Time: 2011/10/03 10:42:06

Use a name which easily identifies the unit.

Select the Time Zone.

The Local date and time are obtained automatically from your PC. Check that the PC date/time is correct.

Click 'Next' to continue.

Previous Next Close

2.5 Easy Setup (3)

LAN Setting

3. Enter the required LAN Settings

Easy Setup Wizard

1 Location Setting
2 PBX Setting
3 LAN Setting
4 Registration Setting
5 SNTP Daylight Saving
6 Maintenance Setting

LAN Setting

Obtain an IP address automatically

Use the following IP address

IP Address:	192.168.0.101
Network Mask:	255.255.255.0
Default Gateway:	0.0.0.0

Obtain DNS server address automatically

Use the following DNS server address

Preferred DNS IP Address:	0.0.0.0
Alternative DNS IP Address:	0.0.0.0

Obtain DSP IP address automatically

Use the following DSP IP address

DSP Card #1	
IP Address 1:	192.168.0.102
IP Address 2:	192.168.0.103
DSP Card #2	
IP Address 1:	192.168.0.104
IP Address 2:	192.168.0.105

By default, the PBX uses a static IP Address (Recommended)

By default, no DNS server addresses are set. Configure them as required.

By default, the DSP Cards use DHCP to obtain an IP-Address, however static addresses can also be assigned.

Previous **Next** Close

Note: If you are Not using DHCP then you Must assign a DSP IP Address Manually.

Click 'Next' to continue.

2.5 Easy Setup (4)

LAN Setting

4. Enter the IP Terminal Registration Mode setting and select if 'One-Look' Trial should start.

Easy Setup Wizard

1 Location Setting
2 PBX Setting
3 LAN Setting
4 **Registration Setting**
5 SNTP Daylight Saving
6 Maintenance Setting

Registration Setting

IP Terminal Registration Mode

- Manual
- Full Automatic
- Extension Number Input

One Look Networking (Trial Activation Key):
*available for 60 days from current local time.

- Active
- Non Active

There are three terminal registration Modes;

Manual:
Suitable for all supported IP Terminals and network configurations. Registration information is set manually in the Terminal and PBX. **(This is the recommended setting when a range of IP/SIP Terminals will be used with the system.)**

Full Automatic:
Suitable for UT/NT Terminals connected to the same network as the PBX. All settings, including Extension Number are registered automatically. **NB: DHCP Server Required**

Extension Number Input:
Suitable for NT Terminals connected to the same network as the PBX. All network and registration settings are registered automatically. The Extension number is configured manually via the Terminal. **NB: DHCP Server Required**

If **ACTIVE** is selected, then the **60-day One-Look Trial** will start. If **NON-ACTIVE** is selected, it is possible to **Activate the Trial** at a later date.

Previous Next Close

Click 'Next' to continue.

Note:

1. Non-UT Series SIP Terminals must be registered manually.
2. By default, the UT-Series SIP Extension password is automatically set to '1234'

2.5 Easy Setup (5)

SNTP (Simple Network Time Protocol) / Daylight Saving Setting

5. The source used for automatic time adjustment and the Daylight Saving mode is set here. This is useful to keep the time displayed on the terminals and SMDR records etc accurate.

The screenshot shows the 'Easy Setup Wizard' interface. On the left, a vertical list of steps is shown: 1 Location Setting, 2 PBX Setting, 3 LAN Setting, 4 Registration Setting, 5 SNTP Daylight Saving (highlighted in yellow), and 6 Maintenance Setting. The main content area is titled 'SNTP Daylight Saving'. It contains two sections: 'Automatic Time Adjustment' and 'Daylight Saving:'. The 'Automatic Time Adjustment' section has three radio buttons: 'Disabled', 'ISDN and Caller ID (FSK)' (selected), and 'SNTP'. Below these are input fields for 'IP Address:' and 'Port:' with the value '123' entered. The 'Daylight Saving:' section has two radio buttons: 'Enable' (selected) and 'Disable'. At the bottom left is a 'Previous' button, and at the bottom right is a 'Next' button. A red box highlights the 'Next' button.

Automatic Time Adjustment can be made using ISDN/Analogue Trunks (ISDN/FSK) or via a suitable SNTP server.

For countries using 'Daylight Saving' - automatic adjustment can be set here.

Click 'Next' to continue.

2.5 Easy Setup (6)

Maintenance / Remote Management Settings

6. The Installer Password can be changed (Strongly Recommended) and SNMP (Simple Network Management Protocol) can be configured here.

Easy Setup Wizard

Maintenance Setting

1 Location Setting
2 PBX Setting
3 LAN Setting
4 Registration Setting
5 SNTP Daylight Saving
6 Maintenance Setting

Installer password (4-16 characters):
Re-enter (4-16 characters):

CAUTION: It is strongly recommended that a password should be complex for maximum protection. Change the password periodically.

SNMP Setting

SNMP Agent Function:
 Disable
 Enable

Port Number (receive): 161

MIB - SysContact:
MIB - SysName: KX-NS1000
MIB - SysLocation:

SNMP Manager

Manager IP Address:
 Manager Host Name:

TRAP port number (send): 162
Community Name: public

Previous Finish

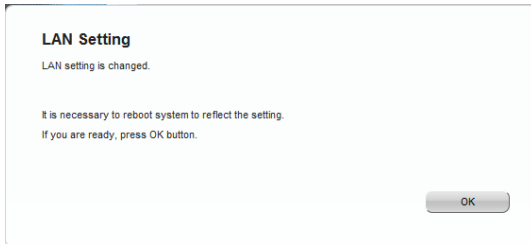
Be sure to change the default Installer password up installation. Use a strong password.

Check the required SNMP settings with the Network Administrator and enter as required to enable Remote Management.

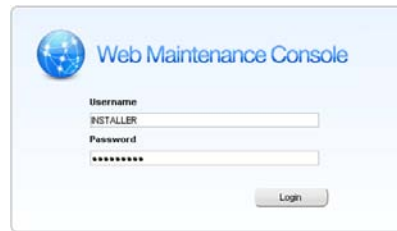
Click 'Finish' to complete Easy Setup.

2.5 Easy Setup (7)

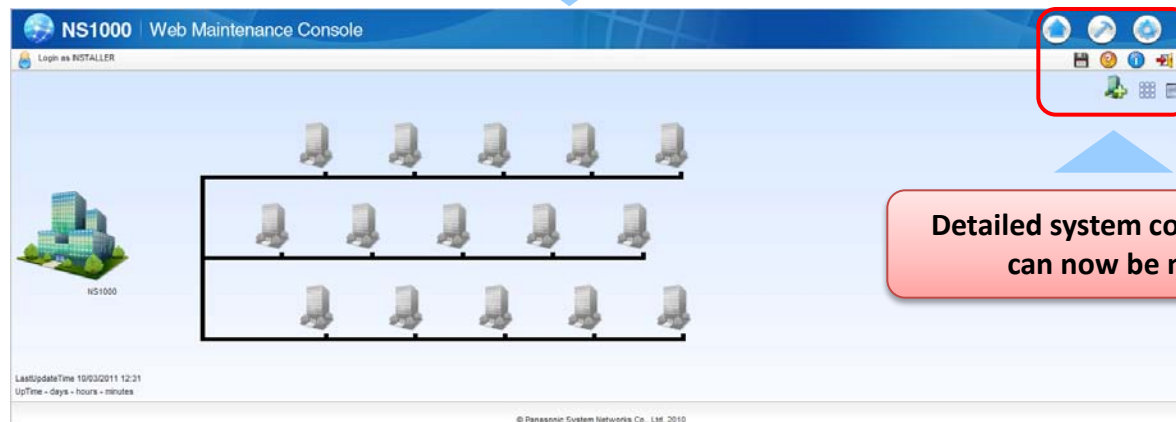
If the systems LAN settings were changed during Easy Setup, you will be prompted to restart the PBX so that the changes can take effect. Be sure to login with the new password etc



2nd Login
(Easy Setup has been completed)



Login with the new password.



Detailed system configuration
can now be made.

2.5 Easy Setup (8)

By Default, the WebMC portal will remain active (without activity) for 60 minutes.

To change the WebMC Portal settings, change the time here after 2nd login :-

The screenshot shows the NS1000 Web Maintenance Console interface. The top navigation bar includes 'NS1000 | Web Maintenance Console' and a 'Settings' icon (a globe) highlighted with a red box. The left sidebar lists various configuration categories, with 'Network Service' expanded to show '5. HTTP' highlighted in yellow and also circled in red. The main content area is titled 'HTTP' and contains the following settings:

- HTTP (LAN / MNT)**
 - Port number: 80
- HTTPs (LAN / MNT)**
 - HTTPs server: Enable Disable
 - Port number: 443
- Automatic logout Timer (min)**: 60 (highlighted with a red box)

Buttons for 'OK', 'Cancel', and 'Apply' are located at the bottom right of the configuration area.

**Network Service
5. HTTP**

**To change the WebMC Auto Logout
timer – change this setting.**

Chapter 3

SLAVE INITIAL CONFIGURATION

3.1 Slave Initial Configuration

Location Setting

1. Set the unit status as Slave.
2. Enter the IP Address of the Master System.

The screenshot shows the 'Easy Setup Wizard' interface. On the left, a sidebar lists six steps: 1. Location Setting (highlighted), 2. PBX Setting, 3. LAN Setting, 4. Registration Setting, 5. SNTP Daylight Saving, and 6. Maintenance Setting. The main area is titled 'Location Setting' and contains the following fields:

- PBX Type:** Two radio buttons are present: 'Master' (unselected) and 'Slave' (selected). A red box highlights these options, with a callout bubble pointing to them that says 'Set the unit as Slave.'
- If located on different network from Master PBX:** A checkbox is checked. Below it, the 'Master PBX IP' field contains the value '192.168.0.101', which is highlighted with a red box and a callout bubble that says 'Enter the IP Address of the Master Unit. Default IP Address: 192.168.0.101'.
- Suffix Code:** A dropdown menu is set to 'UK'.
- Area:** A dropdown menu is set to 'United Kingdom'.

At the bottom of the wizard, there are 'Previous' and 'Next' buttons. A red box highlights the 'Next' button, with a callout bubble that says 'Click 'Next' to continue.'

3.1 Slave Initial Configuration

LAN Setting

3. Enter the required LAN Settings. Change the IP Address to a different number within the same range

Easy Setup Wizard ?

1 Location Setting
2 PBX Setting
3 LAN Setting
4 Registration Setting
5 SNTP Daylight Saving
6 Maintenance Setting

LAN Setting

Obtain an IP address automatically
 Use the following IP address

IP Address: 192.168.0.110
Network Mask: 255.255.255.0
Default Gateway: 0.0.0.0

Obtain DNS server address automatically
 Use the following DNS server address

Preferred DNS IP Address: 0.0.0.0
Alternative DNS IP Address: 0.0.0.0

Obtain DSP IP address automatically
 Use the following DSP IP address

DSP Card #1
IP Address 1: 192.168.0.102
IP Address 2: 192.168.0.103

DSP Card #2
IP Address 1: 192.168.0.104
IP Address 2: 192.168.0.105

Previous Next

Change the IP Address to a different number within the same range

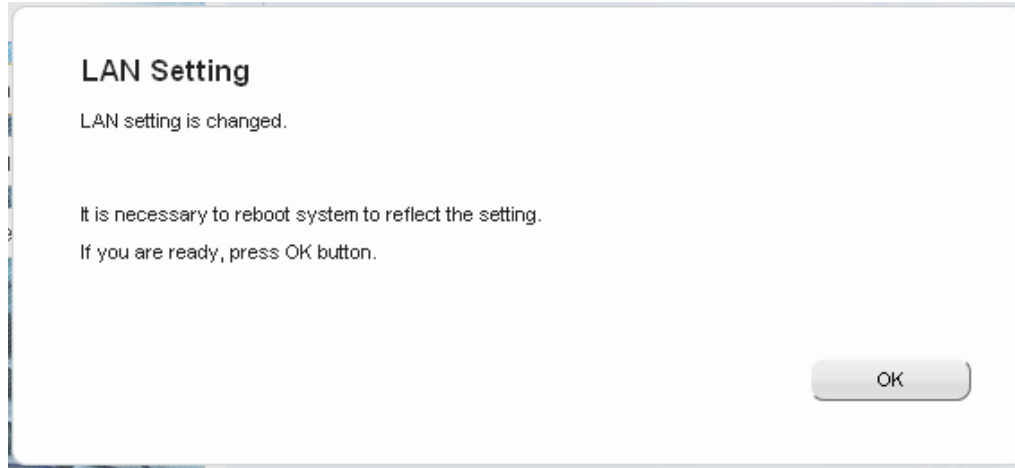
Click 'Next' to continue.

Note: If you are Not using DHCP then you Must assign a DSP IP Address Manually.

3.1 Slave Initial Configuration

LAN Setting

Note: Once the LAN settings has changed, the system will need to reboot. The bellow pop-up will be displayed. Click OK to reboot system.



3.1 Slave Initial Configuration

Registration Setting

4. Enter the IP Terminal Registration Mode as Manual. Full automatic can be used but is not covered in this document. Manual entry reduces the number of Empty Extension numbers in CA.

Easy Setup Wizard

Registration Setting

IP Terminal Registration Mode

- Manual
- Full Automatic
- Extension Number Input

One Look Networking (Trial Activation Key):
*available for 60 days from current local time.

- Active
- Non Active

Activate the 60-day One-Look Trial if required.

Previous **Next**

Click 'Next' to continue.

Note:

1. Non-UT Series SIP Terminals must be registered manually.
2. By default, the UT-Series SIP Extension password is automatically set to '1234'

3.1 Slave Initial Configuration

SNTP (Simple Network Time Protocol) / Daylight Saving Setting

5. The source used for automatic time adjustment and the Daylight Saving mode is set here. This is useful to keep the time displayed on the terminals and SMDR records etc accurate.

The screenshot shows the 'Easy Setup Wizard' interface. On the left, a vertical list of steps is shown: 1 Location Setting, 2 PBX Setting, 3 LAN Setting, 4 Registration Setting, 5 SNTP Daylight Saving (highlighted in yellow), and 6 Maintenance Setting. The main content area is titled 'SNTP Daylight Saving'. It contains two sections: 'Automatic Time Adjustment:' with radio buttons for 'Disabled', 'ISDN and Caller ID (FSK)' (selected), and 'SNTP', followed by 'IP Address:' and 'Port:' input fields (the port field contains '123'); and 'Daylight Saving:' with radio buttons for 'Enable' (selected) and 'Disable'. A 'Previous' button is at the bottom left and a 'Next' button is at the bottom right. Three red callout boxes provide additional information: one points to the 'Automatic Time Adjustment' section, another points to the 'Daylight Saving' section, and a third points to the 'Next' button.

Automatic Time Adjustment can be made using ISDN/Analogue Trunks (ISDN/FSK) or via a suitable SNTP server.

For countries using 'Daylight Saving' - automatic adjustment can be set here.

Click 'Next' to continue.

3.1 Slave Initial Configuration

Maintenance / Remote Management Settings

6. The Installer Password can be changed if required. Even if you want to keep as default (1234) you must re-enter it here before continuing.

Easy Setup Wizard ?

1 Location Setting

2 PBX Setting

3 LAN Setting

4 Registration Setting

5 SNTP Daylight Saving

6 **Maintenance Setting**

Maintenance Setting

Installer password (4-16 characters):

Re-enter (4-16 characters):

SNMP Setting

SNMP Agent Function:

Disable

Enable

Port Number (receive):

MB - SysContact:

MB - SysName:

MB - SysLocation:

SNMP Manager

Manager IP Address:

Manager Host Name:

TRAP port number (send):

Community Name:

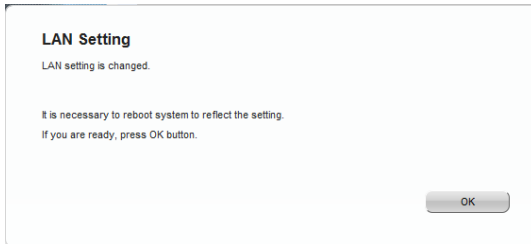
Previous Next

Even if you want to keep the default password you must re-enter it before continuing.

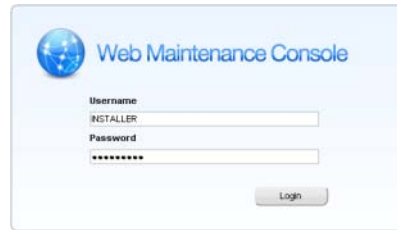
Click 'Finish' to complete.

3.1 Slave Initial Configuration

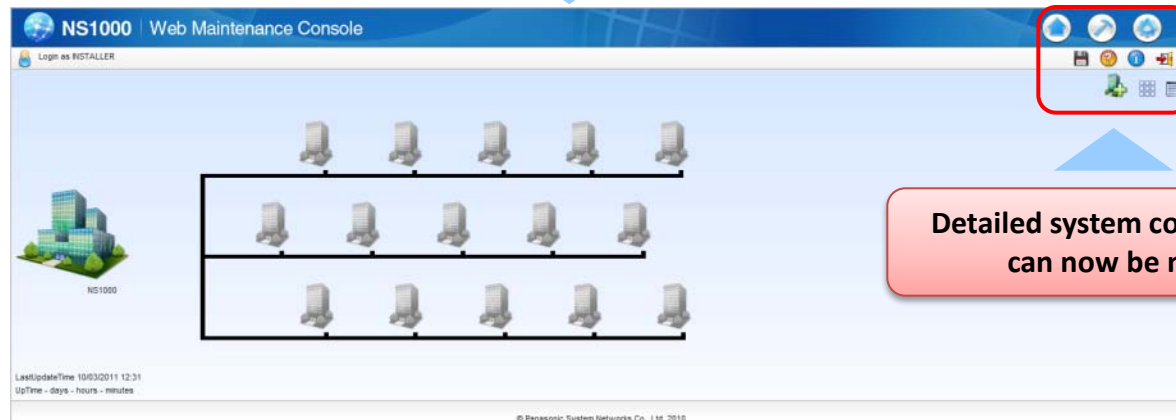
If the systems LAN settings were changed during Easy Setup, you will be prompted to restart the PBX so that the changes can take effect. Be sure to login with the new password etc



2nd Login
(Easy Setup has been completed)



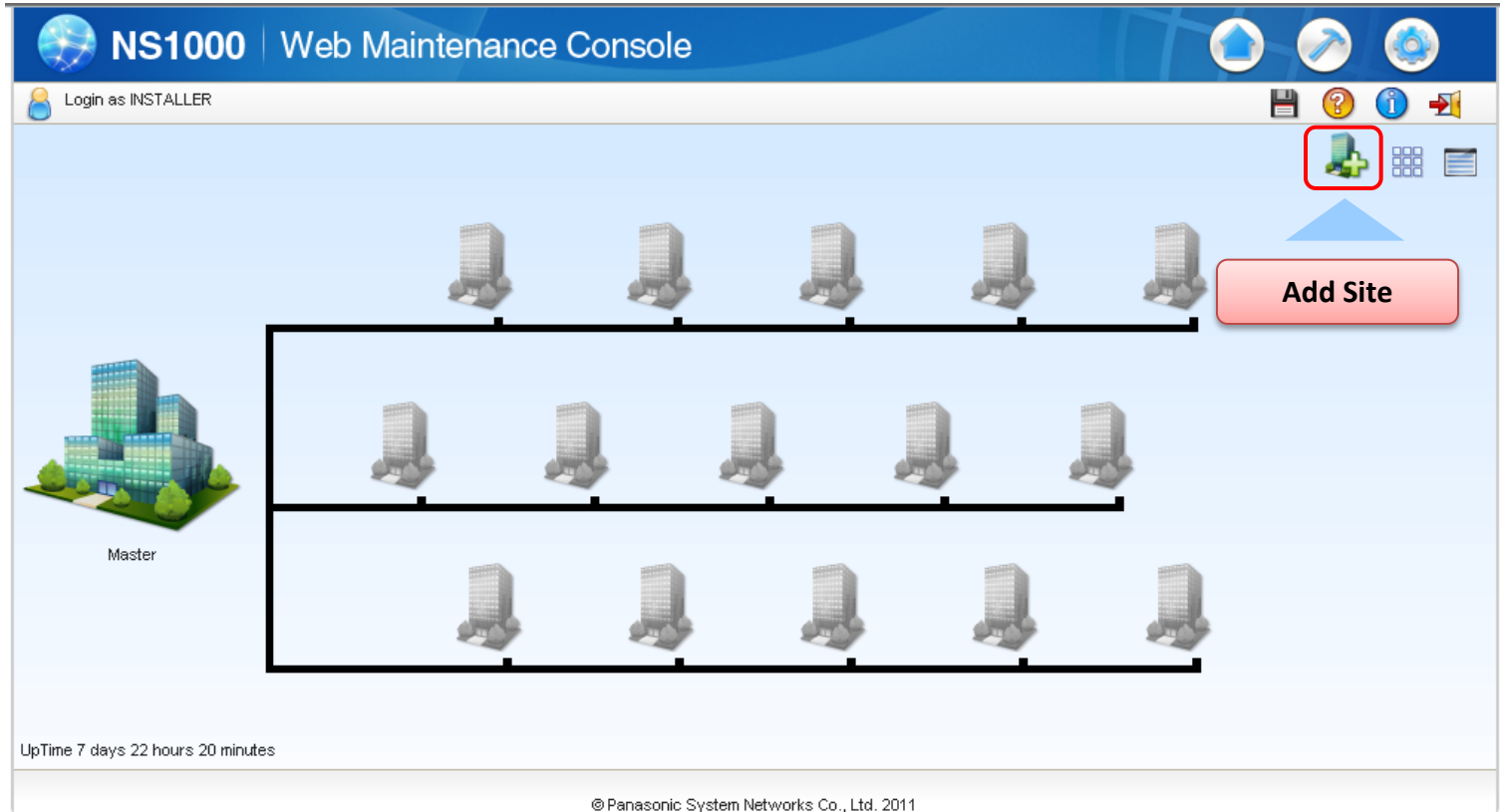
Login with the new password.



Detailed system configuration
can now be made.

3.2 Slave Registration

Once the both systems have been initially configured, the Slave system needs to be added to the Master system network. Log into the Master system. You will be presented with the below screen. Click on the Add Site Button.



Follow the prompts to add the desired Slave site.

3.2 Slave Registration

Once the Slave system has been added to the network, the Slave system needs to be registered to the Master system. Log into the Master system. You will be presented with the bellow screen. Click on the List button.

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the title "NS1000 Web Maintenance Console" and a user login indicator "Login as INSTALLER". The main area features a network diagram with a central "Master" node (represented by a large blue building icon) and three horizontal rows of "Slave" nodes (represented by smaller grey building icons). A red box highlights a "List View" button in the top right corner, which is connected to a red-bordered icon in the toolbar. The bottom of the interface shows the system uptime as "UpTime 7 days 22 hours 20 minutes" and the copyright notice "© Panasonic System Networks Co., Ltd. 2011".

3.2 Slave Registration

Click on the Registration button. From the popup, select the Slave system displayed in the list and click Next.

The screenshot displays the NS1000 Web Maintenance Console interface. At the top, the title bar reads "NS1000 | Web Maintenance Console". Below the title bar, there are navigation icons and a status legend with colored circles: green for INS, yellow for OUS, blue for Pre-INS, purple for Idle, and red for Fault.

The main content area features a table with the following columns: Site ID, Site Name, Location(MIB), Status, PBX Mode, IP Address, MAC Address, PBX Version, and PBX Region. The table contains one entry: Site ID 1, Site Name Master, Location(MIB) (empty), Status INS, PBX Mode master, IP Address 192.168.254.190, MAC Address 00:80:F0:C6:0C:5E, PBX Version 101.00223, and PBX Region UK.

Overlaid on the interface are several red callout boxes with blue arrows pointing to specific elements:

- Click on Registration**: Points to the "Registration" tab in the top navigation bar.
- Select Slave Unit**: Points to the "Slave" entry in the "Available sites for registration" list.
- Select move button**: Points to the right-pointing arrow button (==>) between the two lists.
- Click Next**: Points to the "Next" button at the bottom of the registration popup.

The registration popup window has two panes: "Available sites for registration" and "Selected sites for registration". The "Available sites for registration" pane contains the "Slave" entry. The "Selected sites for registration" pane is currently empty. Below the panes are buttons for "Cancel" and "Apply". At the bottom of the popup, there are "Next" and "Cancel" buttons.

3.2 Slave Registration

Once the Slave is registered, it will show in the list view. Pressing the Home button will show the systems in the Tree view. This is displayed on the next slide.

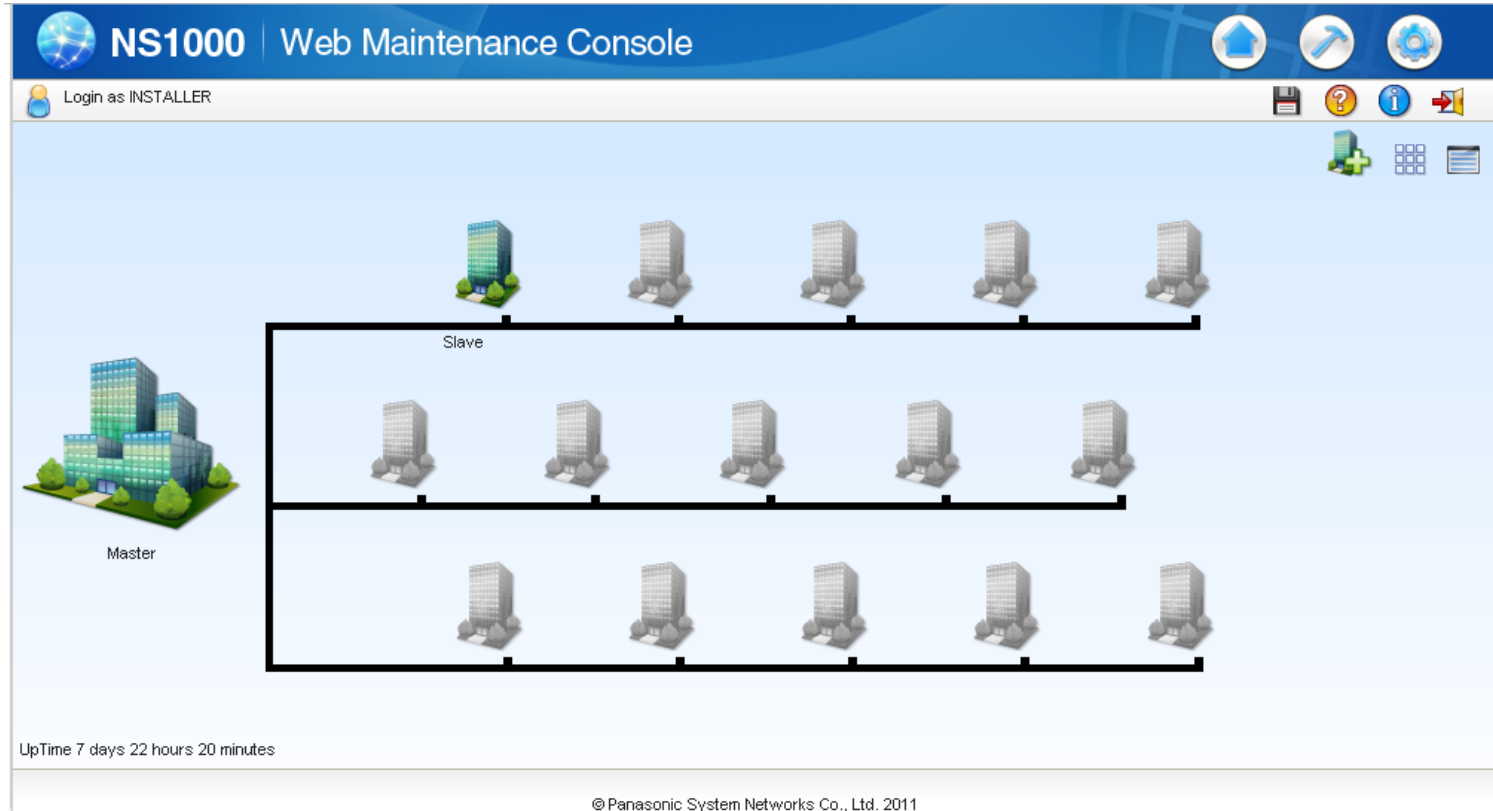
The screenshot displays the NS1000 Web Maintenance Console interface. At the top, there is a blue header with the text "NS1000 Web Maintenance Console" and several navigation icons. Below the header, a login prompt "Login as INSTALLER" is visible. A legend indicates the status of sites: INS (green), OUS (yellow), Pre-INS (blue), Idle (purple), and Fault (red). The main content area features three tabs: "Registration" (selected), "De-registration", and "Forced De-registration". Below the tabs is a table with the following data:

Site ID	Site Name	Location(MIB)	Status	PBX Mode	IP Address	MAC Address	PBX Version	PBX Region
1	Master		INS	master	192.168.254.190	00:80:FD:C6:0C:5E	101.00223	UK
2	Slave		INS	slave	192.168.254.195	00:80:FD:C6:0C:58	101.00223	UK

At the bottom of the console, there are three buttons: "OK", "Cancel", and "Apply". The footer contains the copyright information: "© Panasonic System Networks Co., Ltd. 2011".

3.2 Slave Registration

Once the Slave has been registered, it will show on the Home screen (In-Service).



Chapter 4

UPS CONNECTION

4.1 UPS Connection and setting (1)

UPS (Uninterruptible Power Supply) Integration

Description

An uninterruptible power supply unit (UPS) is a device that supplies power for several minutes to a connected device when a power failure occurs.

If the PBX is connected to a compatible UPS via USB when a power failure occurs, the PBX can determine how much power remains in the UPS and shut down when the remaining power drops below a specified amount to prevent data loss or corruption.

The following features are also available:

- Specify the remaining battery level at which to shut down the PBX.
- Receive e-mail notifications of changes to the status and availability of a UPS.

Conditions

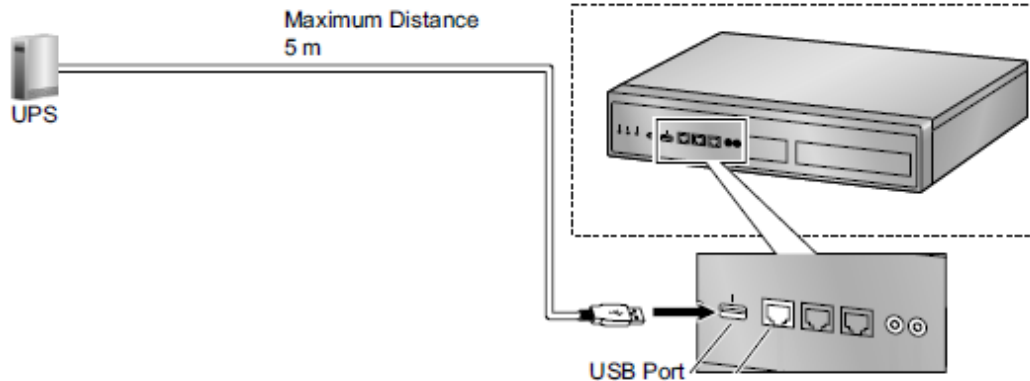
- For details about UPS units that are compatible with the automatic shutdown feature of this PBX, consult your dealer. If an incompatible UPS is connected and the UPS runs out of power, the PBX will turn off without shutting down.
- The power cord and USB cable must be connected to the same UPS. Connecting them to different UPS's can result in incorrect operation.

IMPORTANT

- When power is restored after a power outage, the PBX operates in the following manner:
 - If the PBX did not shut down, normal operation continues uninterrupted.
 - If the PBX shut down and power remains in the UPS, the PBX must be started again manually. (The power switch must be turned off and then on again.)
 - If the PBX shut down and no power remains in the UPS, the PBX starts automatically. (This is because the PBX's power switch is on.)

4.1 UPS Connection and setting (2)

1. Connect the UPS as described in the Installation manual



2. Set the NS1000 Shutdown threshold via the WebMC

Maintenance -> Status -> Equipment Status -> 1. UPS

Status

- 1. Equipment Status
- 1. UPS**
- 2. CS Information
- 3. PS Information
- 4. UM Port Status
- 5. USB

System Control

Tool

Utility

UPS

UPS Connection Status
: Not Connected

Battery Voltage (V)
:

Battery Charge Percentage (%)
:

Power Supply
:

UPS Shutdown Conditions - Battery level
: 50%

10%

20%

30%

40%

50%

OK Cancel Apply

UPS Status can be seen here

Set the UPS Battery Level, that when reached, will cause the PBX to Shutdown

NB: UPS Status alerts can also be sent via email.

SYSTEM INITIALIZATION COMPLETE

Section - 2

WEB MAINTENANCE CONSOLE

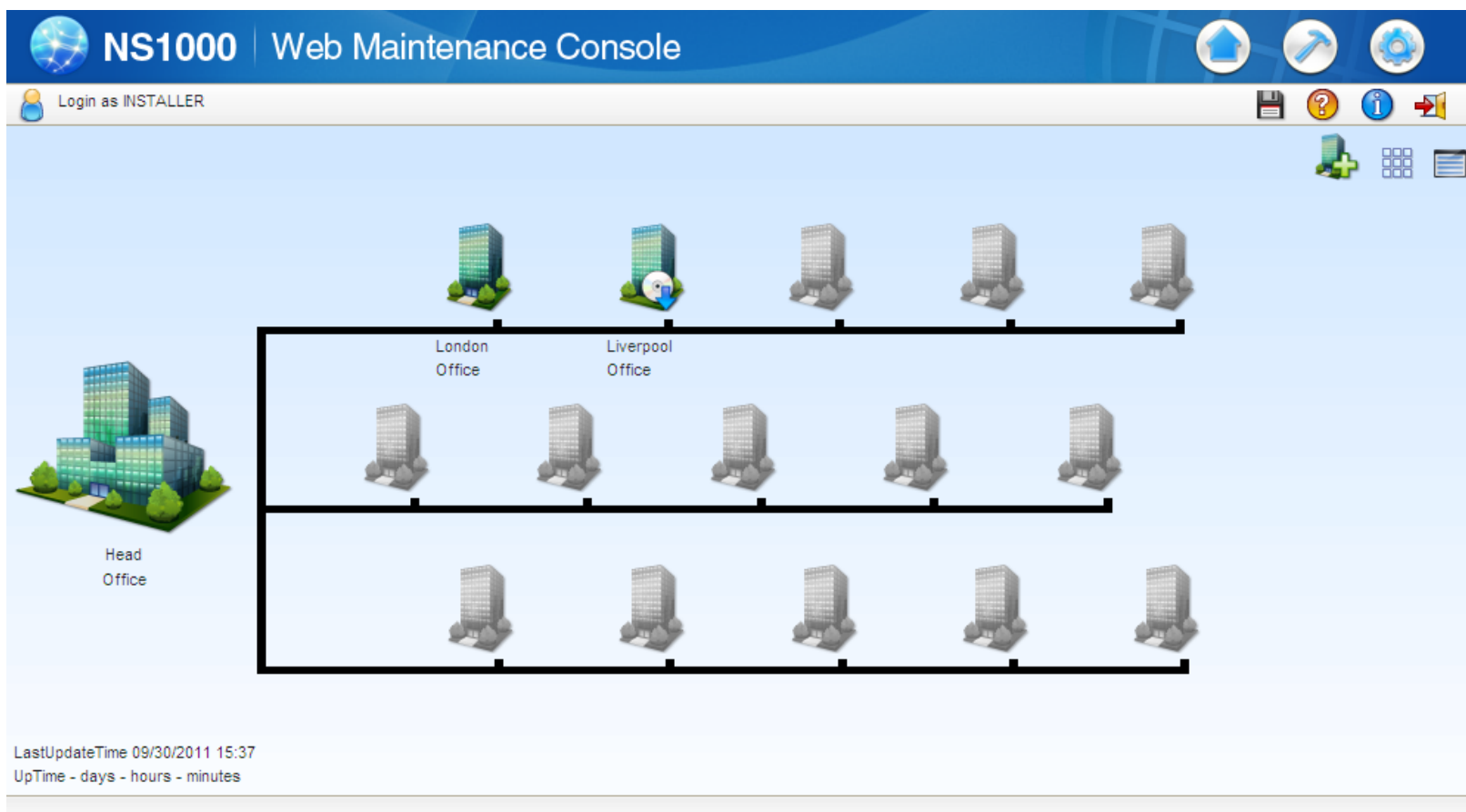


Introduction

Web Maintenance Console (Web MC)

All features and settings of the PBX can be set through system programming with the Web Maintenance Console.

The following explains the installation procedure, basic structure and operation of the WebMC.



Contents

Chapter 1 Overview

1-1. Web Maintenance Console

1-2. Operating Modes

1-3. User's Account

Chapter 2 Connections

2-1. System Requirements

2-2. Available Connections

2-3. Accessing Web MC

2-4. Logging into Web MC

Chapter 3 WebMC – Tour

3-1. Screen Descriptions

3-2. Button Descriptions

3-3. SLOT View

Chapter 4 Appendix

Static NAT Setting Example

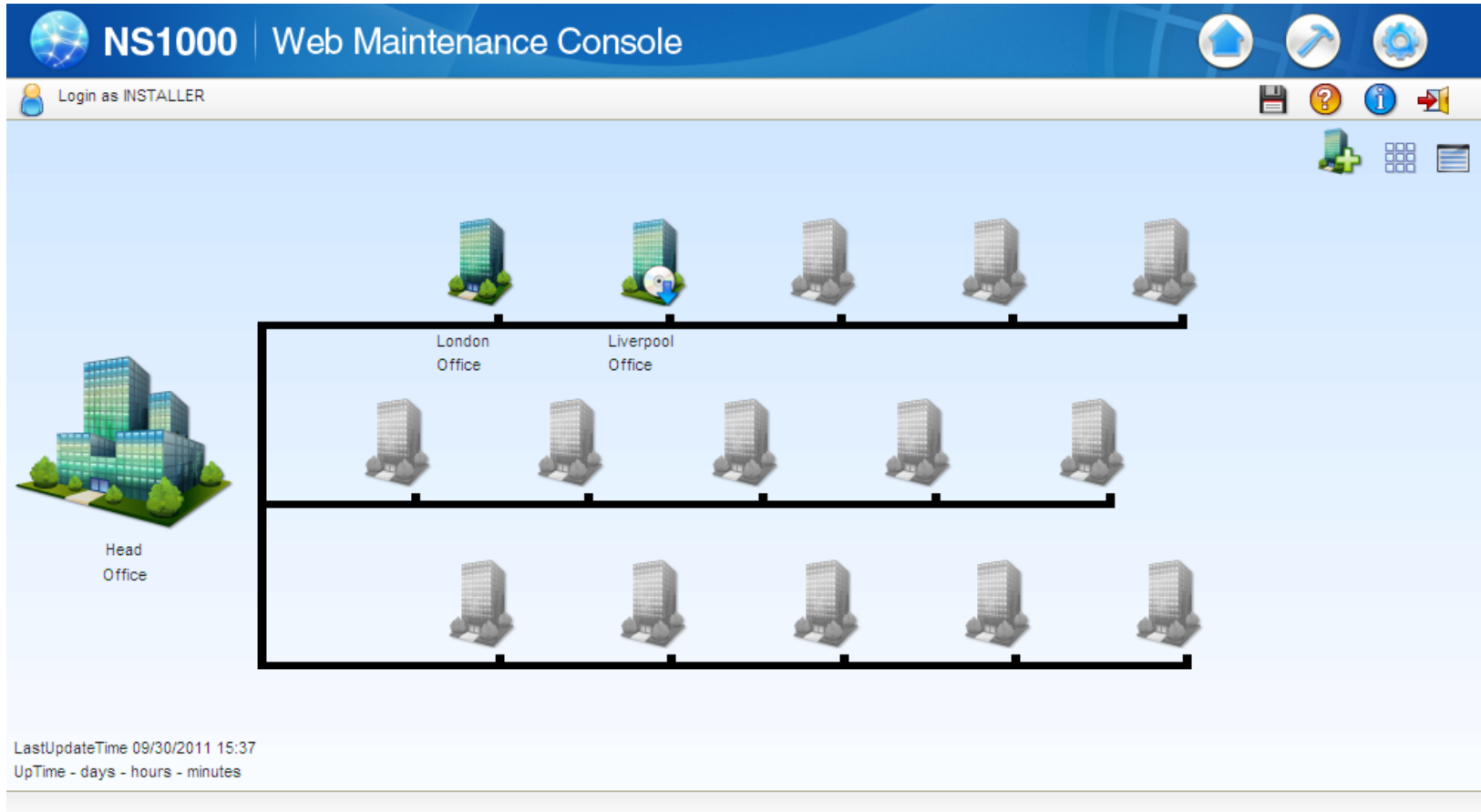
Chapter 1

OVERVIEW

1-1. Web Maintenance Console - Overview

There is only one Programming Tool for KX-NS1000.

The NS1000 WebMC is a web-based application which allows you to manage the PBX system easily.

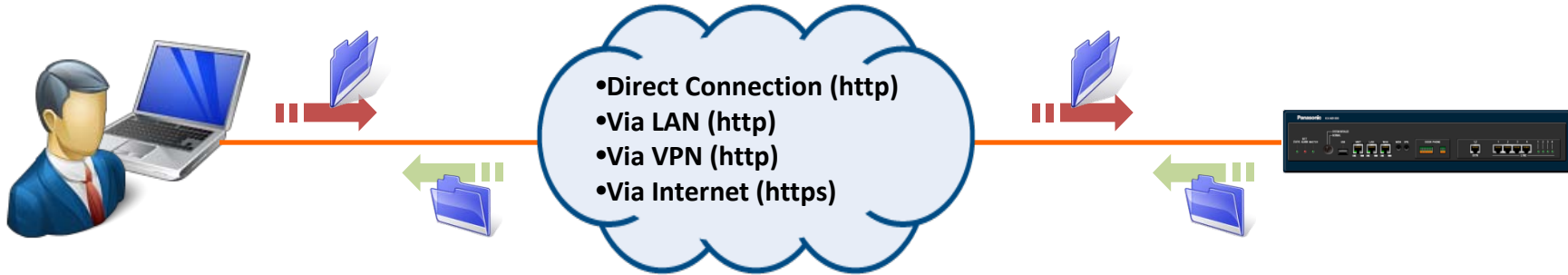


- KX-NS1000 does NOT support Unified PC Maintenance Console (UPCMC) for KX-NCP/TDE/TDA.
- KX-NS1000 does NOT support the system programming using proprietary telephones.

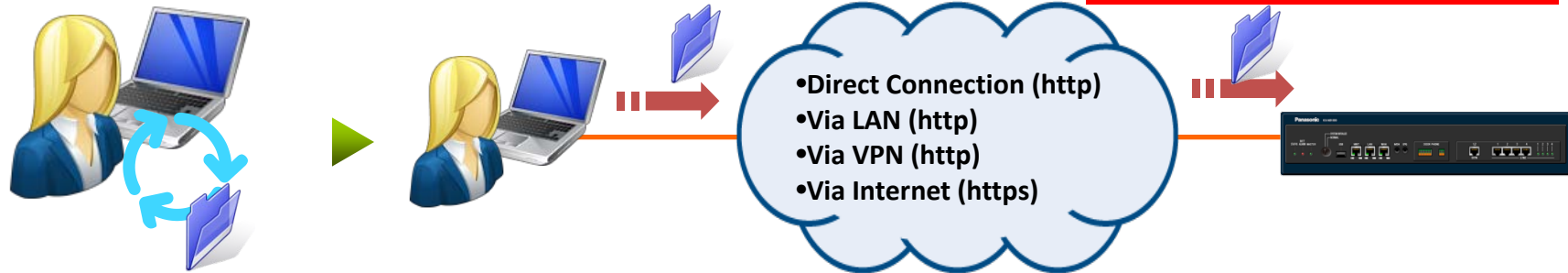
1-2. Operating Modes

There are two programming modes; Interactive Mode & Batch Mode

- Interactive Mode (Allows real-time access and configuration of the PBX system.)



- Off-Line Mode (Configuration is done Off-Line and applied to the PBX at a later date.)



Available 2012

1-3. User Accounts

Account Levels

The WebMC supports 3 different account types (Access Levels). The number of users who can simultaneously login to the system are shown below.

Account Levels

Level	For	Description
Installer	Dealers and system installers	For all system programming settings. "Installer" can specify which system programming settings are available for "Administrator" (the accessible settings for "User" are pre-defined and fixed).
User (Administrator)	On-site system managers	For general maintenance of users and user settings, such as backing up the system data, confirming extension information, etc.
User (User)	End users	For changing user's extension settings, such as changing profiles, storing personal speed dial numbers, etc.

Number of Accounts

Level	Single Unit	One-look	Simultaneous Login
Installer	1	1	1
User (Administrator)	0-16	0-16* ¹	32
User (User)	0-16	0-1512* ¹	


***1 The total number of administrator and user accounts combined cannot exceed 1512.**

Chapter 2

CONNECTIONS

2-1. System Requirements

System Requirements

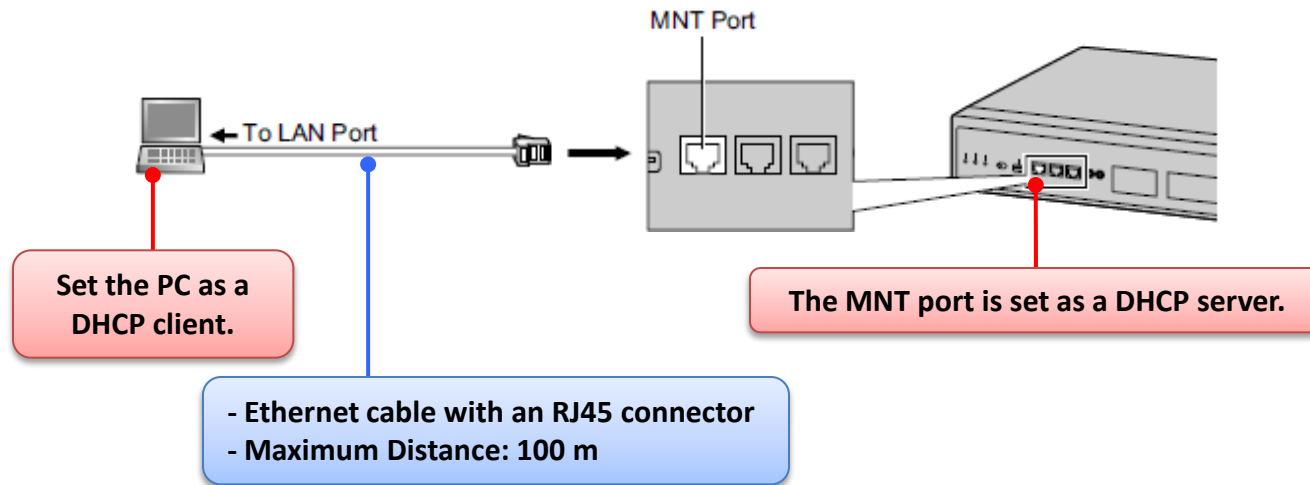
	Requirements	Descriptions
OS	<ul style="list-style-type: none">- Windows XP- Windows Vista Business- Windows 7 Professional	<p>Both 32bit and 64bit version is available.</p> 
HDD	100MB of available hard disk space	Minimum Requirements
Display	<ul style="list-style-type: none">-Screen resolution: XGA (1024 * 768)-DPI setting: Normal size (96 DPI)	Recommended Settings
Browsers	<ul style="list-style-type: none">- Windows Internet Explorer 8 or 9- Mozilla Firefox version 5.0 or later	Make sure you are using the latest version of the above Web browser software. For details, refer to the Web browser's documentation.
Browser Settings	<ul style="list-style-type: none">- Cookies- Java Script- The ability to download files- The display of animations- The display of images	<p>These functions must be enabled in the Web browser's settings to use Web Maintenance Console.</p> <p>For details, refer to your Web browser's documentation.</p>

2-2. Available Connections (1/3)

In order to program or manage the PBX, you need to connect your PC to the PBX.

Several connection methods are provided, and here you can see the outline of the direct connection.

1. Direct Connection (MNT Port)

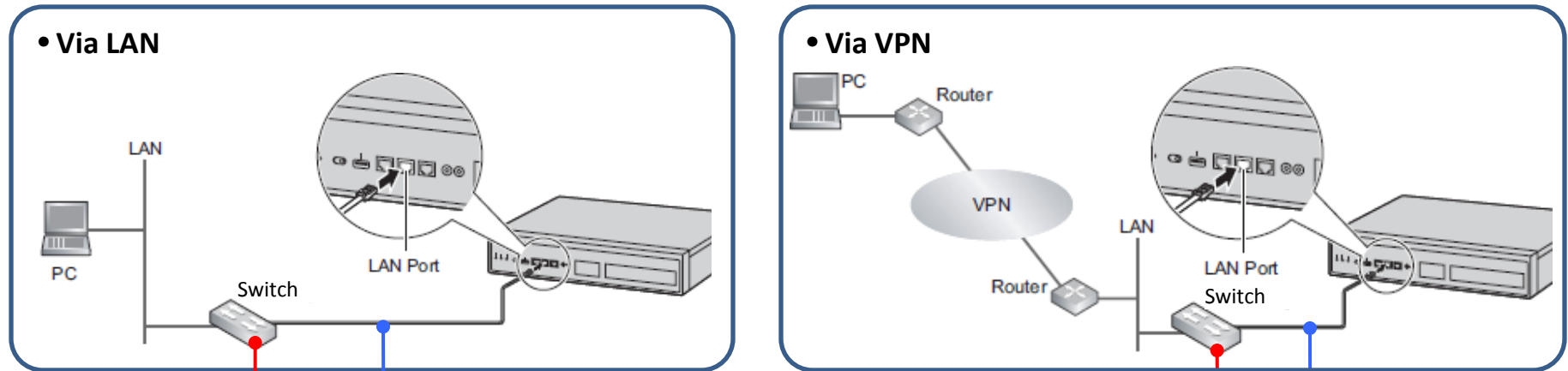


If the PC has "Gigabit Ethernet interface", an Ethernet "crossover cable may be needed. It depends on the specification of the PC.

2-2. Available Connections (2/3)

It is also possible to manage the PBX via a LAN or VPN connection.

2. LAN/VPN Connection (LAN Port)



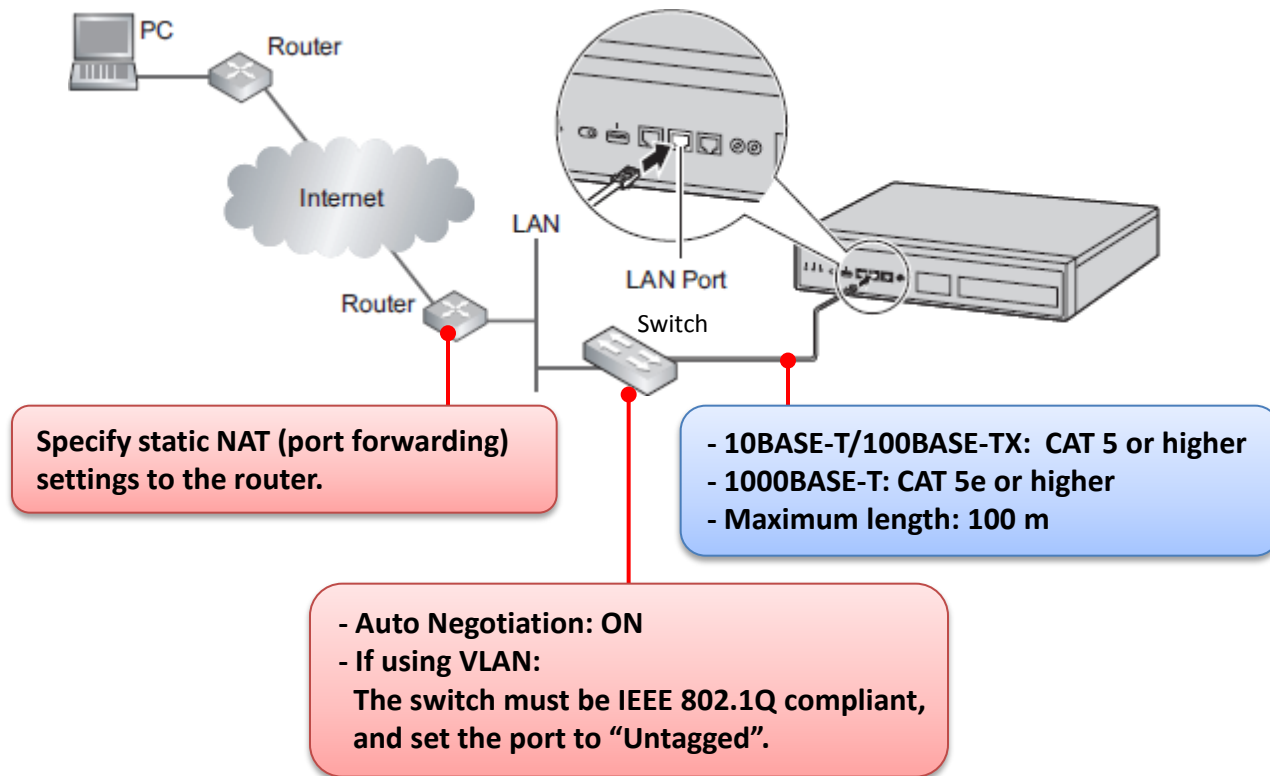
- 10BASE-T/100BASE-TX: CAT 5 or higher
- 1000BASE-T: CAT 5e or higher
- Maximum length: 100 m

- Auto Negotiation: ON
- If using VLAN:
The switch must be IEEE 802.1Q compliant, and set the port to "Untagged".

2-2. Available Connections (3/3)

Using the WebMC and suitable network routing, it is possible to access the PBX system via the Internet. Ensure that appropriate security measures are in-place before attempting this. (Firewall etc)

3. Connection via Internet



The WAN port on the KX-NS1000 is not supported with ver. 1.0.

2-3. Accessing the Web MC

There are different addresses depending on Connection Types:

1. When Connecting via MNT Port

<http://kx-ns1000>. (or <http://223.0.0.1>)

Be sure to include the period (.) at the end as shown.

“223.0.0.1”: the default IP address of the MNT port = Fixed

2. When Connecting via LAN or VPN

<http://192.168.0.101/WebMC>

“192.168.0.101”: the default IP address of the LAN port = Variable

3. When Connecting via Internet (SSL Connection)

<https://xxx.xxx.xxx.xxx/yyy>

“xxx.xxx.xxx.xxx” will be an IP address, and “yyy” will be a port numbers that can be accessed from the internet, for example the IP address and port number of a router.

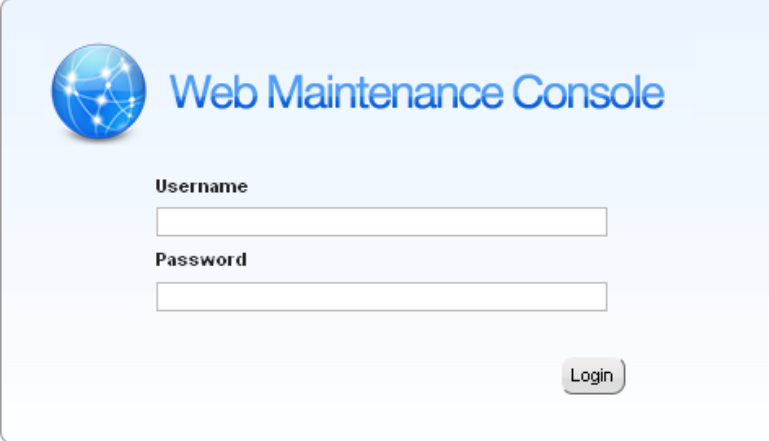
Port forwarding settings must specify the IP address and the port number of the network router ("xxx.xxx.xxx.xxx:yyy") to transfer the packets to the PBX in the LAN, so that the packets sent to the global IP address and specified port of the router will be transferred to the IP address and specified

The URL is case-sensitive. Enter the uppercase and lowercase letters exactly as shown above.

2-4. LOGIN / LOGOUT (1)

LOGIN

After establishing a connection to Web Maintenance Console, the login window is displayed, and a login name and password must be entered.



The screenshot shows a login window for the Web Maintenance Console. It features a blue globe icon on the left and the text 'Web Maintenance Console' in blue on the right. Below the text are two white input fields: one for 'Username' and one for 'Password'. A grey 'Login' button is located at the bottom right of the window.

Login Restrictions

- Up to 33 users may log in at one time to Web Maintenance Console. However, only 1 user may change PBX system settings at a time. (1 Installer / 32 Admin/Users)
If a User is making changes, and the Installer logs in, the Installer may override the user's ability to make changes so that programming can be performed.
Users that are logged in to Web Maintenance Console, but do not have the ability to make changes, may only view menus and setting items they would normally be able to edit.
- If a user fails to log in three times (wrong password), the failure is recorded in the error log of the PBX and the user cannot log in again for 5min.

2-4. LOGIN / LOGOUT (2)

LOGOUT

Be sure to log out from the Web MC using the Logout button, otherwise any unsaved changes will be lost.



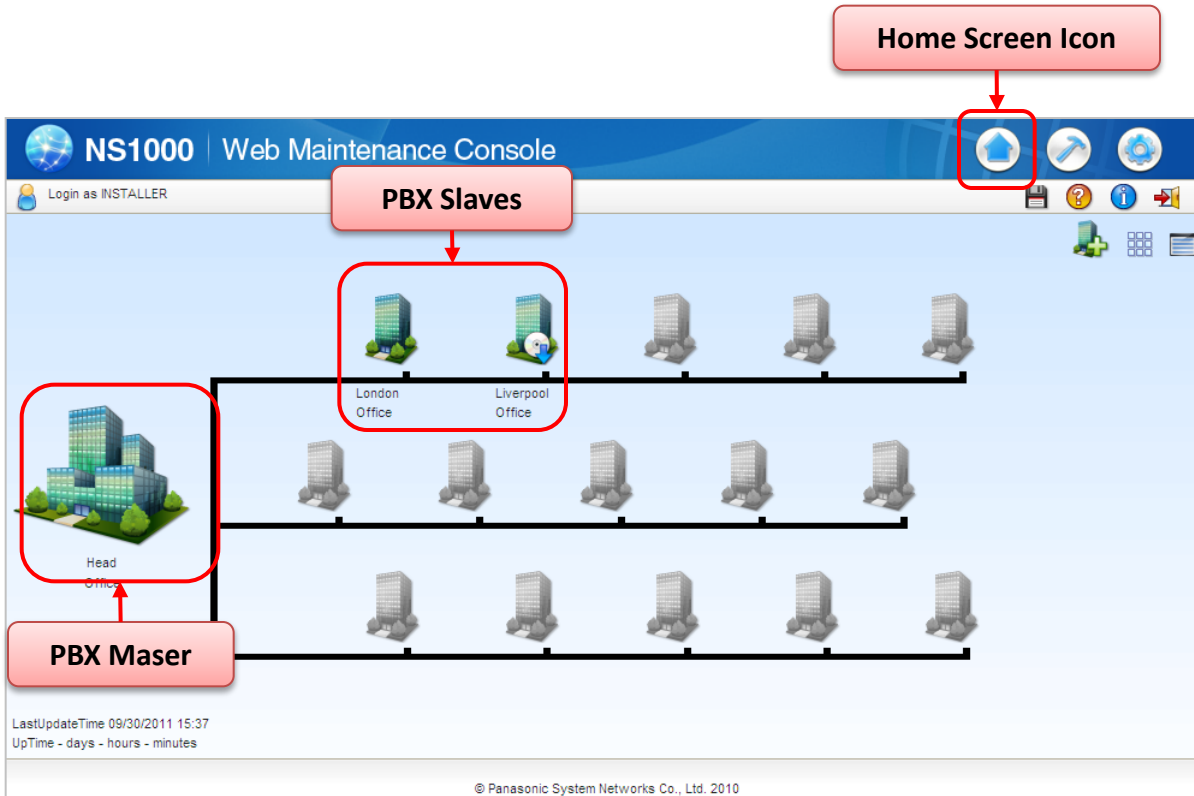
Clicking this button will save any programming changes to the PBX's Storage Memory Card and log you out of Web Maintenance Console.

Chapter 3

WEBMC - TOUR

3-1. Screen Descriptions (1/4)

Upon LOGIN, you are presented with the 'Home' Screen



Loads the Home screen.



Displays the Maintenance screen.



Displays the Setup screen.



Saves the data.



Opens the on-line help.



Displays the Web MC version info.



Saves the data and logs you out.



Adds slave units.



Displays the Home screen in icon view.



Displays the Home screen in list view.

3-1. Screen Descriptions (2/4)

Using the 'List' view in the 'Home' Screen allows you to see the PBX Type (Master/Slave), IP-Address, MAC address, S/W Version and Region type of all PBXs in a One-Look system.

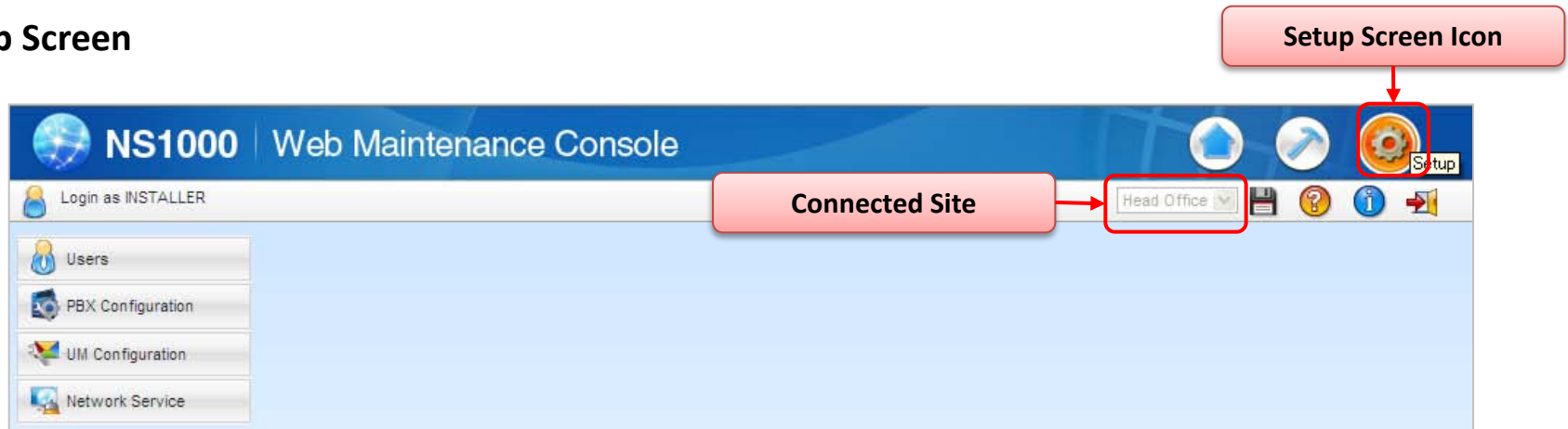
The screenshot displays the NS1000 Web Maintenance Console interface. At the top, it shows the title 'NS1000 Web Maintenance Console' and a login prompt 'Login as INSTALLER'. A 'List View' callout points to a list view icon in the top right. Below this is a 'PBX Status' section with a legend: a green circle for 'INS', a yellow circle for 'OUS', a blue circle for 'Pre-INS', a purple circle for 'Idle', and a red circle for 'Fault'. Below the status section are three tabs: 'Registration', 'De-registration', and 'Forced De-registration'. The main area contains a table with the following data:

Site ID	Site Name	Location(MIB)	Status	PBX Mode	IP Address	MAC Address	PBX Version	PBX Region
1	NS1000		INS	master	192.168.0.101	00:80:F0:06:0C:8E	201.00225	BX

A callout 'PBX System Information is shown here.' points to the table. At the bottom, there are 'OK', 'Cancel', and 'Apply' buttons, and a copyright notice: '© Panasonic System Networks Co., Ltd. 2011'.

3-1. Screen Descriptions (3/4)

Setup Screen

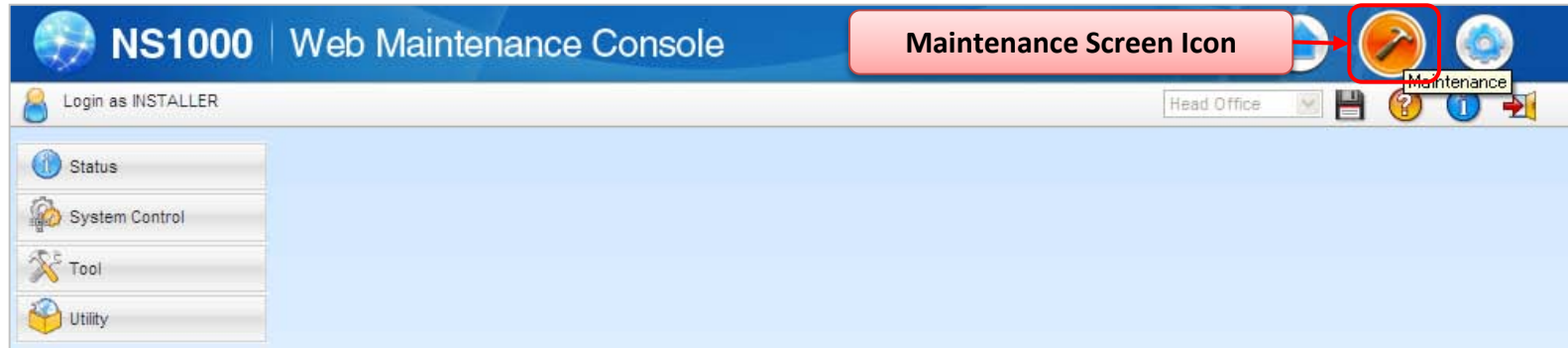


Setup Screen Tree Items

Item	Primary Functions
Users	<ul style="list-style-type: none">• Manage, view, and add PBX user profiles and account information
PBX Configuration	<ul style="list-style-type: none">• Configure PBX hardware settings for cards, equipment, and networking• Configure network-wide programming such as BGM and Class of Service• Configure dialing features, call routing, and incoming call settings• Configure call logging (SMDR) and other PBX maintenance items
UM Configuration	<ul style="list-style-type: none">• Configure Unified Messaging mailboxes and voice mail subscriber settings• Configure service settings and system parameters• Configure hardware options
Network Services	<ul style="list-style-type: none">• Configure server and client features for the PBX• Configure connections settings and network security

3-1. Screen Descriptions (4/4)

Maintenance Screen

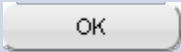
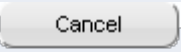
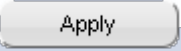


Maintenance Screen Tree Items

Item	Primary Functions
Status	<ul style="list-style-type: none">• Check the status of the PBX's system hardware• Check the status of PBX equipment (PSs, CSs, UPS, etc.)• Check the status of extensions used by the Unified Messaging system
System Control	<ul style="list-style-type: none">• Download and update PBX software files• Manage music on hold (MOH) data• Reset or shutdown the system
Tool	<ul style="list-style-type: none">• Backup system data to a USB memory device• View a list of PBX extensions• Import and export PBX settings and user information• Backup or restore Unified Messaging data
Utility	<ul style="list-style-type: none">• Perform tests for PBX cards and network connections• Transfer files between the PBX and a connected PC• View reports, error logs, event logs, and program update logs• Monitor and trace PBX communications and protocols• Manage activation keys and license information

3-2. Button Descriptions (1/2)

Standard Buttons

	Temporarily saves changes to DRAM and closes the current screen.
	Abandons changes and returns to the previous screen.
	Temporarily saves changes to DRAM and remains on the same screen.



To save setting while programming, click this button on the Home screen.



When this button is clicked to logout of Web Maintenance Console, system data is automatically backed up from the PBX to the Storage Memory Card.

NB: Be sure to SAVE your programming frequently

3-2. Button Descriptions (2/2)

Each Setting screen has a number of helpful icons available. The available icons will differ, depending on the screen.

Standard Icons

The screenshot displays the NS1000 Web Maintenance Console interface. The main content area shows a table titled "User Profiles" with columns for "No.", "First Name", "Last Name", "User Group", and "Ext No.". The table contains two rows: one for "Installer" and one for "David Johnson". A red box highlights a set of standard icons at the bottom of the table, which are described as follows:

- Remove filter**: Represented by a circular arrow icon.
- Adds new entry**: Represented by a plus sign icon.
- Edits the selected row**: Represented by a pencil icon.
- Deletes the selected row**: Represented by a trash can icon.
- Copies Data Fields**: Represented by a document icon with a plus sign.

No.	First Name	Last Name	User Group	Ext No.
1	Installer		ALL	
2	David	Johnson	1	101

3-3. Slot View

In the 'Settings' View, the 'SLOT' view shows what Physical and Virtual cards are installed. May other system properties or features can also be viewed.

'Settings' -> PBX Configuration -> 1. Slot

Maintenance Console

Slot

Select 'Physical' or 'Virtual' Slot View

Virtual

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

Status Buttons

Combination Card

- SLC2 + LCOT2
- SLC2 + BRI4
- SLC2 + PRI23
- SLC2 + PRI30

Option Card

- DOORPHONE

KX-NS 1000

DOORPHONE SLC2 PRI23

1 2

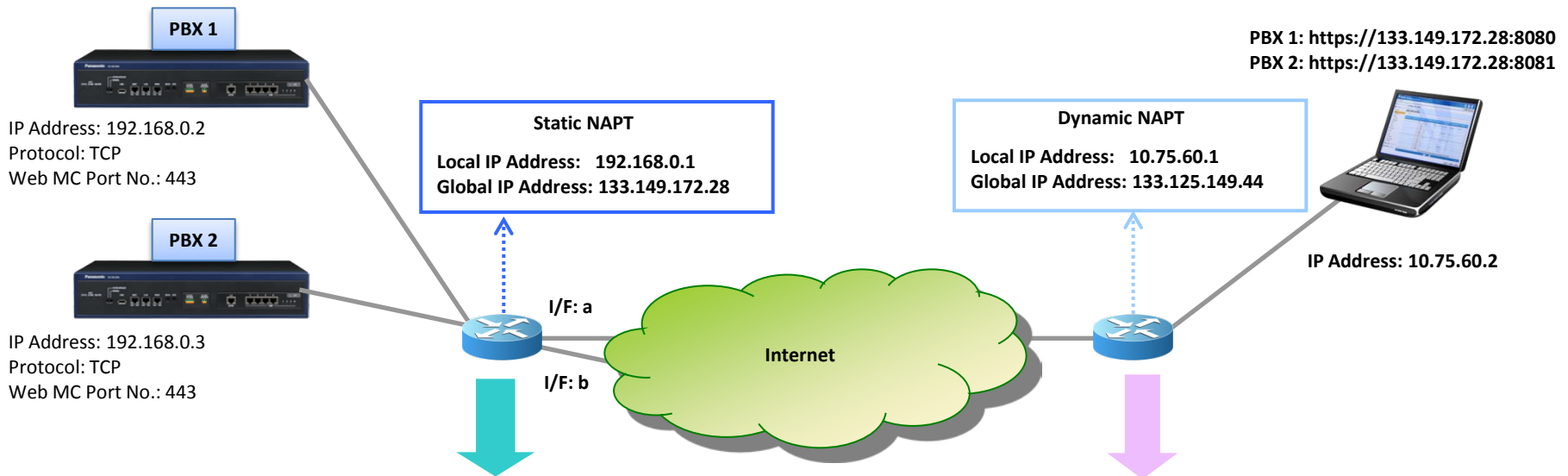
Installed 'Physical' Cards

Chapter 4

APPENDIX

A-1 Static NAT Setting Example

	Setting Items	Descriptions
1	Interface	WAN-side interface
2	Protocol	TCP or UDP
3	Receiving Port No. (WAN side)	Outside network port number (1 ~ 65535)
4	IP Address of Transfer Destination (LAN Side)	The destination IP address to which the packets are transferred.
5	Port No. of Transfer Destination (LAN Side)	The port number of (1 ~ 65535)



Setting Items	For PBX 1	For PBX 2
Interface	a	b
Protocol	TCP	TCP
Receiving Port No. (WAN Side)	8080	8081
IP Address of Transfer Destination	192.168.0.2	192.168.0.3
Port No. of Transfer Destination	443	443

WEBMC COMPLETE

Section - 3

TERMINAL REGISTRATION



Introduction

The NS1000 supports 3 methods of IP terminal registration.

1. Full Automatic Mode

When an IP terminal is connected to the network, the IP terminal will automatically discover the main unit and an unallocated extension number will automatically assigned to the IP Terminal.

2. Extension Input Mode

When an IP terminal is connected to the network, the IP terminal will automatically discover the main unit and the user will be asked to input an extension number.

3. Manual Mode

Same operation as TDE/NCP.

Supported Modes – by terminal type.

	1. Full Automatic Mode	2. Extension Input Mode	3. Manual Mode
UT series	Yes	No	Yes
NT3xx / NT265	Yes	Yes	Yes
NT700	No	No	Yes
General SIP Phone	No	No	Yes*

(*) Only input the Password

NB: DHCP Server is required for Full/Extension Input Modes

Contents

Chapter 1 UT/NT Series Registration

- 1-0. NS1000 – DCHP Server Setting
- 1-1. Full Automatic Mode – Overview
- 1-2. PBX System Configuration

Chapter 2 NT Series Registration

- 2-1. Extension Number Mode – Overview
- 2-2. PBX System Configuration

Chapter 3 UT Series Registration

- 3-1. Manual Registration Mode – Overview
- 3-2. Manual Registration (UT)
- 3-3. PBX Configuration (UT)
- 3-4. Registration Confirmation (UT)

Chapter 4 NT Series Registration

- 4-1. Manual Registration (NT)
- 4-2. PBX Configuration (NT)
- 4-3. Registration Confirmation (NT)

Contents

Chapter 5 DECT CS Installation

5-0. DECT CS Installation

Chapter 6 Registration – Other Terminals

6-0. Registration

6-1. De-registration

Chapter 1

UT/NT SERIES REGISTRATION FULL AUTOMATIC MODE

1-0. NS1000 – DHCP Server setting

The NS1000 can be configured as a DHCP Server.

Where a 3rd party networked DHCP Server is not available, the NS1000 can be configured to provide DHCP Services.

1. Select 'Settings' View

2. Select 'Network Service' -> 1. DHCP

3. Enable the NS1000 DHCP Server

4. Set the DHCP Pool range and lease interval.

The screenshot shows the NS1000 Web Maintenance Console. The top bar displays 'NS1000 Web Maintenance Console'. The left sidebar contains a 'Network Service' menu with options: 1. IP Address/Ports, 2. Server Feature, 1. DHCP (highlighted), 3. FTP, 4. SSH, 5. HTTP, 6. NTP, 7. SMTP, 8. IMAF4, 3. Client Feature, and 4. Other. The main content area is titled 'DHCP' and has three tabs: 'DHCP Server' (selected), 'IP Address Static Assignment', and 'IP Address Assignment List'. The 'DHCP Server' tab shows the following configuration:

- DHCP server**: Enable, Port number: 67
- IP address auto assignment**: Starting IP address: 192.168.0.100, Ending IP address: 192.168.0.150, Lease interval (h): 24
- Auto assignment exclusions**: A table with columns for IP address and IP address.

At the bottom right, there are buttons for 'OK', 'Cancel', and 'Apply'.

NB: Be sure to 'Apply' and 'Save' the changes before proceeding.

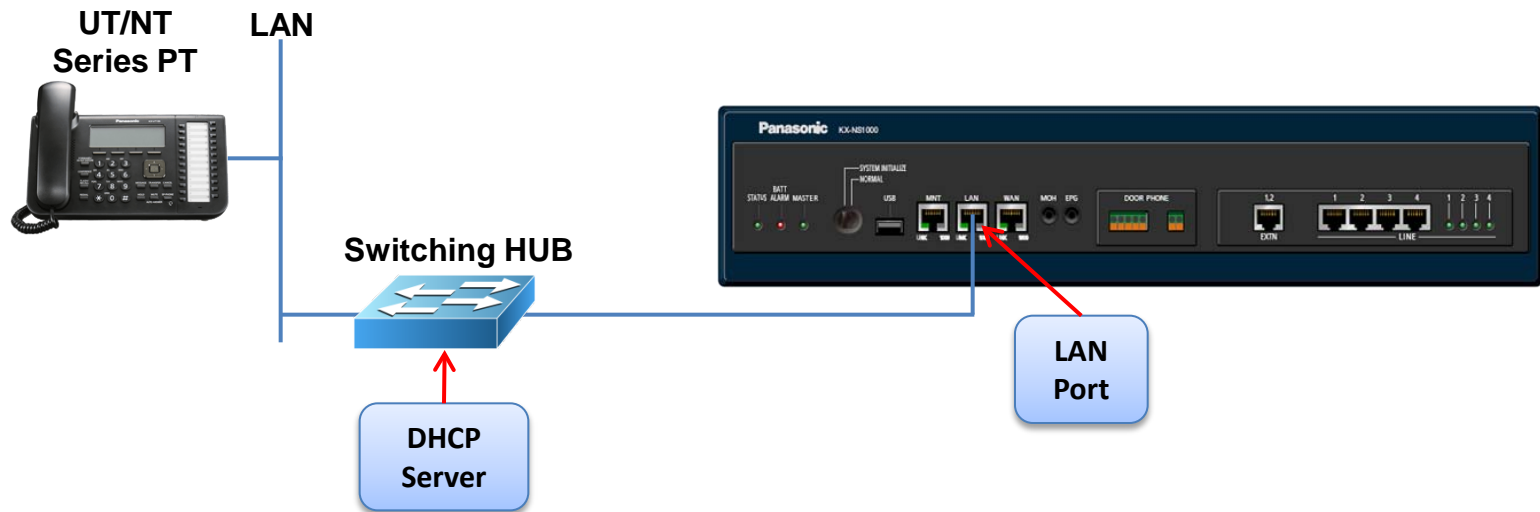
1.1 'Full Automatic' Registration Mode

Full Automatic Mode – Overview

When UT/NT PTs are connected to the NS1000 on the same network – Full Automatic Registration of the Terminals is possible. No manual setting of the PTs or PBX is required.

Requirements;

1. DHCP Server (NS1000 or External DHCP Server)
2. V-IPEXT32 or V-UTEXT32 Card is installed in the NS1000
3. Sufficient IP-PT A/Ks are installed.



1.2 PBX System Configuration (1)

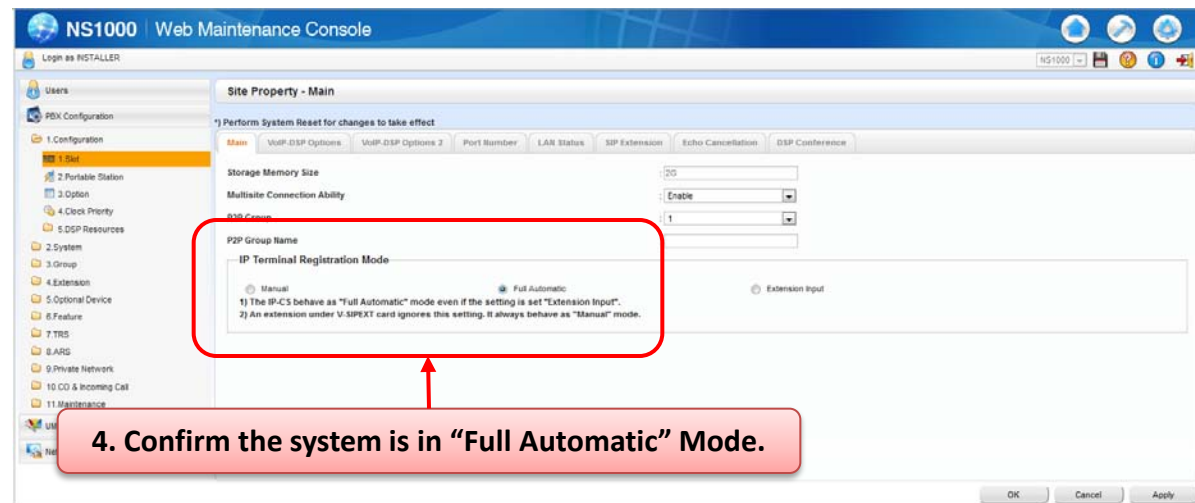
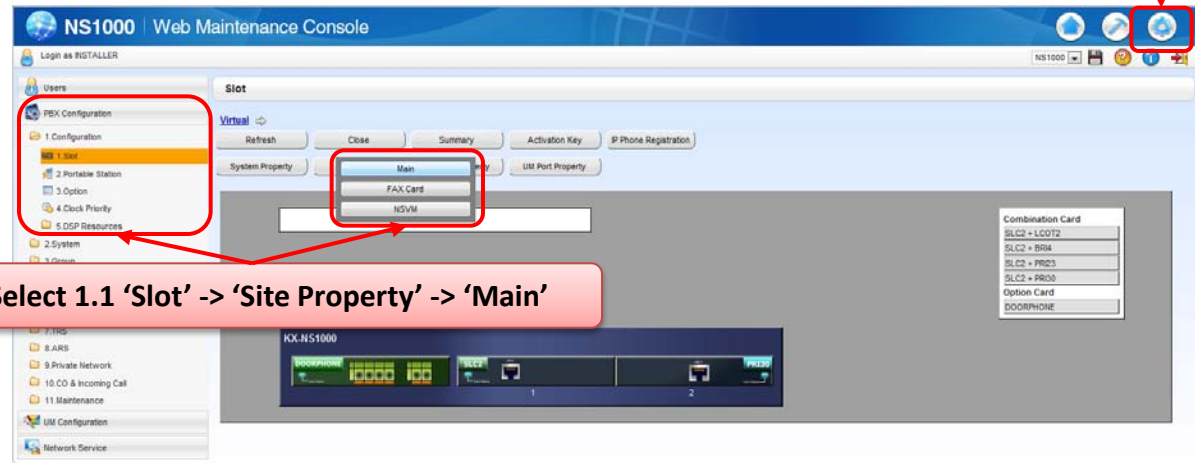
Confirm the IP Terminal Registration Mode

1. Login to the Web-MC

2. Select 'Setup'

3. Select 1.1 'Slot' -> 'Site Property' -> 'Main'

4. Confirm the system is in "Full Automatic" Mode.



1.2 PBX System Configuration (2)

Install a Virtual Extension card (V-IPEXT32 or V-UTEXT32) - 1

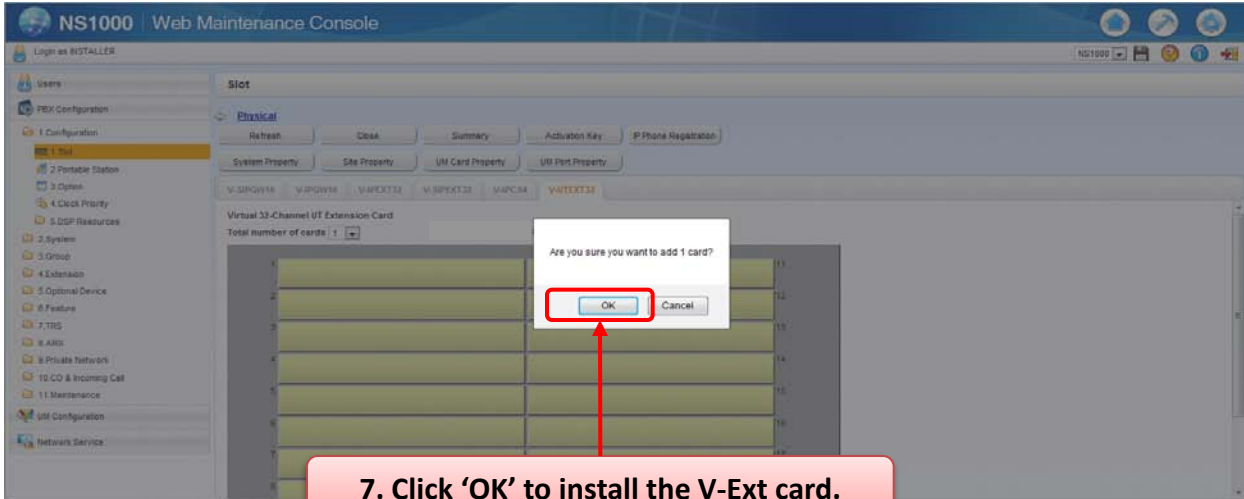
The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a tree view under 'PBX Configuration' with '1. Slot' selected. A red box highlights the 'Virtual' radio button in the 'Slot' configuration area. A red callout box with the text '5. Select 1.1 'Slot' -> 'Virtual'' points to the 'Virtual' button. The main area displays a rack diagram with two slots, each containing a 'DOORPHONE' card. A 'Combination Card' list is visible on the right, including options like 'SLC2 + LCOT2', 'SLC2 + BR4', 'SLC2 + PRI23', 'SLC2 + PRI30', 'Option Card', and 'DOORPHONE'.

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar is the same as in the previous image. The 'Slot' configuration page now shows the 'Physical' radio button selected. A red box highlights the 'V-UTEXT32' option in the 'UM Card Property' section. A red callout box with the text '6. Install the V-Ext Card' points to a table below. The table is titled 'Virtual 32-Channel UT Extension Card' and has a 'Total number of cards' dropdown set to 0. The table has 18 rows and 11 columns. A red arrow points to the first row of the table.

Virtual 32-Channel UT Extension Card										
Total number of cards: 0										
1	2	3	4	5	6	7	8	9	10	11
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38	39	40	41	42	43	44
45	46	47	48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63	64	65	66
67	68	69	70	71	72	73	74	75	76	77
78	79	80	81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120	121
122	123	124	125	126	127	128	129	130	131	132
133	134	135	136	137	138	139	140	141	142	143
144	145	146	147	148	149	150	151	152	153	154
155	156	157	158	159	160	161	162	163	164	165
166	167	168	169	170	171	172	173	174	175	176
177	178	179	180	181	182	183	184	185	186	187
188	189	190	191	192	193	194	195	196	197	198
199	200	201	202	203	204	205	206	207	208	209
210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231
232	233	234	235	236	237	238	239	240	241	242
243	244	245	246	247	248	249	250	251	252	253
254	255	256	257	258	259	260	261	262	263	264
265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286
287	288	289	290	291	292	293	294	295	296	297
298	299	300	301	302	303	304	305	306	307	308
309	310	311	312	313	314	315	316	317	318	319
320	321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340	341
342	343	344	345	346	347	348	349	350	351	352
353	354	355	356	357	358	359	360	361	362	363
364	365	366	367	368	369	370	371	372	373	374
375	376	377	378	379	380	381	382	383	384	385
386	387	388	389	390	391	392	393	394	395	396
397	398	399	400	401	402	403	404	405	406	407
408	409	410	411	412	413	414	415	416	417	418
419	420	421	422	423	424	425	426	427	428	429
430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451
452	453	454	455	456	457	458	459	460	461	462
463	464	465	466	467	468	469	470	471	472	473
474	475	476	477	478	479	480	481	482	483	484
485	486	487	488	489	490	491	492	493	494	495
496	497	498	499	500	501	502	503	504	505	506
507	508	509	510	511	512	513	514	515	516	517
518	519	520	521	522	523	524	525	526	527	528
529	530	531	532	533	534	535	536	537	538	539
540	541	542	543	544	545	546	547	548	549	550
551	552	553	554	555	556	557	558	559	560	561
562	563	564	565	566	567	568	569	570	571	572
573	574	575	576	577	578	579	580	581	582	583
584	585	586	587	588	589	590	591	592	593	594
595	596	597	598	599	600	601	602	603	604	605
606	607	608	609	610	611	612	613	614	615	616
617	618	619	620	621	622	623	624	625	626	627
628	629	630	631	632	633	634	635	636	637	638
639	640	641	642	643	644	645	646	647	648	649
650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671
672	673	674	675	676	677	678	679	680	681	682
683	684	685	686	687	688	689	690	691	692	693
694	695	696	697	698	699	700	701	702	703	704
705	706	707	708	709	710	711	712	713	714	715
716	717	718	719	720	721	722	723	724	725	726
727	728	729	730	731	732	733	734	735	736	737
738	739	740	741	742	743	744	745	746	747	748
749	750	751	752	753	754	755	756	757	758	759
760	761	762	763	764	765	766	767	768	769	770
771	772	773	774	775	776	777	778	779	780	781
782	783	784	785	786	787	788	789	790	791	792
793	794	795	796	797	798	799	800	801	802	803
804	805	806	807	808	809	810	811	812	813	814
815	816	817	818	819	820	821	822	823	824	825
826	827	828	829	830	831	832	833	834	835	836
837	838	839	840	841	842	843	844	845	846	847
848	849	850	851	852	853	854	855	856	857	858
859	860	861	862	863	864	865	866	867	868	869
870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891
892	893	894	895	896	897	898	899	900	901	902
903	904	905	906	907	908	909	910	911	912	913
914	915	916	917	918	919	920	921	922	923	924
925	926	927	928	929	930	931	932	933	934	935
936	937	938	939	940	941	942	943	944	945	946
947	948	949	950	951	952	953	954	955	956	957
958	959	960	961	962	963	964	965	966	967	968
969	970	971	972	973	974	975	976	977	978	979
980	981	982	983	984	985	986	987	988	989	990
991	992	993	994	995	996	997	998	999	1000	1001
1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012
1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023
1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034
1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045
1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056
1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067
1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078
1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089
1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100
1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111
1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122
1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133
1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144
1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155
1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166
1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177
1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188
1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199
1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210
1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221
1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232
1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243
1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254
1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265
1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276
1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287
1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298
1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309
1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320
1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331
1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342
1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353
1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364
1365	1366	1367	1368	1369						

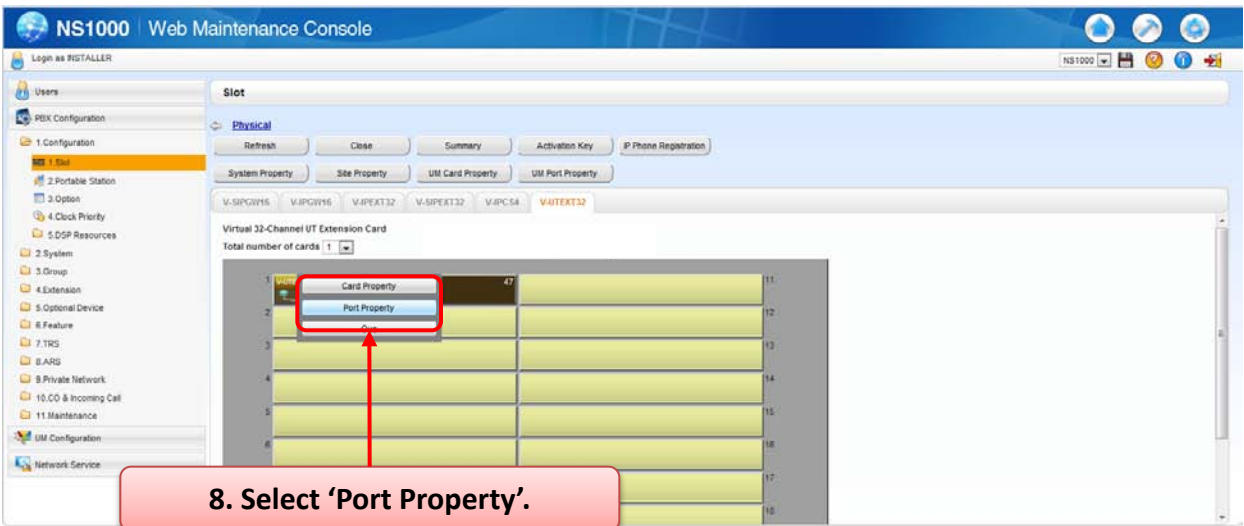
1.2 PBX System Configuration (3)

Install a Virtual Extension card (V-IPEXT32 or V-UTEXT32) - 2



The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a navigation tree with categories like Users, PBX Configuration, and Network Service. The main area is titled 'Slot' and shows a table of virtual extension cards. A dialog box is open in the center, asking 'Are you sure you want to add 1 card?' with 'OK' and 'Cancel' buttons. A red arrow points from the 'OK' button to a red callout box below the dialog.

7. Click 'OK' to install the V-Ext card.



The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar is the same as in the previous image. The main area shows the 'Slot' configuration page with a table of virtual extension cards. The 'Port Property' tab is selected for the first card, and a red arrow points from a red callout box below to this tab.

8. Select 'Port Property'.

1.2 PBX System Configuration (4)

Confirming the available Extension Numbers.

NS1000 | Web Maintenance Console

Login as INSTALLER

Port Property - Virtual UT Extension

Registration De-Registration Force De-Registration

Main Option

ID	Site	Shelf	Slot	Port	Extension Number	Extension Name	Connection
1	1	Virtual	47	1	203		INS
2	1	Virtual	47	2	204		Fault
3	1	Virtual	47	3	205		Fault
4	1	Virtual	47	4	206		Fault
5	1	Virtual	47	5	207		Fault
6	1	Virtual	47	6	208		Fault
7	1	Virtual	47	7	209		Fault
8	1	Virtual	47	8	210		Fault
9	1	Virtual	47	9	211		Fault
10	1	Virtual	47	10	212		Fault
11	1	Virtual	47	11	213		Fault
12	1	Virtual	47	12	214		Fault
13	1	Virtual	47	13	215		Fault

Page 1 of 2 20 View 1 - 20 of 32

OK Cancel Apply

10. When Registered, the Ext will show as INS

9. The Terminals will begin registering from the first available Ext Number.

Chapter 2

NT SERIES REGISTRATION EXTENSION NUMBER MODE

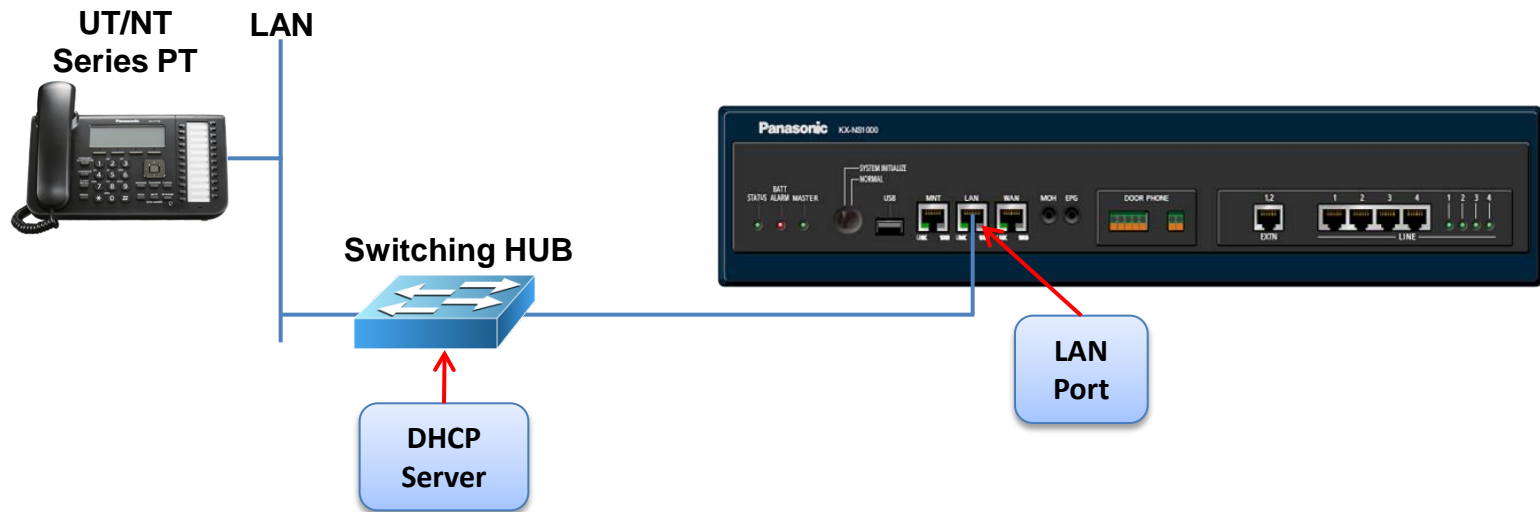
2.1 'Extension Number' Registration Mode

Extension Number Mode – Overview

When NT PTs are connected to the NS1000 on the same network – Registration of the Terminals, inputting only the desired Extension Number is possible. No manual setting of the PTs or PBX is required.

Requirements;

1. DHCP Server (NS1000 or External DHCP Server)
2. V-IPEXT32 Card is installed in the NS1000
3. Sufficient IP-PT A/Ks are installed.



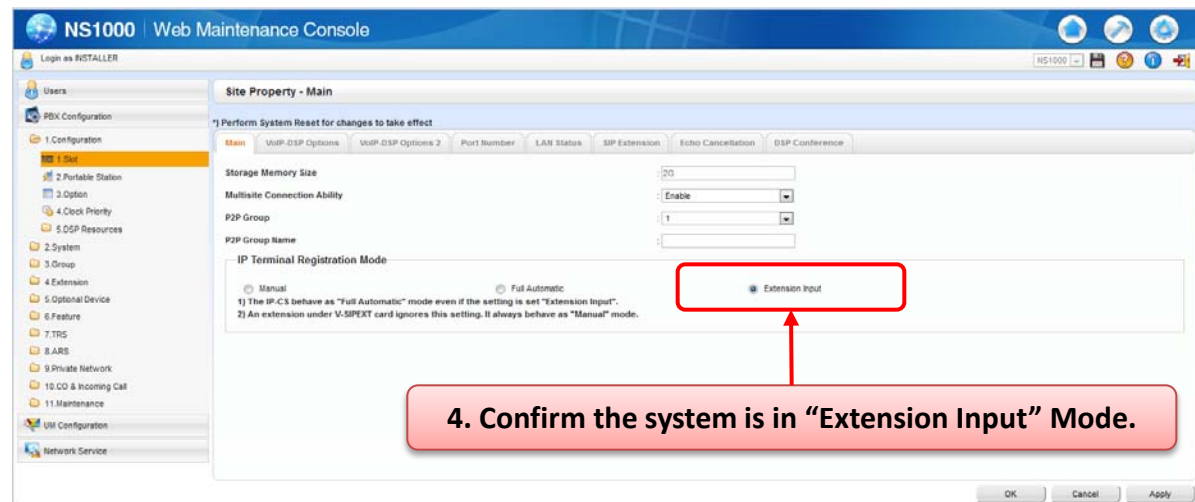
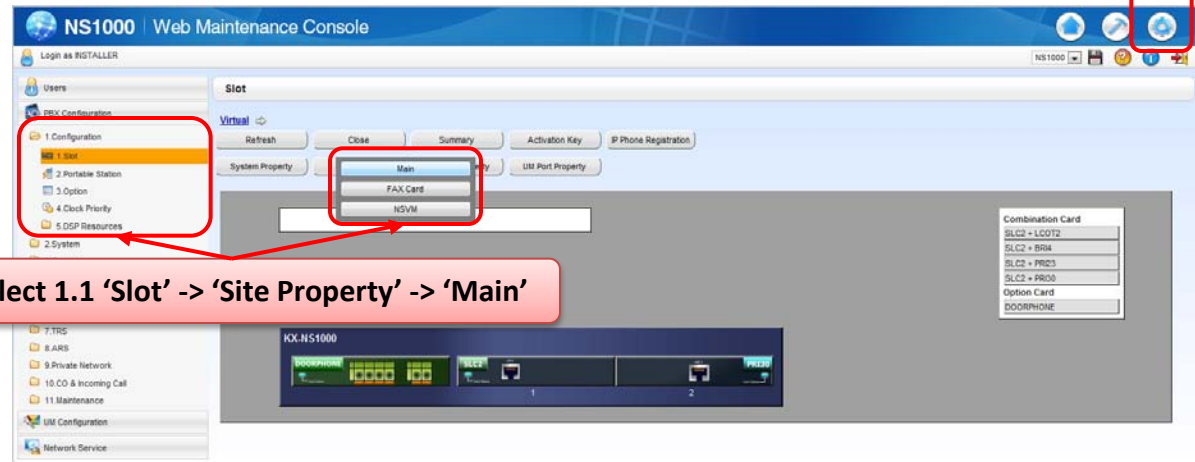
2.2 PBX System Configuration (1)

Confirm the IP Terminal Registration Mode

1. Login to the Web-MC

2. Select 'Setup'

3. Select 1.1 'Slot' -> 'Site Property' -> 'Main'



4. Confirm the system is in "Extension Input" Mode.

2.2 PBX System Configuration (2)

Install a Virtual Extension card (V-IPEXT32) - 1

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a tree view under 'PBX Configuration' with '1. Slot' selected. The main area is titled 'Slot' and has a 'Virtual' tab selected. A red box highlights the 'Virtual' tab and the '1. Slot' item in the sidebar. A red callout box with the text '5. Select 1.1 'Slot' -> 'Virtual'' points to the 'Virtual' tab. The main content area shows a hardware rack diagram with two slots, and a 'Combination Card' list on the right.

NS1000 Web Maintenance Console

Login as INSTALLER

Slot

Virtual

1. Configuration

1. Slot

2. Portable Station

3. Option

4. Clock Priority

5. DSP Resources

2. System

3. Group

4. Extension

5. Optional Device

6. Feature

7. TRS

8. ARS

9. Private Network

10. CO & Incoming Call

11. Maintenance

UM Configuration

Network Service

Refresh Close Summary Activation Key IP Phone Registration

System Property

5. Select 1.1 'Slot' -> 'Virtual'

Combination Card

SLC2 + LCOT2

SLC2 + BR4

SLC2 + PRI23

SLC2 + PRI30

Option Card

DOORPHONE

KX-NS1000

DOORPHONE

SLC2

1

2

PRI30

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar is the same as in the previous screenshot. The main area is titled 'Slot' and has a 'Physical' tab selected. A red box highlights the 'V-IPEXT32' card in the hardware rack diagram. A red callout box with the text '6. Install the V-IPEXT32.' points to the 'V-IPEXT32' card. The main content area shows a hardware rack diagram with three slots, and a 'Virtual 32-Channel VoIP Extension Card' configuration section.

NS1000 Web Maintenance Console

Login as INSTALLER

Slot

Physical

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

V-SIPGW16 V-IPGW16 V-IPEXT32 V-SIPEXT32 V-IPC54 V-UTEXT32

Virtual 32-Channel VoIP Extension Card

Total number of cards 0

0

1

2

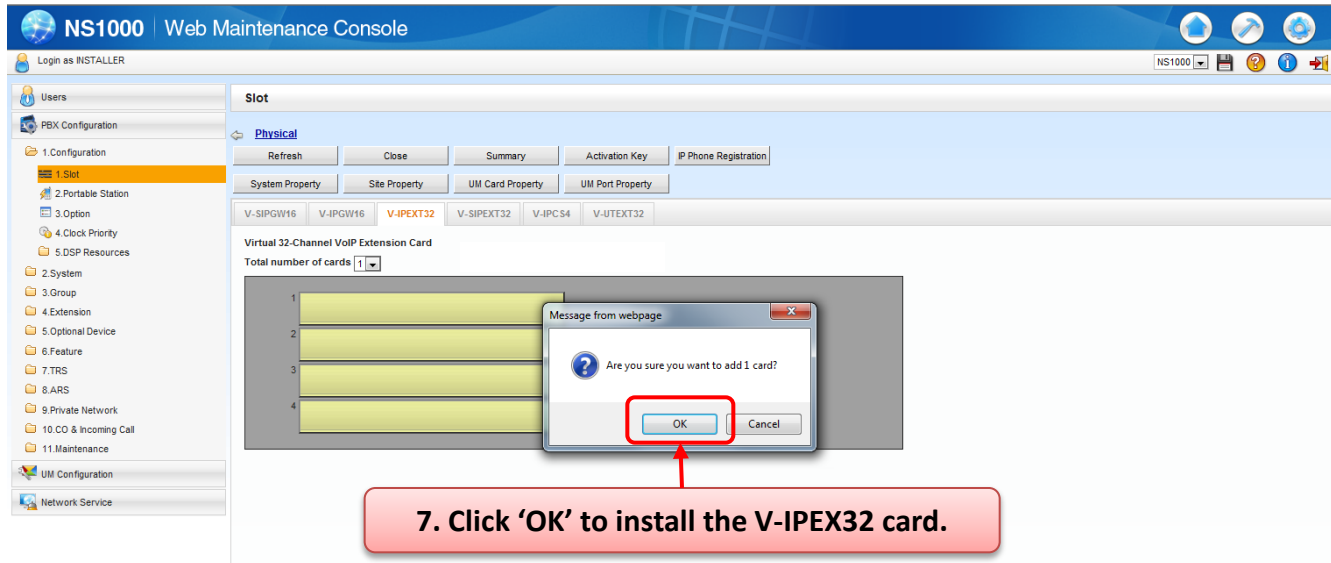
3

4

6. Install the V-IPEXT32.

2.2 PBX System Configuration (3)

Install a Virtual Extension card (V-IPEXT32) - 2



NS1000 Web Maintenance Console

Users

PBX Configuration

1. Configuration

1. Slot

2. Portable Station

3. Option

4. Clock Priority

5. DSP Resources

2. System

3. Group

4. Extension

5. Optional Device

6. Feature

7. TRS

8. ARS

9. Private Network

10. CO & Incoming Call

11. Maintenance

UM Configuration

Network Service

Slot

Physical

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

V-SIPGW16 V-IPGW16 V-IPEXT32 V-SIPEXT32 V-IPC54 V-UTEXT32

Virtual 32-Channel VoIP Extension Card

Total number of cards 1

1

2

3

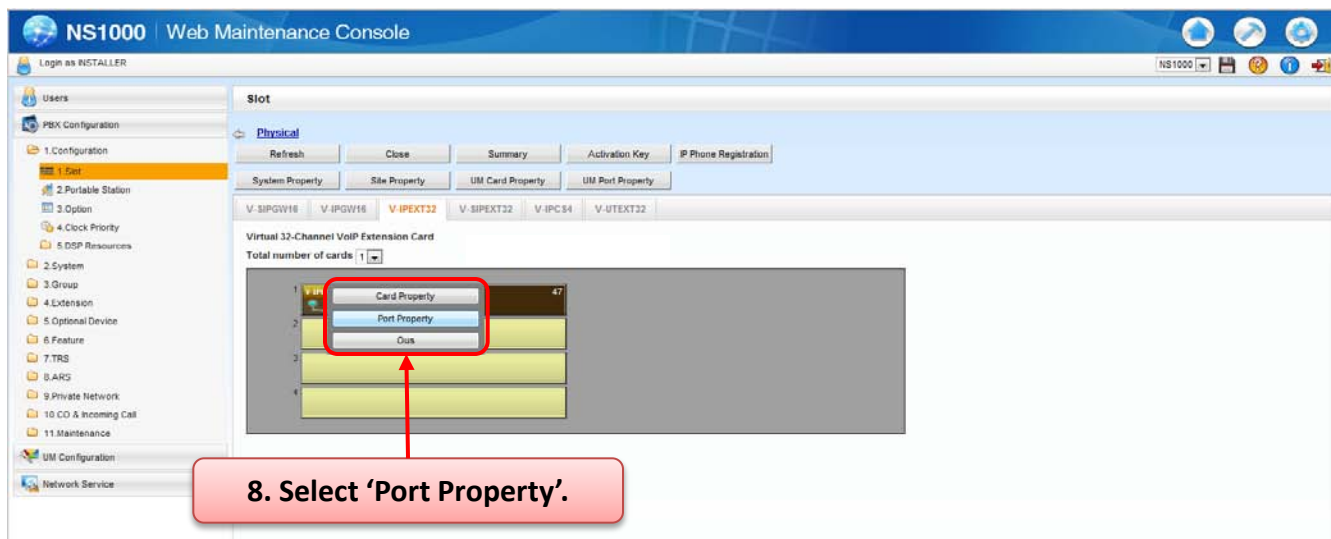
4

Message from webpage

Are you sure you want to add 1 card?

OK Cancel

7. Click 'OK' to install the V-IPEXT32 card.



NS1000 Web Maintenance Console

Users

PBX Configuration

1. Configuration

1. Slot

2. Portable Station

3. Option

4. Clock Priority

5. DSP Resources

2. System

3. Group

4. Extension

5. Optional Device

6. Feature

7. TRS

8. ARS

9. Private Network

10. CO & Incoming Call

11. Maintenance

UM Configuration

Network Service

Slot

Physical

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

V-SIPGW16 V-IPGW16 V-IPEXT32 V-SIPEXT32 V-IPC54 V-UTEXT32

Virtual 32-Channel VoIP Extension Card

Total number of cards 1

1

2

3

4

Card Property

Port Property

Outs

8. Select 'Port Property'.

2.2 PBX System Configuration (4)

Connect the NT Series IP-PT to the network (which includes DHCP Server) and input the desired Ext number via the IP-PT Keypad when prompted.

Note:

- a.) If extension number is set in V-IPEXT32, but has no PT registration, the IP-PT will automatically register to the first available Port/ Ext number (you will not be prompted to enter an Ext number from the PT.)
- b.) If you enter a number which is already used, you will hear an error tone.
- c.) If you do not input an Ext number within 60s, then the IP-PT will register to an available port (No Ext Number). The desired Ext Number can then be set via the WebMC.

9. Enter the desired Ext number and press ENTER

Ext **101**

EXIT CLEAR ENTER

(NT3xx Display)

10. The Terminal will register to the first available port once the desired Ext number is input.

Extension Number	Extension Name (20 characters)	Connection	Status	IP Phone Registration ID (MAC Address)	Current IP Address	Program Ver.	P2P Group
101		INS	Registered	00:00:F0:30:07:AC	192.168.0.150	00.041	1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1

11. When Registered, the Ext will show as INS, MAC address and s/w version etc

Chapter 3

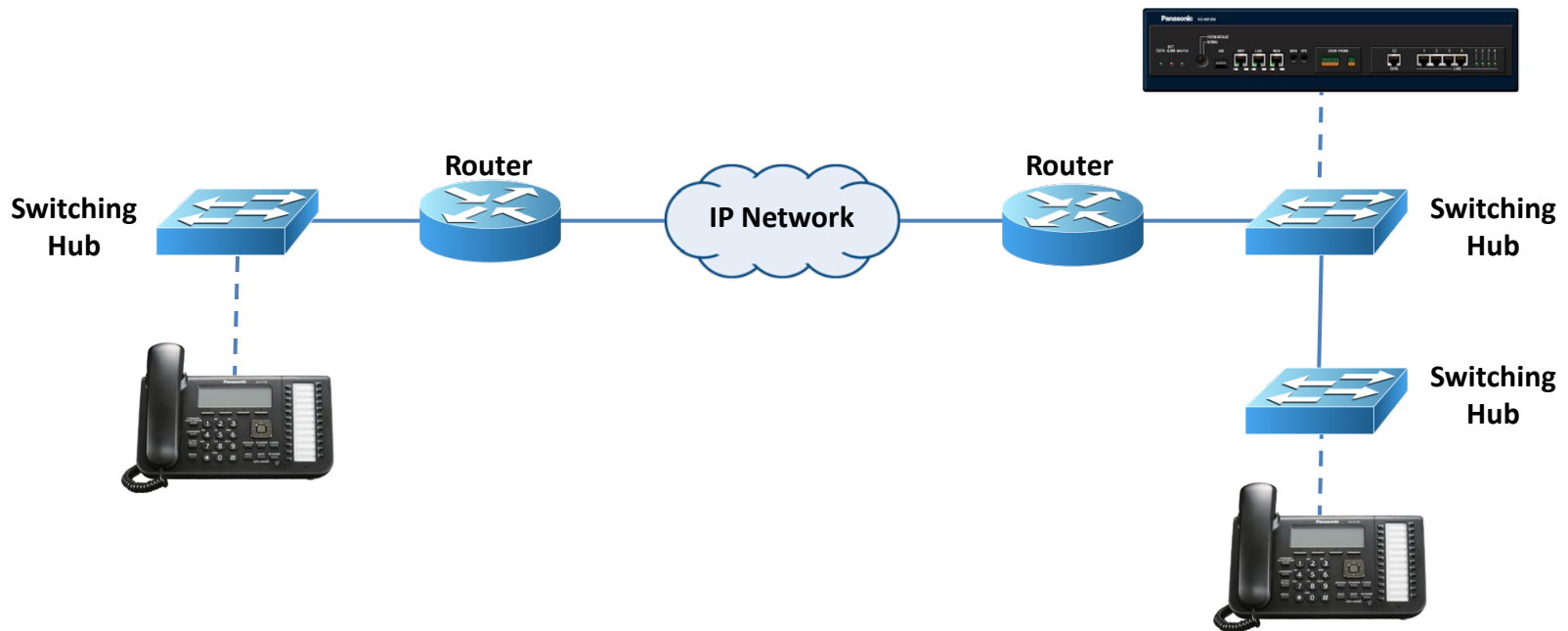
UT SERIES REGISTRATION 'MANUAL' MODE

3.1 Manual Registration Mode

Manual Mode - Overview

When Terminals are connected to an NS1000 which exists on a different network, or a DHCP Server is not available – Registration of the Terminals must be carried out manually by entering the necessary Network/PBX IP Addresses.

IP-CS and 3rd Party SIP Phones must always be registered manually, regardless of their network location.



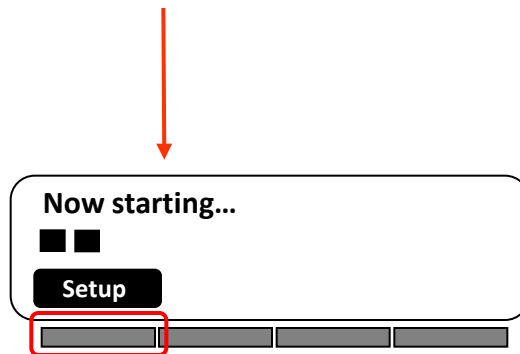
3.2 Manual Registration Mode – UT series

1. Registering an UT-PT to the PBX (Manual Registration Mode)

When registering a UT without a local DHCP server OR when registering the UT from a remote location etc, you will need to enter the IP Address of the UT AND the IP Address of the PBX into the UT manually (Manual Registration Mode).



1. Connect the UT to the network and apply power (PoE or AC Adaptor etc)

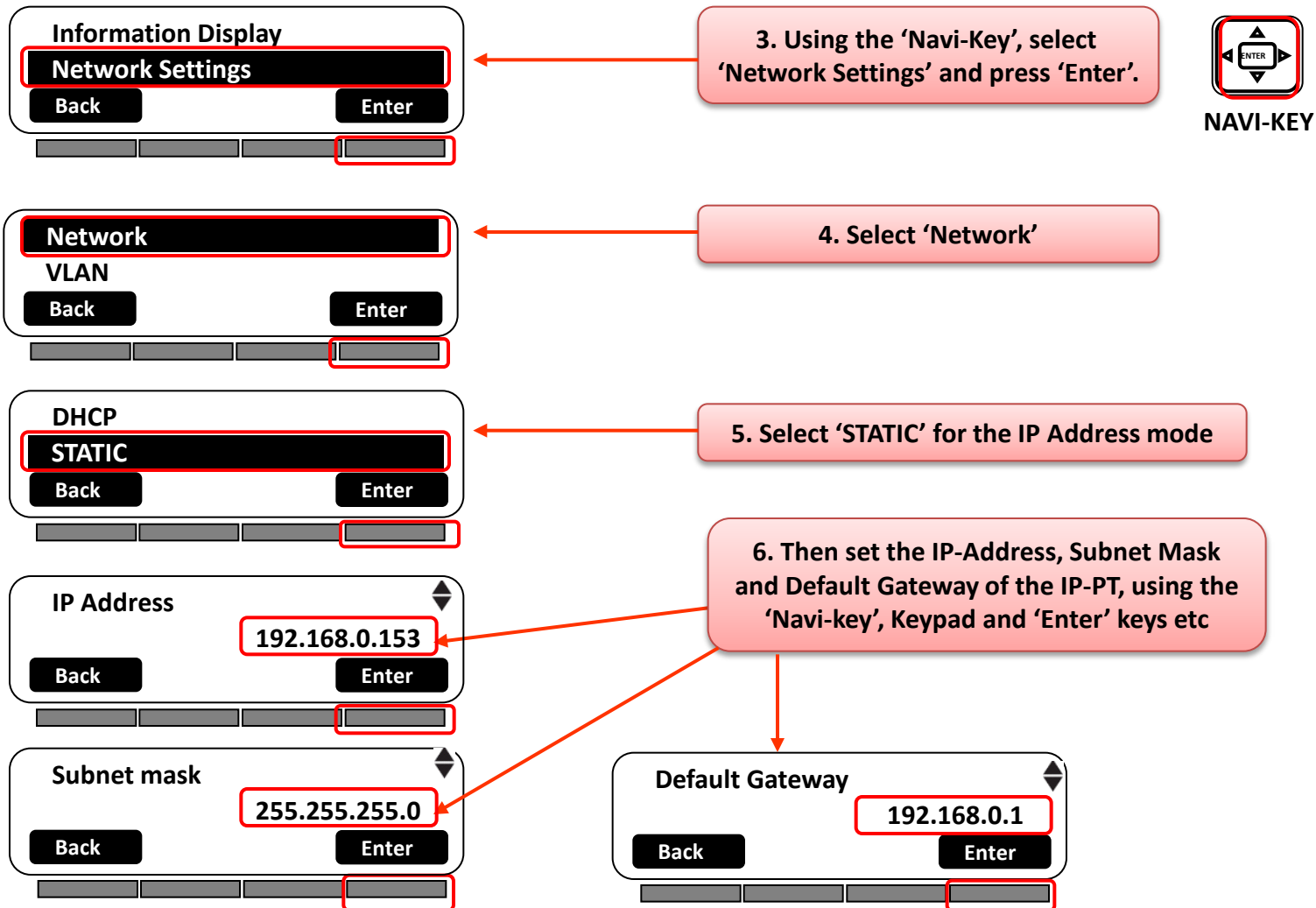


2. When the UT powers on, press the 'SETUP' soft-key below the LCD display

3.2 Manual Registration Mode – UT series

1. Registering an IP-PT to the PBX (Manual Registration Mode) – cont....

(UT-PT IP Address Setting)



3.2 Manual Registration Mode – UT series.

1. Registering an IP-PT to the PBX (Manual Registration Mode) – cont....

(UT-PT IP Address Setting)

Information Display
Network Settings
Back Enter

7. The Network address and MAC information can be confirmed by navigating back to the 'Information Display' screen

The PBX IP-Address (location) will be set automatically during the registration process. The registration process (UT <-> PBX) must be carried out within the same Broadcast domain.

3.3 PBX System Configuration (1)

Confirm the UT Terminal Registration Mode (Manual)

1. Login to the Web-MC

2. Select 'Setup'

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a tree view with '1. Configuration' selected. Under '1. Configuration', '1. Slot' is highlighted. A red box highlights the 'Main' option in the 'Slot' configuration area. A red arrow points from the 'Main' option to a callout box.

3. Select 1.1 'Slot' -> 'Site Property' -> 'Main'

The screenshot shows the 'Site Property - Main' configuration page. The 'IP Terminal Registration Mode' section is highlighted with a red box. The 'Manual' radio button is selected. A red arrow points from the 'Manual' radio button to a callout box.

4. Confirm the system is in "Manual" Mode.

3.3 PBX System Configuration (2)

Install a Virtual Extension card (V-UTEXT32) - 1

NS1000 Web Maintenance Console

Login as INSTALLER

Slot

Virtual

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

Combination Card

- SLC2 + LCOT2
- SLC2 + BR4
- SLC2 + PRI23
- SLC2 + PRI30
- Option Card
- DOORPHONE

KX-NS1000

DOORPHONE SLC2 PRI30

1 2

5. Select 1.1 'Slot' -> 'Virtual'

NS1000 Web Maintenance Console

Login as INSTALLER

Slot

Physical

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

V-SIP4V16 V-IP4V16 V-SPEX132 V-IPX132 V-SPEX132 V-IPC34 V-UTEXT32

Virtual 32-Channel UT Extension Card

Total number of cards 0

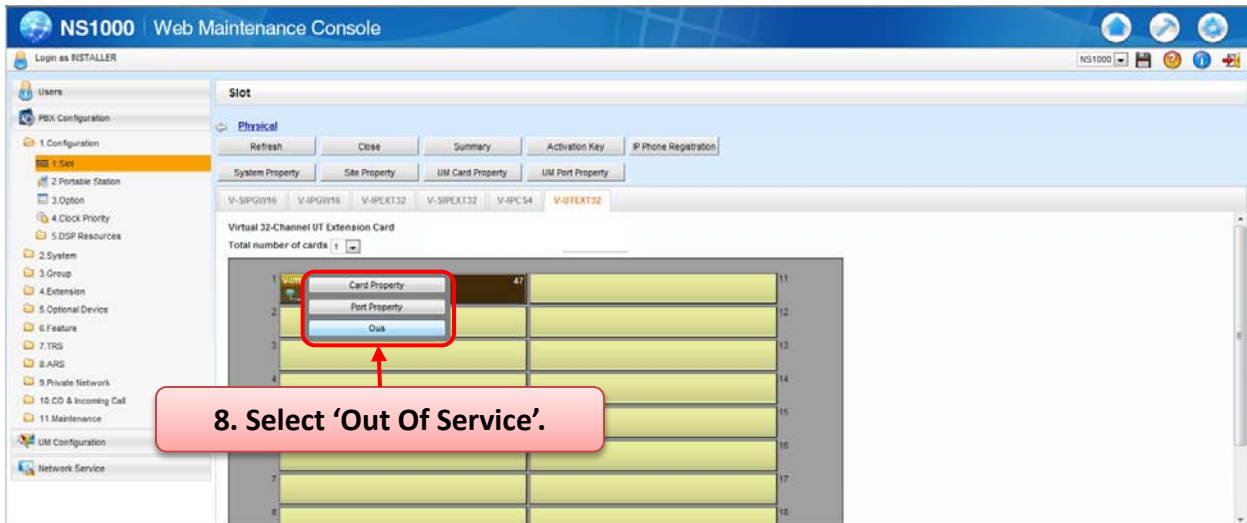
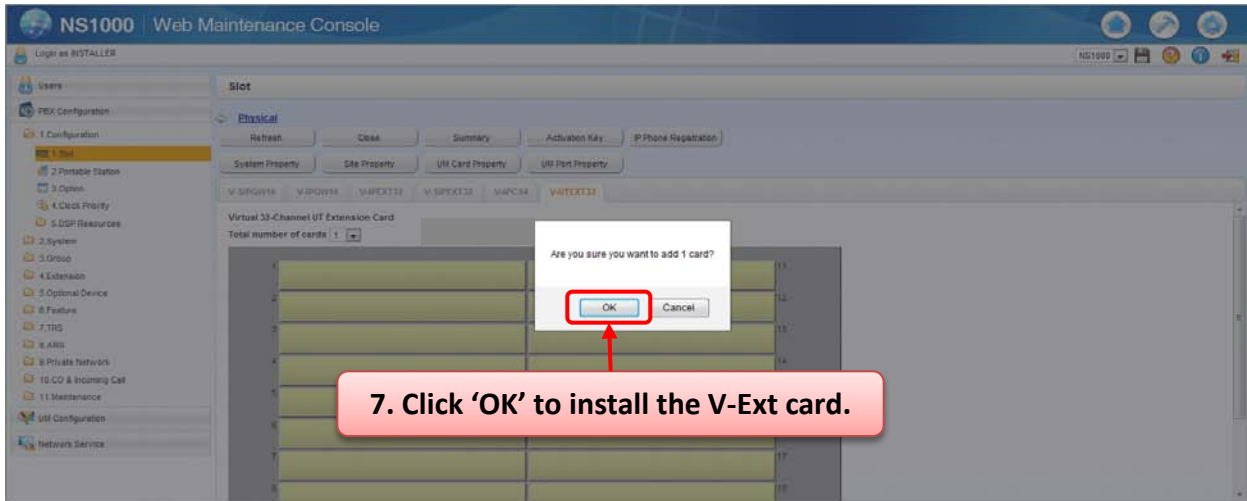
Number of SIP-MLT Users

1	1	11
2	2	12
3	3	13
4	4	14
5	5	15
6	6	16
7	7	17
8	8	18
9	9	19
10	10	20
11	11	21
12	12	22
13	13	23
14	14	24
15	15	25
16	16	26
17	17	27
18	18	28
19	19	29
20	20	30
21	21	31
22	22	32

6. Install the V-UTEXT32 Card and set the number of users.

3.3 PBX System Configuration (3)

Install a Virtual Extension card (V-UTEXT32) - 2



3.3 PBX System Configuration (4)

Install a Virtual Extension card (V-UTEXT32) - 3

NS1000 Web Maintenance Console

Slot

Physical

System Property Site Property UM Card Property UM Port Property

V-SIPGW16 V-IPGW16 V-IPEXT32 V-SIPEXT32 V-JPC54 V-UTEXT32

Virtual 32-Channel UT Extension Card

Total number of cards: 1

Card Property
Port Property
Ins
Delete

9. Select 'Port Property'.

NS1000 Web Maintenance Console

Port Property - Virtual UT Extension

Registration De-Registration Force De-Registration

Main Options

Port	Extension Number	Extension Name	Connection	Password	Status	IP Phone Registration ID (MAC Address)	Current IP Address
100	103		ALL	103	None	00:00:00:00:00:00	0.0.0.0
204			OUS	1234	None	00:00:00:00:00:00	0.0.0.0
206			OUS	1234	None	00:00:00:00:00:00	0.0.0.0
207			OUS	1234	None	00:00:00:00:00:00	0.0.0.0
208			OUS	1234	None	00:00:00:00:00:00	0.0.0.0
209			OUS	1234	None	00:00:00:00:00:00	0.0.0.0
210			OUS	1234	None	00:00:00:00:00:00	0.0.0.0

10. Set the Ext number and Password, then click 'Apply'

OK Cancel Apply

NB: By Default, the extension Password is set to '1234'

3.3 PBX System Configuration (5)

Install a Virtual Extension card (V-UTEXT32) - 4

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a navigation tree with categories like Users, PBX Configuration, and Network Service. The main area is titled 'Slot' and shows a grid of 'Virtual 32-Channel UT Extension Card' slots. A red box highlights the 'Port Property' menu option for a specific slot. A red arrow points from this box to a callout box containing the text: **11. Set the port 'In Service'.**

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a navigation tree with categories like Users, PBX Configuration, and Network Service. The main area is titled 'Slot' and shows a grid of 'Virtual 32-Channel UT Extension Card' slots. A red box highlights the 'SIP-MLT' menu option for a specific slot. A red arrow points from this box to a callout box containing the text: **12. Select 'IP-Phone' Registration -> 'SIP-MLT'**

3.3 PBX System Configuration (6)

Install a Virtual Extension card (V-UTEXT32) - 5

The screenshot displays the NS1000 Web Maintenance Console interface. The main window is titled "Port Property - Virtual UT Extension" and contains a table of extension properties. A red box highlights the "Registration" button in the top navigation bar. A red callout box with the text "13. Select 'Registration'." points to this button. Below the table, a "UT Extension Registration Wizard" dialog is open, showing a list of available extension numbers (204-228) and a "Selected Extension Number for Registration" field containing "203". A red box highlights the "203" field, and another red box highlights the "Next" button at the bottom of the wizard. A red callout box with the text "14. Select the desired Extension and follow the prompts." points to the "Next" button. The wizard proceeds to a "Registration Executing" screen, which shows a progress bar and a "Stop" button. A red callout box with the text "15. The UT Terminal will then register with the PBX." points to this screen. Finally, the wizard reaches a "Registration Completed" screen, which shows a green checkmark and a "Stop" button.

ID	Site	Shelf	Slot	Port	Extension Number	Extension Name	Connection
		ALL					ALL
		Virtual	47	1	203		Fault
		Virtual	47	2	204		Fault
3	1	Virtual	47	3	205		
4	1	Virtual	47	4	206		
5	1	Virtual	47	5	207		
		Virtual	47	6	208		
		Virtual	47	7	209		
		Virtual	47	8	210		
		Virtual	47	9	211		
		Virtual	47	10	212		
		Virtual	47	11	213		

13. Select 'Registration'.

14. Select the desired Extension and follow the prompts.

15. The UT Terminal will then register with the PBX.

Chapter 4

NT SERIES REGISTRATION 'MANUAL' MODE

4.1 Manual Registration Mode – NT series

1. Registering an IP-PT to the PBX (Manual Registration Mode)

When registering an IP-PT without a local DHCP server OR when registering an IP-PT from a remote location etc, you will need to enter the IP Address of the IP-PT AND the IP Address of the PBX into the IP-PT manually (Manual Registration Mode).



1. Connect the IP-PT to the network and apply power (PoE or AC Adaptor etc)

Searching...

SETUP

2. When the IP-PT powers on, press the 'SETUP' soft-key below the LCD display

4.1 Manual Registration Mode – NT series

1. Registering an IP-PT to the PBX (Manual Registration Mode) – cont....

(IP-PT IP Address Setting)

```
Menu
-> Network
PBX
IP Port
QoS
STORE EXIT CONT ENTER
```

3. Using the 'Navi-Key', select 'Network' and press 'Enter'.

```
DHCP      Enable Disable
IP Address
      0. 0. 0. 0.
Subnet Mask
      0. 0. 0. 0.
NEXT EXIT ENTER
```

4. Set DHCP to 'Disable'

```
DHCP      Enable Disable
Default Gateway
      0. 0. 0. 0.
EXIT PREV ENTER
```

5. Then set the IP-Address, Subnet Mask and Default Gateway of the IP-PT, using the 'Navi-key', Keypad and 'Enter' keys etc

6. When complete, press the 'Enter' key.

4.1 Manual Registration Mode – NT series.

1. Registering an IP-PT to the PBX (Manual Registration Mode) – cont....

(IP-PT IP Address Setting)

```
Menu
Network
-> PBX
IP Port
QoS
STORE EXIT CONT ENTER
```

7. Using the 'Navi-Key', select 'PBX' and press 'Enter'.

```
PBX IP Address ?
0. 0. 0. 0.
EXIT CLEAR ENTER
```

8. Then set the IP-Address of the IP-PT, using the 'Navi-key', Keypad and 'Enter' keys etc

9. When complete, press the 'ENTER' key to return to the 'Menu' screen.

```
Menu
Network
-> PBX
IP Port
QoS
STORE EXIT CONT ENTER
```

10. Press 'Store' to save the settings in the IP-PT and re-boot the unit.

The IP-PT can then be registered to the PBX using the WebMC.

4.2 PBX System Configuration (1)

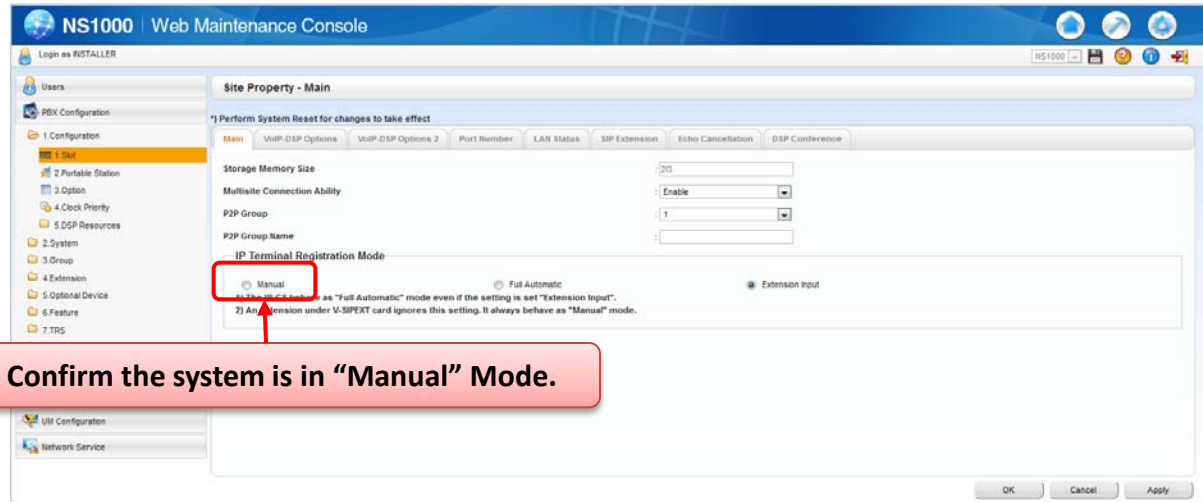
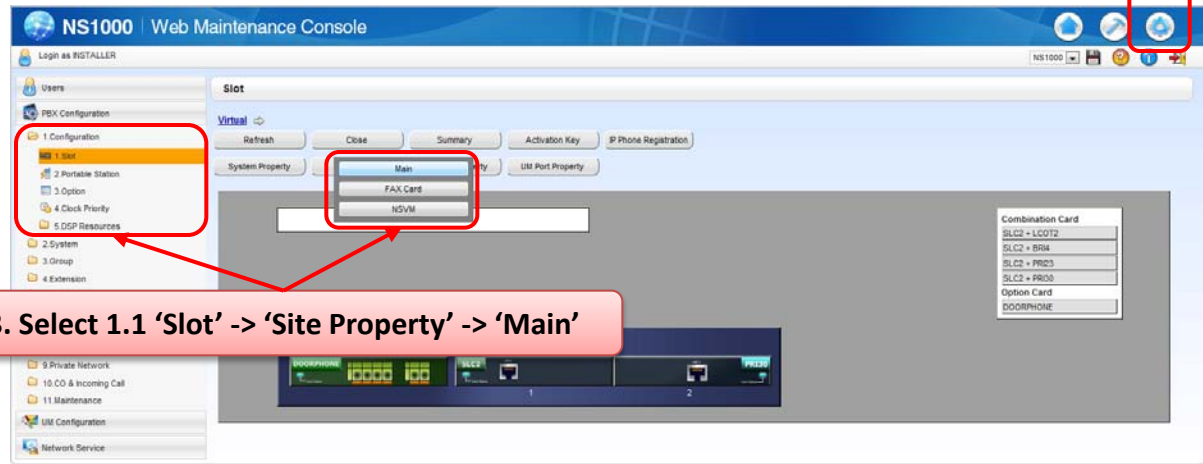
Confirm the IP Terminal Registration Mode

1. Login to the Web-MC

2. Select 'Setup'

3. Select 1.1 'Slot' -> 'Site Property' -> 'Main'

4. Confirm the system is in "Manual" Mode.



4.2 PBX System Configuration (2)

Install a Virtual Extension card (V-IPEXT32) - 1

NS1000 Web Maintenance Console

Login as INSTALLER

Slot

Virtual

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

Combination Card

- SLC2 + LCOT2
- SLC2 + BR4
- SLC2 + PRI23
- SLC2 + PRI30
- Option Card
- DOORPHONE

KX-NS1000

DOORPHONE SLC2 PRI30

1 2

5. Select 1.1 'Slot' -> 'Virtual'

NS1000 Web Maintenance Console

Login as INSTALLER

Slot

Physical

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

V-SIPGW16 V-IPGW16 V-IPEXT32 V-SIPEXT32 V-IPC54 V-UTEXT32

Virtual 32-Channel VoIP Extension Card

Total number of cards 0

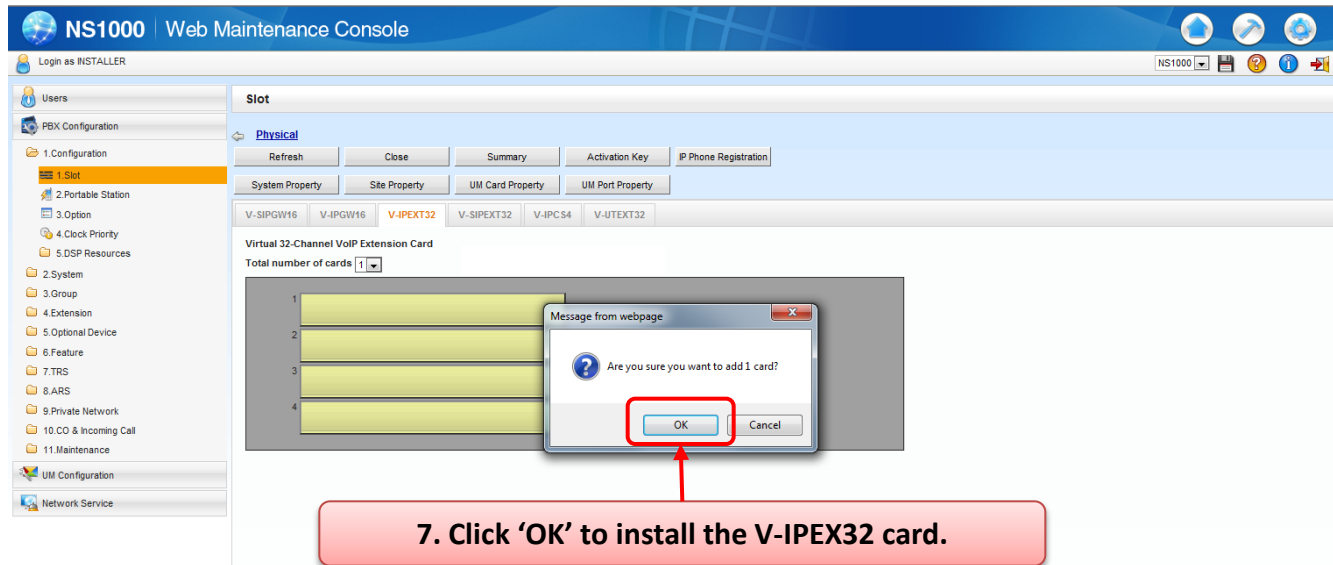
0 1 2 3 4

1 2 3 4

6. Install the V-IPEXT32 Card.

4.2 PBX System Configuration (3)

Install a Virtual Extension card (V-IPEXT32) - 2



The screenshot displays the NS1000 Web Maintenance Console interface. The left sidebar shows the navigation menu with '1. Slot' selected under 'PBX Configuration'. The main content area is titled 'Slot' and shows a 'Physical' tab. Below the tabs, there is a row of card types: V-SIPGW16, V-IPGW16, V-IPEXT32 (highlighted), V-SIPEXT32, V-IPCS4, and V-UTEXT32. A 'Virtual 32-Channel VoIP Extension Card' section is visible, with a 'Total number of cards' dropdown set to '1'. A dialog box titled 'Message from webpage' is overlaid on the screen, asking 'Are you sure you want to add 1 card?' with 'OK' and 'Cancel' buttons. A red box highlights the 'OK' button, and a red arrow points to it from a callout box below.

7. Click 'OK' to install the V-IPEX32 card.

4.2 PBX System Configuration (4)

Setting Registration Mode - 1

NS1000 Web Maintenance Console

Log in as INSTALLER

Users

PBX Configuration

1. Configuration

1. Slot

2. Portable Station

3. Option

4. Clock Priority

5. DSP Resources

2. System

3. Group

4. Extension

5. Optional Device

6. Feature

7. TRS

8. ARS

9. Private Network

10. CO & Incoming Call

11. Maintenance

UM Configuration

Network Service

Slot

Physical

Refresh Close Summary Activation Key IP Phone Registration

System Property Site Property UM Card Property UM Port Property

V-SIPGW16 V-IPGW16 V-IPEXT32 V-SIPEXT32 V-IPC54 V-UTEXT32

Virtual 32 Channel VoIP Extension Card

Total number of cards 1

1 Card Property 48

2 Port Property

3 Ous

4

9. Select 'Port Property'.

NS1000 Web Maintenance Console

Log in as INSTALLER

Users

PBX Configuration

1. Configuration

1. Slot

2. Portable Station

3. Option

4. Clock Priority

5. DSP Resources

2. System

3. Group

4. Extension

5. Optional Device

6. Feature

7. TRS

8. ARS

9. Private Network

10. CO & Incoming Call

11. Maintenance

UM Configuration

Network Service

Port Property - Virtual IP Extension

Registration De-registration Forced De-registration

Options

Port	Extension Number	Extension Name (20 characters)	Connection	Status	IP Phone Registration ID (MAC Address)	Current IP Address	Program Ver.
236			OUS	ALL	00:00:00:00:00:00	0.0.0.0	
237			OUS	None	00:00:00:00:00:00	0.0.0.0	
238			OUS	None	00:00:00:00:00:00	0.0.0.0	
239			OUS	None	00:00:00:00:00:00	0.0.0.0	
240			OUS	None	00:00:00:00:00:00	0.0.0.0	
241			OUS	None	00:00:00:00:00:00	0.0.0.0	
242			OUS	None	00:00:00:00:00:00	0.0.0.0	
243			OUS	None	00:00:00:00:00:00	0.0.0.0	
244			OUS	None	00:00:00:00:00:00	0.0.0.0	
245			OUS	None	00:00:00:00:00:00	0.0.0.0	
246			OUS	None	00:00:00:00:00:00	0.0.0.0	
247			OUS	None	00:00:00:00:00:00	0.0.0.0	

Page 1 of 2

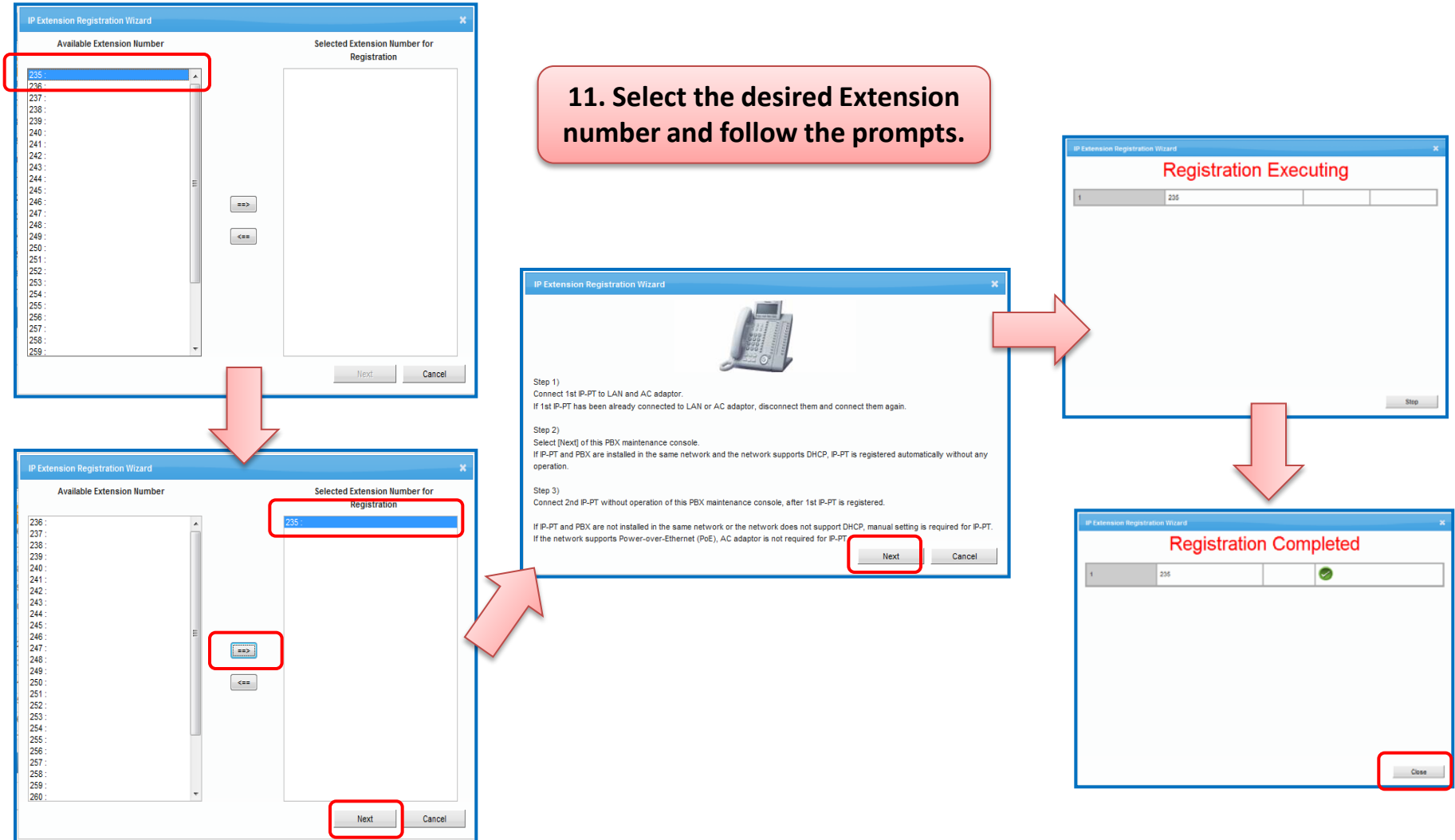
View 1 - 20 of 32

OK Cancel Apply

10. Click 'Registration'.

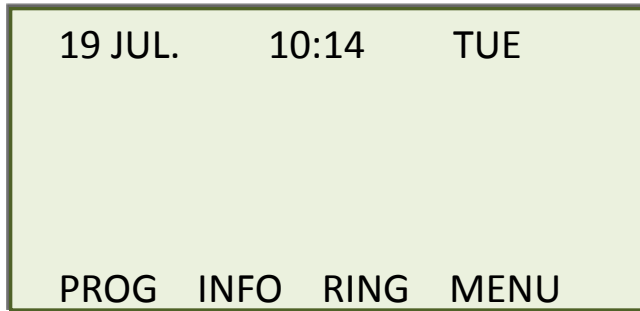
4.2 PBX System Configuration (5)

Setting Registration Mode - 2



4.3 Registration Confirmation – NT series

When the NT-PT has been registered, its display will display the following information;



19 JUL. 10:14 TUE

PROG INFO RING MENU

12. After the IP-PT has re-booted and the WebMC Registration process has been completed, the IP-PT will be in-service.

Further Extension configuration can now be made via the WebMC, using the Extension Number of the IP-PT.


Chapter 5


DECT CS INSTALLATION

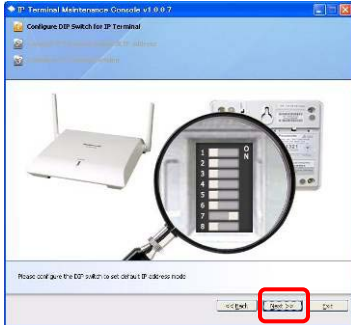
5-0. DECT CS Installation (KX-NCP0158CE) – (1)


To assign a static IP Address to the KX-NCP0158CE IP-CS, the Panasonic UPCM Tool is required. It is not possible to set a static IP Address on the IP-CS via the NS1000 WebMC.

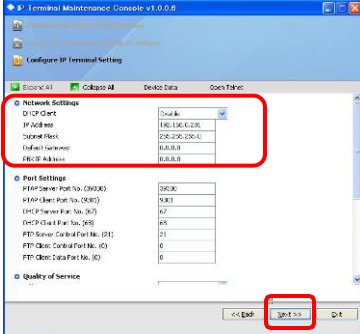
Step 1. Assign the IP-CS IP address, subnet, PBX IP address, . etc,
UPCMC Tool is required. (Available from your NSC)

1  **Select IP Terminal**

2  **Press next**

3  **Change DIP SW 7 to ON and Power off/on the IP-CS.**

4  **Assign 192.168.2.xxx as PC IP address and press next.**

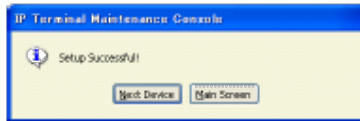
5  **Assign IP-CS data like IP address, PBX IP address, etc., and press next. After that, Power off/on the IP-CS.**

NB: By default, the KX-NCP0158CE is set to DHCP. It is only necessary to set a static IP Address if there is no available DHCP Server or if the IP-CS is to be placed on a Network different than then PBX.

5-0. DECT CS Installation (KX-NCP0158CE) – (2)

Continued from previous slide

6



- **Next Device:** Assign IP addressing information to other IP-CSs.
 - **Main Screen:** Return to the main screen.
4. Turn off the IP-CS.
 5. Return DIP switch no. 7 to the OFF position.
 6. Return the IP address and subnet mask address of the PC to their original values.

5-0. DECT CS Installation (KX-NCP0158CE) – (3)

Step 2 - Registering IP-CSs to the PBX

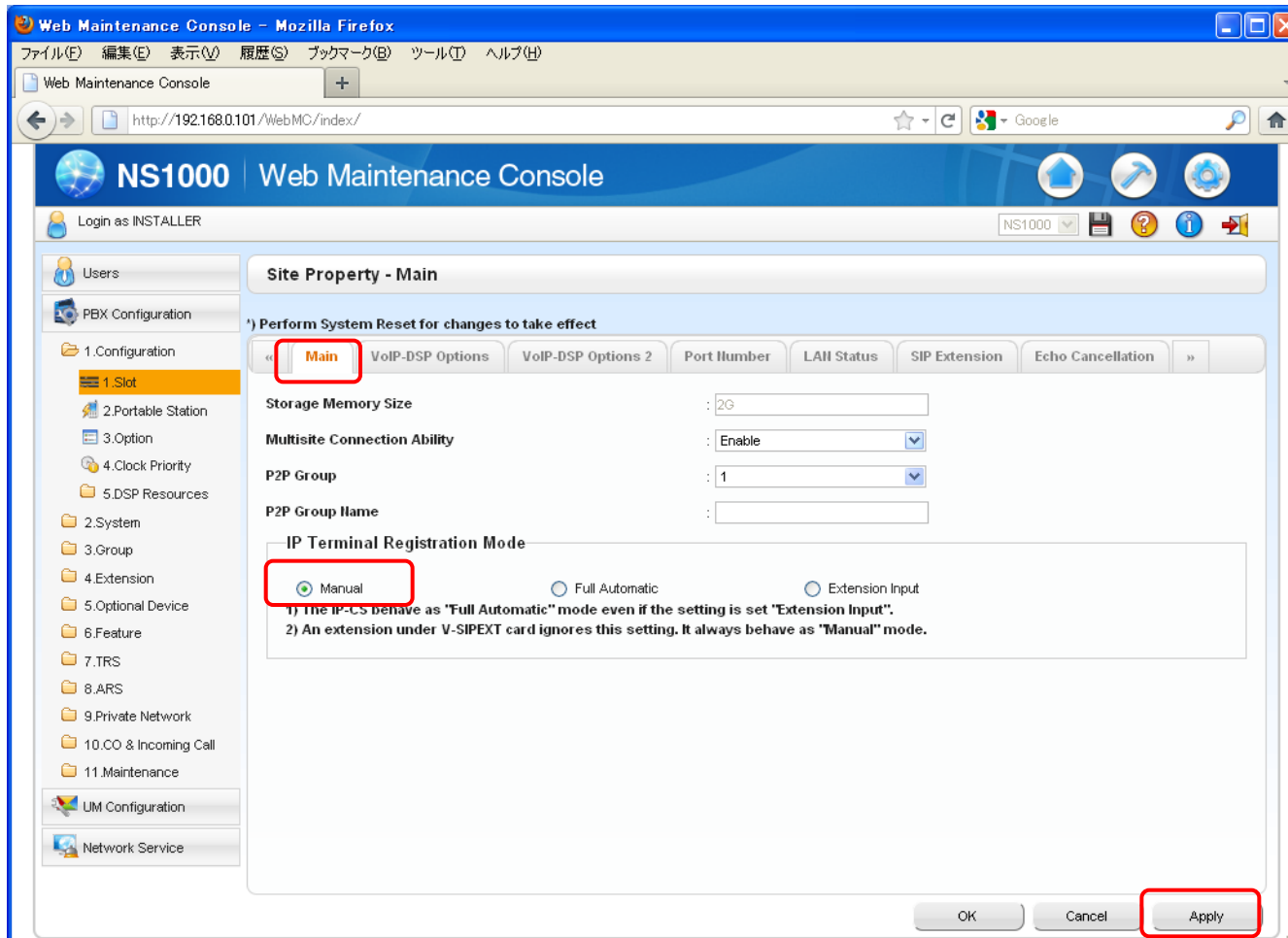
Click [Setup] → select [PBX Configuration] – [1.Configuration] – [1.Slot] → [IP Phone Registration] – [Option] or [Site Property] – [Main]

The screenshot displays the NS1000 Web Maintenance Console interface in a Mozilla Firefox browser window. The browser address bar shows the URL `http://192.168.0.101/WebMC/index/`. The console header includes the NS1000 logo and the text "Web Maintenance Console". A navigation menu on the left lists various configuration categories, with "1.Configuration" and its sub-item "1.Slot" highlighted with a red box. The main content area shows a "Slot" configuration page with several buttons: "Refresh", "Close", "Summary", "Activation Key", "IP Ph" (highlighted with a red box), "System Property", "Site Property" (highlighted with a red box), "UM Card Property", and "UM Port Property". Below these buttons are three stacked buttons: "Main" (highlighted with a red box), "FAX Card", and "NSYM". To the right, there are two dropdown menus: "IP Ph" (highlighted with a red box) and "Option" (highlighted with a red box). The "IP Ph" dropdown shows options: "IP-PT", "SIP-MLT", "Standard SIP Phone", and "Option". The "Option" dropdown shows options: "Combination Card", "SLC2 + LCOT2", "SLC2 + BRI4", "SLC2 + PRI23", "SLC2 + PRI30", "Option Card", and "DOORPHONE". At the bottom of the console, there is a diagram of the KX-NS1000 hardware with labels for "DOORPHONE", "SLC2", and "LCOT2".

5-0. DECT CS Installation (KX-NCP0158CE) – (4)

Continued from previous slide

Select “Manual” in “IP Terminal Registration Mode”, then click [Apply].



5-0. DECT CS Installation (KX-NCP0158CE) – (5)

Continued from previous slide

1. Click [Setup] → select [PBX Configuration] – [1.Configuration] – [1.Slot] → select [Virtual]

The screenshot shows the NS1000 Web Maintenance Console interface in a Mozilla Firefox browser window. The browser address bar shows the URL `http://192.168.0.101/WebMC/index/`. The page title is "NS1000 Web Maintenance Console". The user is logged in as "INSTALLER".

The navigation menu on the left includes:

- Users
- PBX Configuration
 - 1.Configuration
 - 1.Slot (highlighted)
 - 2.Portable Station
 - 3.Option
 - 4.Clock Priority
 - 5.DSP Resources
 - 2.System
 - 3.Group
 - 4.Extension
 - 5.Optional Device
 - 6.Feature
 - 7.TRS
 - 8.ARS
 - 9.Private Network
 - 10.CO & Incoming Call
 - 11.Maintenance
- UM Configuration
- Network Service

The main content area is titled "Slot" and contains the following elements:

- A "Virtual" button, which is highlighted with a red box.
- Buttons for "Refresh", "Close", "Summary", "Activation Key", and "IP Phone Registration".
- Buttons for "System Property", "Site Property", "UM Card Property", and "UM Port Property".

Below the buttons, there is a diagram of the KX-NS1000 hardware. The diagram shows two slots, labeled "1" and "2". Slot 1 contains a "DOORPHONE" card and an "SLC2" card. Slot 2 contains an "LCOT2" card. To the right of the diagram, there is a table for "Combination Card" and "Option Card".

Combination Card
SLC2 + LCOT2
SLC2 + BRI4
SLC2 + PRI23
SLC2 + PRI30

Option Card
DOORPHONE

5-0. DECT CS Installation (KX-NCP0158CE) – (6)

Continued from previous slide

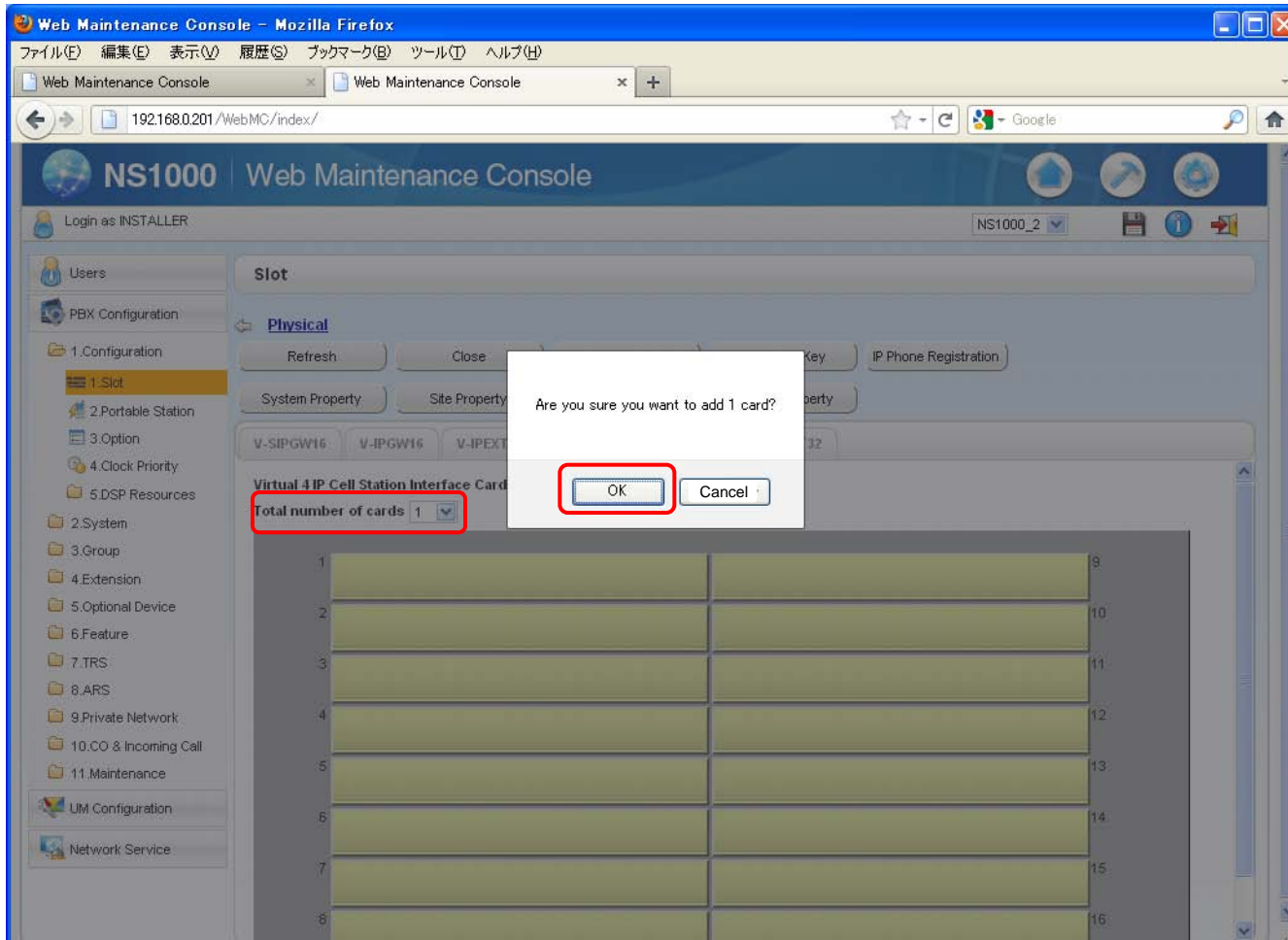
2. Select [V-IPCS4]

The screenshot displays the NS1000 Web Maintenance Console interface in a Mozilla Firefox browser window. The browser address bar shows the URL 192.168.0.201/WebMC/index/. The console header includes the NS1000 logo and the text 'Web Maintenance Console'. A navigation menu on the left lists various configuration categories, with '1. Slot' selected. The main content area is titled 'Slot' and includes a 'Physical' tab. Below the tab are several buttons: Refresh, Close, Summary, Activation Key, IP Phone Registration, System Property, Site Property, UM Card Property, and UM Port Property. A row of tabs for different interface cards is visible, with 'V-IPCS4' highlighted by a red box. Below this row, the section 'Virtual 4 IP Cell Station Interface Card' is shown, featuring a 'Total number of cards' dropdown set to 0 and a grid of 16 slots (numbered 1 to 16) for card installation.

5-0. DECT CS Installation (KX-NCP0158CE) – (7)

Continued from Previous slide

3. Select [Number of cards], then click [OK]



5-0. DECT CS Installation (KX-NCP0158CE) – (8)

Continued from previous slide

4. Select [Port property]

The screenshot shows the NS1000 Web Maintenance Console interface. The browser title is "Web Maintenance Console - Mozilla Firefox". The address bar shows "192.168.0.201/WebMC/index/". The page header includes "NS1000 Web Maintenance Console" and a login prompt "Login as INSTALLER". The left sidebar contains a navigation menu with "PBX Configuration" expanded to "1. Slot". The main content area is titled "Slot" and includes a "Physical" tab. Below the tab are buttons for "Refresh", "Close", "Summary", "Activation Key", and "IP Phone Registration". There are also buttons for "System Property", "Site Property", "UM Card Property", and "UM Port Property". A row of tabs for virtual cards is shown, with "V-IPCS4" selected. Below this is the "Virtual 4 IP Cell Station Interface Card" section, which includes a "Total number of cards" dropdown set to "1". A table displays the card configuration for slots 1 through 16. The first row (slot 1) is highlighted, and a red box highlights the "Port Property" button within the first column of this row.

Slot	Card Type	Card Property	Card ID
1	V-IPC	Card Property	67
2		Port Property	
3		Ous	
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

5-0. DECT CS Installation (KX-NCP0158CE) – (9)

Continued from previous slide

5. Click [Registration]

The screenshot shows the NS1000 Web Maintenance Console interface in Mozilla Firefox. The browser address bar shows the URL 192.168.0.201/WebMC/index/. The page title is 'NS1000 Web Maintenance Console'. The user is logged in as 'INSTALLER'. The main content area is titled 'Port Property - Virtual IPCS' and contains three buttons: 'Registration', 'De-registration', and 'Forced De-registration'. The 'Registration' button is highlighted with a red box. Below the buttons are 'Main' and 'Option' tabs. A table with 6 columns (No., Shelf, Slot, Port, CS Name, and a rightmost column) is displayed. The table has 4 rows of data. The first row is highlighted in orange. The table data is as follows:

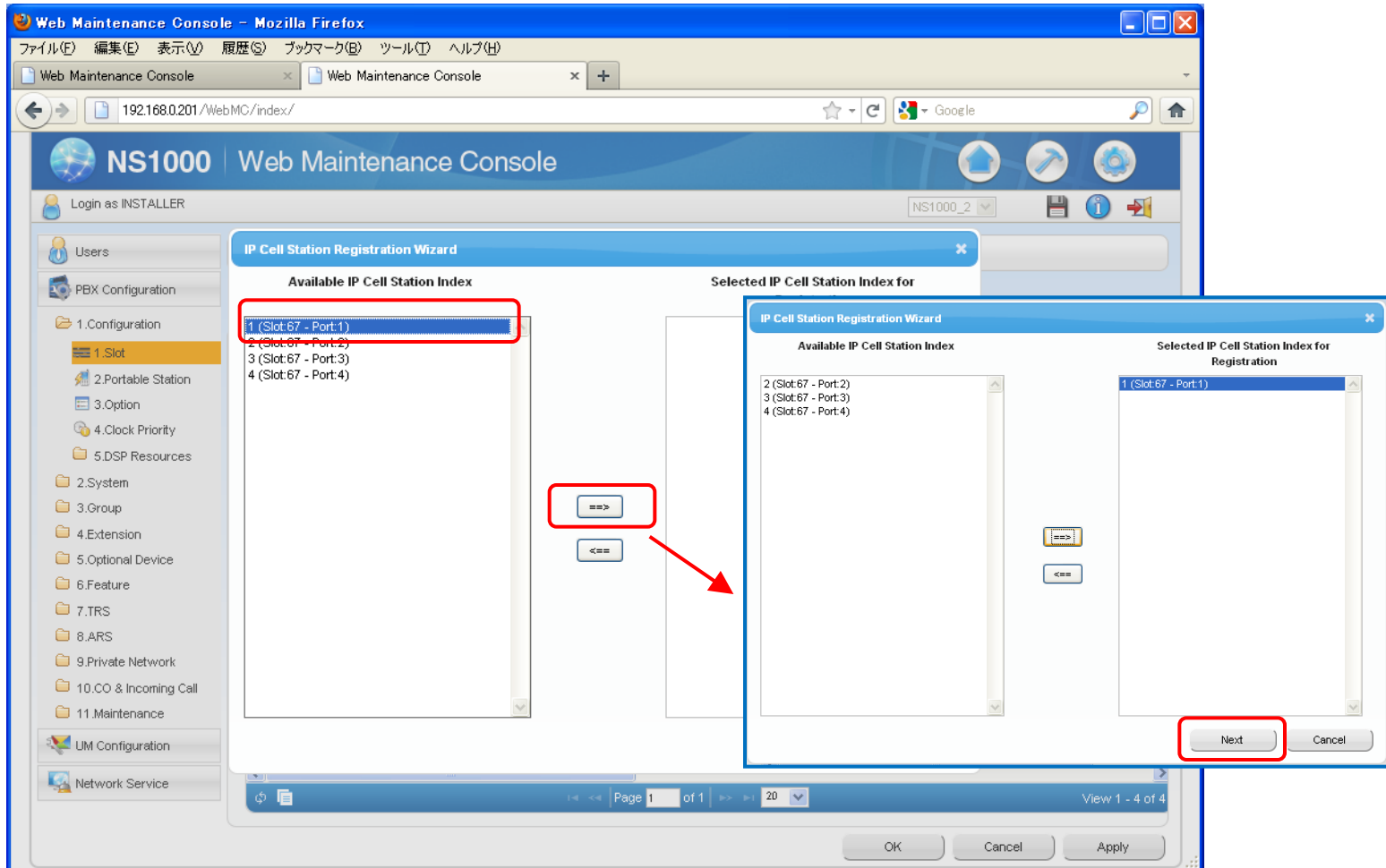
No.	Shelf	Slot	Port	CS Name (20 characters)	
1	Virtual	67	1		ALL
2	Virtual	67	2		
3	Virtual	67	3		
4	Virtual	67	4		

At the bottom of the page, there are 'OK', 'Cancel', and 'Apply' buttons. The page number is 1 of 1, and the view is 1 - 4 of 4.

5-0. DECT CS Installation (KX-NCP0158CE) – (10)

Continued from previous slide

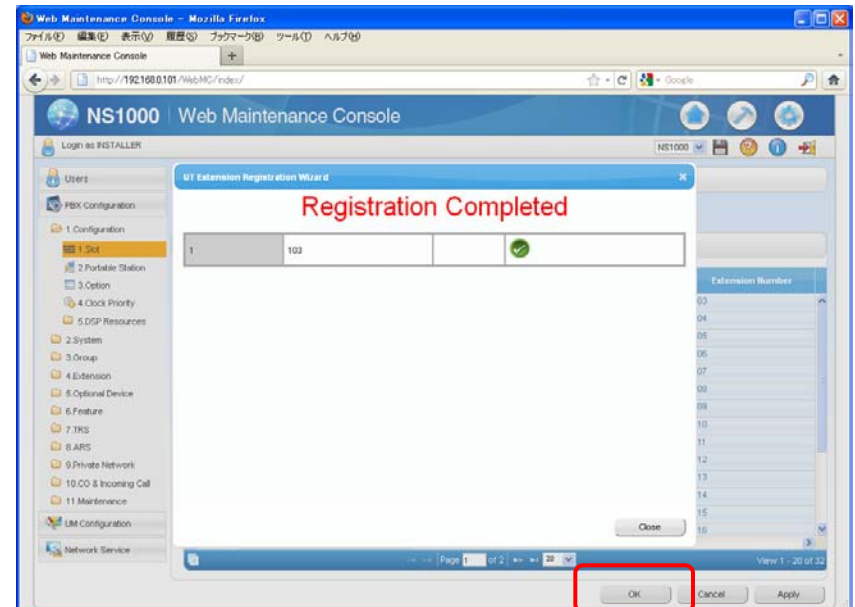
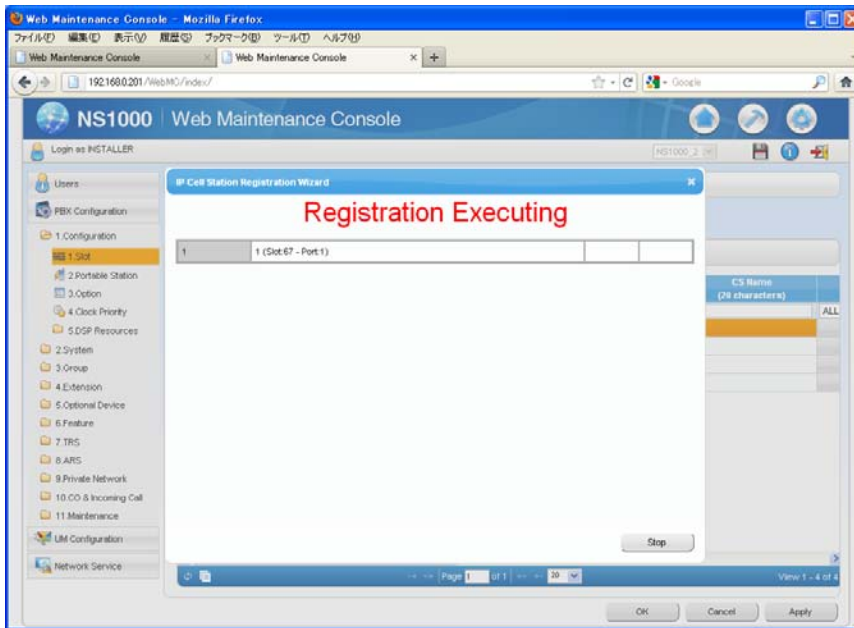
6. Select [IP-CS Index], then click [Next]



5-0. DECT CS Installation (KX-NCP0158CE) – (11)

Continued from previous slide

7. After Registration completed, then click [Close]



Chapter 6

REGISTRATION – OTHER TERMINALS

6-1. Registration – Other Terminals

Other Terminals such as:

- KX-NT700 (Conferencing Unit)
- TCA/WT Series DECT Terminals
- 3rd Party SIP Telephones

Must all be registered using 'Manual' Registration mode.

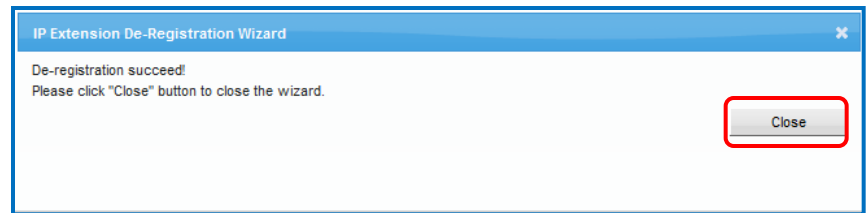
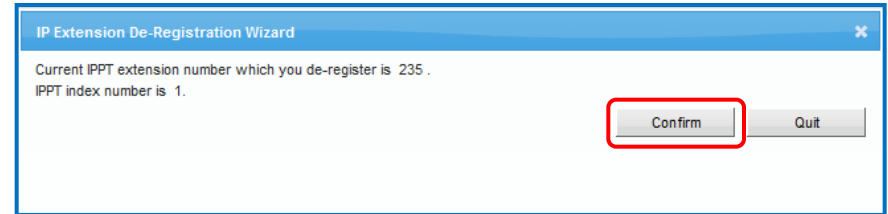
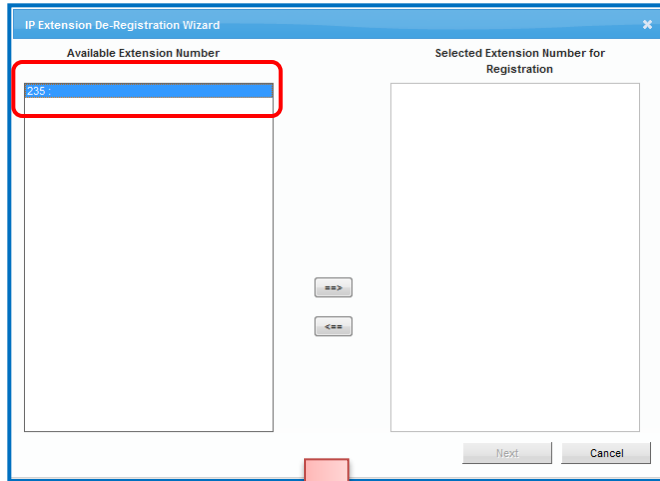
Notes:

For KX-NT700 and 3rd Party SIP Telephones – ensure a V-SIPEXT32 (inc A/Ks) is installed.

DECT Handsets (TCA/WT) are registered in the same manner as TDE/NCP PBX systems.

6-2. De-Registration (2)

After selecting the de-registration mode, select the desired extension and follow the prompts.



When the de-registration process is complete, the display of the terminal will indicate that it is not registered. (Fault, Poor Connection etc)

TERMINAL REGISTRATION COMPLETE

SECTION - 4

NS1000

USER / ADMIN / INSTALLER PROFILES



Contents

Chapter 1 UT/NT Series Registration

1-1. Overview

1-2 . Default Profile (INSTALLER)

1-3. Creating a Profile

1-4. Profile Types (User)

1-5. Profile Types (User + Rec Control)

1-6. Profile Types (Administrator)

1-7. Profile Types (Installer)

1-1. Overview

Setting a 'Profile' within the NS1000 allows for PBX Management settings to be made on a individual-user level.

i.e. Each person having their own 'Profile' can login to the NS1000 system and make setting changes as allowed by their profile level (User, Administrator, Installer)

Information for each User account can be added, edited, or and deleted by an Administrator or Installer level account.

Available Via	Profile Type		Capacity
Web Maintenance	Users	User Level	1512 accounts
		Admin Level	32 accounts
	Installer		One account
	Password		4 to 16 digits per account

1-2. Default Profile - Installer (1)

By Default, an single INSTALLER Profile is pre-defined in the WebMC

NS1000 | Web Maintenance Console

Login as INSTALLER

Users

- 1. User Profiles
- 2. Add User

PBX Configuration

UM Configuration

Network Service

Common FWD DND

No.	First Name	Last Name	FWD setting - call from CO Mode	FWD setting - call from CO Destination	FWD setting - call from Ext. Mode	FWD setting - call from Ext. Destination	DND setting - call from CO	DND setting - call from Ext.
1	Installer		ALL		ALL		ALL	ALL

User Profiles

Common FWD DND

No.	First Name	Last Name	FWD setting - call from CO Mode	FWD setting - call from CO Destination	FWD setting - call from Ext. Mode	FWD setting - call from Ext. Destination	DND setting - call from CO	DND setting - call from Ext.
1	Installer		ALL		ALL		ALL	ALL

Annotations:

- Login Profile is shown here.
- Profile list view is shown here.
- Only the INSTALLER profile is created by default. All other profiles must be created manually.
- Common
- FWD DND
- Only the INSTALLER Password is stored by default, all other fields are empty (default)

Only the INSTALLER Password is stored by default, all other fields are empty (default)

1-2. Default Profile - Installer (2)

In the profile screen, it is possible to Add, Edit, Delete and Filter profiles depending on the Profile Level.

NS1000 | Web Maintenance Console

Login as INSTALLER

Head Office

User Profiles

Common FWD DND

No.	First Name	Last Name	User Group	Ext No.
1	Installer		ALL	
2	David	Johnson	1	101

Toolbar Legend:

- Remove filter
- Adds new entry
- Edits the selected row
- Deletes the selected row
- Create Range

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OK Cancel Apply

1-2. Default Profile - Installer (3)

From the Installer Level profile (Maintenance Screen), it is possible to select which screens the Administrator Profiles can see

Maintenance -> Tool ->
8. Screen Customise

Specify which menu screens, tools and utilities can be accessed in the User (Administrator) account level.

Users
 1. User Profiles
 2. Add User
 3. Automatic Two-way Recording
 1. Edit a Recording
 2. Record List
 PBX Configuration
 1. Configuration
 1. Slot
 2. Portable Station
 3. Option
 4. Clock Priority
 5. DSP Resources
 2. System
 3. Group
 4. Extension
 5. Optional Device
 6. Feature
 7. TRS
 8. ARS

OK Cancel Apply

NB: By Default, an Administrator cannot see any Profile screen – this must be selected here to enable an Admin to view their own Profile etc.

1-3. Creating a Profile – ‘Add User Wizard’ (1)

By clicking the ‘Add User’ option, the Add User Wizard starts

The screenshot shows the 'Add User' wizard in the Web Maintenance Console. The interface includes a left-hand navigation menu, a main form area, and a bottom button bar. Five numbered callouts in red boxes provide step-by-step instructions:

- 1. Click 'Add User'**: Points to the '2. Add User' option in the left-hand menu.
- 2. Wizard start and prompts for User Information.**: Points to the 'User Information' tab in the main form area.
- 3. Enter the Users details, location and WebMC Language preferences*.**: Points to the input fields for First Name, Last Name, Change Language, Site, Department, and Section.
- 4. Select 'User' or 'Administrator' Profile type.**: Points to the 'User Group' dropdown menu.
- 5. Click 'OK'**: Points to the 'OK' button in the bottom right corner.

* Available Languages depends on your PBX model type.

The language list shown is:

- English (UK)
- English (US)
- español
- Français
- Italiano
- Deutsch
- Русский
- Others

1-3. Creating a Profile – ‘Add User Wizard’ (2)

Next step is to enter the users Contact information, this is necessary for CA

6. Wizard prompts for Contact Information.

7. Select an existing Ext number and set a PIN

8. Enter DDI, FAX, Phone and Email data

9. Click 'OK'

CAUTION! It is strongly recommended that a password should be complex for maximum protection. Change the password periodically.

Extension No.	: 235
Device	: Virtual Extension
Extension PIN	:
DDI	: 555235
Fax	: 555111
Phone (Home)	: 555789
Phone (Mobile)	: 079555123
Email 1	: j.doe@panasonic.com
Email 2	: johndoe@pana.co.uk
Email 3	: johnnyd@hotmail.com

NB: Extension numbers must be pre-existing. It is not possible to input a 'New' Ext number.

1-3. Creating a Profile – ‘Add User Wizard’ (3)

Next step is to configure the users Mailbox

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo and 'Web Maintenance Console' text. A sidebar on the left lists navigation options: Users, 1. User Profiles (highlighted), 2. Add User, PBX Configuration, UM Configuration, and Network Service. The main content area is titled 'Edit User' and features several tabs: User Information, Contact, Unified Message (selected), Email Notification, Telephony Feature, and Login Account. The 'Unified Message' tab contains the following configuration fields:

- UM Group No.: 1. [500:Voicemail 1] (dropdown menu)
- Mailbox Number: 235 (text input)
- Class of Service (COS): 1 (dropdown menu)
- Prompt Registration: [Prompt Registration] (button)
- Mailbox Password: [Edit] (button)
- Mailbox Password (Message Client): [Edit] (button)
- Advanced setting: [Advanced setting] (button)

Below the fields is a caution note: "CAUTION: It is strongly recommended that a password should be complex for maximum protection. Change the password periodically."

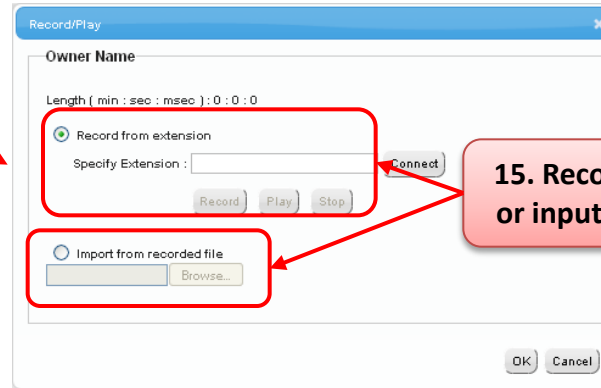
Three red callout boxes provide instructions:

- 10. Wizard prompts for UM data.** (Points to the 'Unified Message' tab)
- 11. Select the UM group, Mbx number and desired UM COS.** (Points to the UM Group No., Mailbox Number, and Class of Service fields)
- 12. Mbx prompts / greetings, Passwords and Advanced Mbx settings can be made via the appropriate key.** (Points to the Prompt Registration, Mailbox Password, Mailbox Password (Message Client), and Advanced setting buttons)

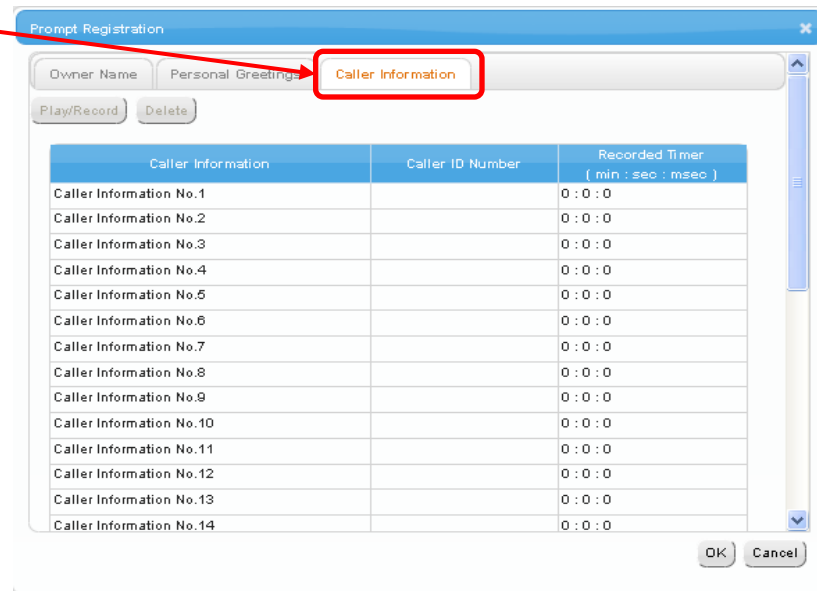
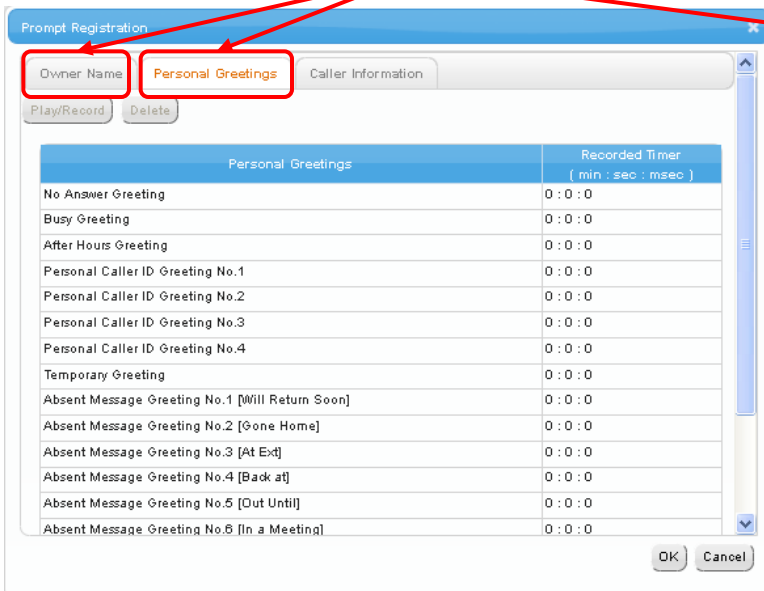
**NB: Mbx numbers must not pre-existing.
Mbxes are automatically created by this step.**

1-3. Creating a Profile – ‘Add User Wizard’ (4)

Individual Mbx prompts can be set via the ‘Prompt’ Registration button;



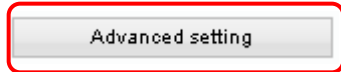
13. Owners Name, Personal Greetings and Caller information can be recorded here.



NB: File format is: CCITT A-law, 64kbps, 8kHz, 8bit, Mono (After conversion from .wav)

1-3. Creating a Profile – ‘Add User Wizard’ (5)

Advance Mbx configuration can be made via the ‘Advanced Setting button



Mailbox Settings

Mailbox Parameters

Mailbox Number	: 235
Extension	: 235
First Name	: John
Last Name	: Doe
Mailbox Password	: <input type="button" value="Edit"/>
Mailbox Password (Message Client)	: <input type="button" value="Edit"/>
Class of Service (Mailbox)	: 1
Covering Extension	: <input type="text"/>
Interview Mailbox	: <input type="text"/>
All Calls Transfer to Mailbox	: No
Call Transfer Sequence (Selection)	: System
Call Transfer Sequence (Other) [D-9 * # D R F T X , ;]	: <input type="text"/>
No Answer Time (Selection)	: System

16. Detailed settings of

- Call Transfer
- No Answer Time
- Incomplete Call Handling
- Notification Parameters
- External Message Delivery
- Auto Forwarding
- Personal Custom Service
- Personal Distribution Lists
- Remote Call
- Automatic Login
- Direct Service
- FAX Options
- Message Announcements
- Message Client Language
- Greeting Recording

Can be made here.



1-3. Creating a Profile – ‘Add User Wizard’ (6)

It is possible to set if the user will receive and email for missed call (Email Notification).

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo, the title 'Web Maintenance Console', and several utility icons. Below the navigation bar, the user is logged in as 'INSTALLER'. The main content area is titled 'Edit User' and features a series of tabs: 'User Information', 'Contact', 'Unified Message', 'Email Notification', 'Telephony Feature', and 'Login Account'. The 'Email Notification' tab is currently selected and highlighted with a red box. Within this tab, the section 'Email notification for missed call' contains two radio buttons: 'Enable' (which is selected) and 'Disable'. A red box highlights this section, and a red arrow points from a callout box to the 'Enable' radio button. The callout box contains the text '17. Enable or Disable Email Notification.' At the bottom right of the interface, there are three buttons: 'OK', 'Cancel', and 'Apply'.

NB: Email Activation Key is required per User.

1-3. Creating a Profile – ‘Add User Wizard’ (7)

The users PBX COS and Call-FWD/DND options can be set here; in ‘Telephony Features’

NS1000 Web Maintenance Console

Login as INSTALLER

Add User

User Information | Contact | Unrified Message | Email Notification | **Telephony Feature** | Login Account

18. Set the desired COS Level.

Class of Service (COS) : 1:

19. C-FWD preferences are set here

Forward / Do Not Disturb

For external calls

Off
Always (All)
Busy
No Answer
Busy / No Answer

Busy / No Answer
Phone (home)
555789

Phone (home)
Phone (mobile)
Other

For internal calls

Always (All)
Other

20. Select if same for Int/Ext call

For both internal calls and external calls

21. Set Speed Dial and Flexible Keys

Speed Dialling View/Edit
Flexible Button View/Edit

NB: Phone(Home) and (Mobile) data is taken from the Contact Screen. ‘Other’ allows you to input any number.

1-3. Creating a Profile – ‘Add User Wizard’ (8)

The users Personal Speed Dial and Flexible Key Assignment can be made here;

Speed Dialling View/Edit Maintenance Console

Extension Number / Name: 2357

Index	Speed Dialling - Personal Name (20 characters)	Speed Dialling - Personal Number (32 digits)
00		
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		

Page 1 of 6 View 1 - 20 of 100

22. Up to 100 Personal Speed Dials can be set

Flexible Button View/Edit Maintenance Console

Extension Number / Name: 2357

Telephone Type

Key Label Print Form Copy to Reset Import Export

NT265 / NT321

Key Setting Key Setting & Key Label Name

Key Location	Type	Parameter Selection	Extension Number	Extension Name
1	Single CO	1 :		
2	Single CO	2 :		
3	Single CO	3 :		
4	Single CO	4 :		
5	Single CO	5 :		
6	Single CO	6 :		

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23. UT Flexible Key assignment must be done via WebMC (User Profile)

1-3. Creating a Profile – ‘Add User Wizard’ (9)

Last step is to create the users Login Account (ID and Password).

This will allow the user to Login via the WebMC and change their details / settings etc in future.

24. Enter the Appropriate ID and Password (Strong Passwords are better)

25. INSTALLER can change the Web MC language from the Login Account.

26. Click 'OK' to Finish

NB: When Logging In, the user will only see the screens / data that they are allowed to change based on their profile (User / Administrator / Installer etc)

1-4. Profile Types – ‘User’

A User profile only allows changes to limited settings;

Many setting options are not displayed or cannot be changed by the user.

System Settings cannot be seen.

Web Maintenance Console

Login as 230 NS1000

Users

1. User Profiles

Edit User

User Information Contact Unified Message Email Notification Telephony Feature Login Account

First Name :

Last Name :

Change Language : English (UK)

Many Items cannot be changed.

Site : NS1000

Department :

Section :

User Group : 1

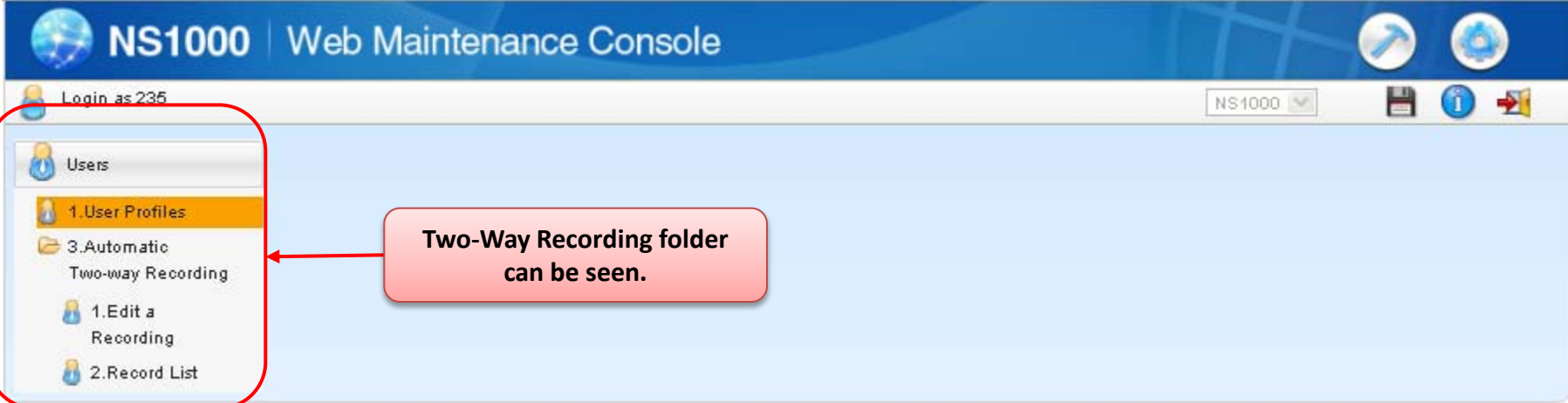
User Level : User

For details of what can be changed via a User profile, refer to the Appendix;

1-5. Profile Types – ‘User’ + ‘REC Control’

A User profile with Rec Control only allows changes to limited settings, however the user can access the necessary recordings.

Many other setting options are not displayed or cannot be changed by the user.



The screenshot shows the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo and the text 'Web Maintenance Console'. Below the navigation bar, the user is logged in as '235'. The main menu on the left is highlighted with a red rounded rectangle. The menu items are: 'Users', '1. User Profiles', '3. Automatic Two-way Recording', '1. Edit a Recording', and '2. Record List'. A red arrow points from a text box to the '3. Automatic Two-way Recording' folder. Another red arrow points from a text box to the '1. Edit a Recording' and '2. Record List' items. A third red arrow points from a text box to the '1. Edit a Recording' and '2. Record List' items.

Two-Way Recording folder can be seen.

Other System Settings are not shown.

For details of what can be changed via a User + 2-Way Rec profile, refer to the PC-Programming Guide

1-6. Profile Types – ‘Administrator’

An Administrator profile allows changes to limited system settings;
An Administrator is able to manage User profiles.

NS1000 Web Maintenance Console

Login as 230

Users

PBX Configuration

- 1. Configuration
- 2. System
- 3. Group
- 4. Extension
 - 1. Wired Extension
 - 1. Extension Settings
 - 4. Flexible Button
- 2. Portable Station
- 5. Optional Device
- 6. Feature
- 10. CO & Incoming Call

UM Configuration

Network Service

System Log data can also be obtained via the Maintenance Screen

Basic System Settings can be changed to enable local administration and configuration

For details of what can be changed via an Administrator profile, refer to the PC-Programming Guide

1-7. Profile Types – ‘Installer’

An Installer profile allows System wide configuration and Maintenance;
An Installer is able to manage Administrator and User profiles.

NS1000 Web Maintenance Console

Login as INSTALLER

NS1000

Users

PBX Configuration

- 1. Configuration
- 2. System
- 3. Group
- 4. Extension
- 5. Optional Device
- 6. Feature
- 7. TRS
- 8. ARS
- 9. Private Network
- 10. CO & Incoming Call
- 11. Maintenance

UM Configuration

Network Service

Complete Maintenance tools and System Master/Slave structure can be seen

All System Settings can be changed to enable complete system configuration

For details of what can be changed via an Installer profile, refer to the PC-Programming Guide

USER PROFILES COMPLETE

Section - 5

DSP RESOURCES



Contents

- 1.1 Overview**
- 1.2 DSP Resource Capacity
- 1.3 DSP Resource Usage
- 1.4 DSP Usage – Summary

- 2.1 DSP Resource Advisor**
- 2.2 DSP Resource Reservation
- 2.3 DSP Usage Graph

1.1 Overview

To digitally process telephone calls, the PBX must use a certain number of DSP (Digital Signal Processing) resources.

DSP resources are provided by the DSP cards installed in the PBX.

Since the DSP resources are limited, no further operations (e.g., telephone calls, playing an OGM) can be performed if all resources are in use.

The following basic operations require DSP resources.

- IP extension call (To Trunk)
- IP trunk call (To Ext)
 - Calls via IP-CS (Does not support P2P)
- Conferencing
- Accessing the Unified Messaging system (including recording calls)
- OGM playback
- Echo canceller (for trunk-to-trunk analogue calls)

Note.

For IP Ext/Trunk calls, the required DSP resource depends on the codec (Compression) used (G.711 or G.729) .

The Higher the Compression (G.729), the more DSP resource is required (but less Bandwidth)

The Lower the Compression (G711), the less DSP resource is required (but more Bandwidth)

P2P Calls (within the same P2P Group) can be considered NOT to use DSP resources.

DSP Resources are not 'shared' between Master/Slave systems – Calculate Resources for each PBX individually.

1.2 DSP Resource Capacity

Each optional DSP card provides a number of resources that can be called upon to provide VOIP processing when the system requires them.

(The NS1000 requires at least 1 DSP card to be installed for it to operate.)

Model	Card Name	Resources
KX-NS0110	DSP-S	63
KX-NS0111	DSP-M	127
KX-NS0112	DSP-L	254

(Up to 2 DSP cards can be installed in each NS1000, therefore the maximum DSP resource available per system is 508)

In Addition to the above 'Free' Resources, 2 Resources are always reserved for UM Tones – not programmable.

1.3 DSP Resource Usage (1)

The required DSP Resources are calculated using the following values

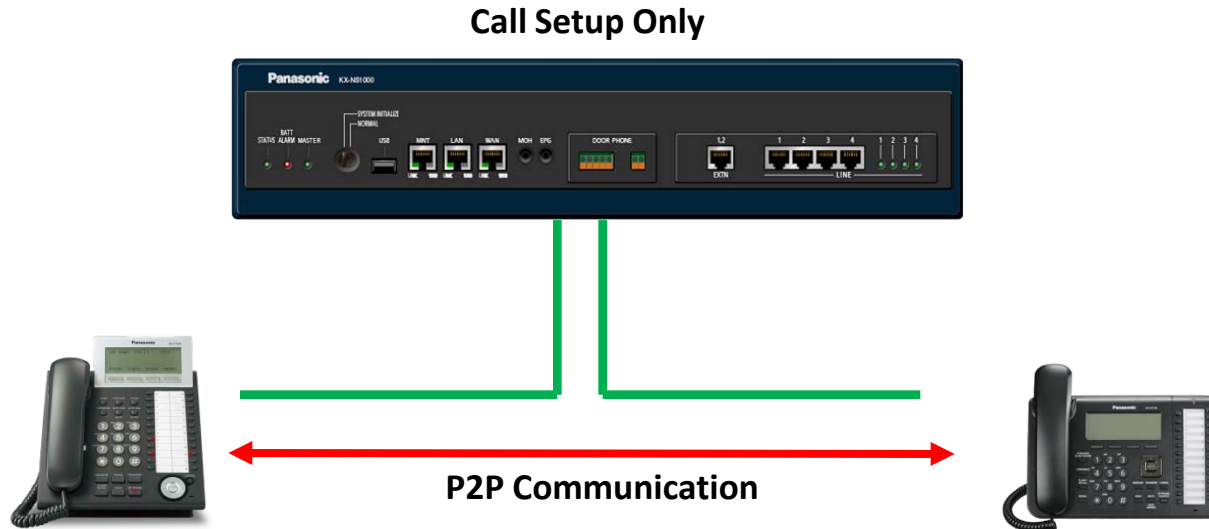
Service/Feature	Required DSP Resource
Trunk (G.729)	2.2
Trunk (G.711)	1
Legacy Trunk (ISDN/Analogue)	1
Extension (G.729)	2.2
Extension (G.711)	1
IP-CS (G.729)	2.2
IP-CS (G.711)	2
Unified Messaging (UM) *1	1.3
2-Way Recording *2	2.3
OGM	2
Conferencing	0.5

*1 This does not include the DSP cost of the IP-PT/Trunk using the UM Service.

*2 Two-Way recording also requires a Conference Trunk

1.3 DSP Resource Usage (2)

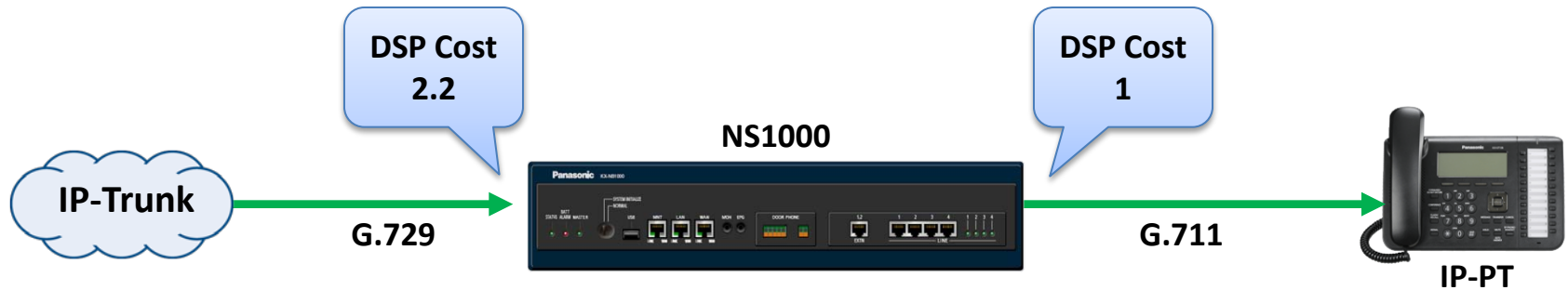
IP Phones – “P2P”



1. DSP is not used at any stage of a P2P call – DSP function is taken care of within handset itself once connected.
2. If selected compression method of phones differs, the handsets negotiate the lowest bandwidth codec of the two:
(G729 > G711 > G722)
3. This applies to both SIP and IP-PT types - makes no difference

1.3 DSP Resource Usage (3)

IP-Trunk to IP-Extension

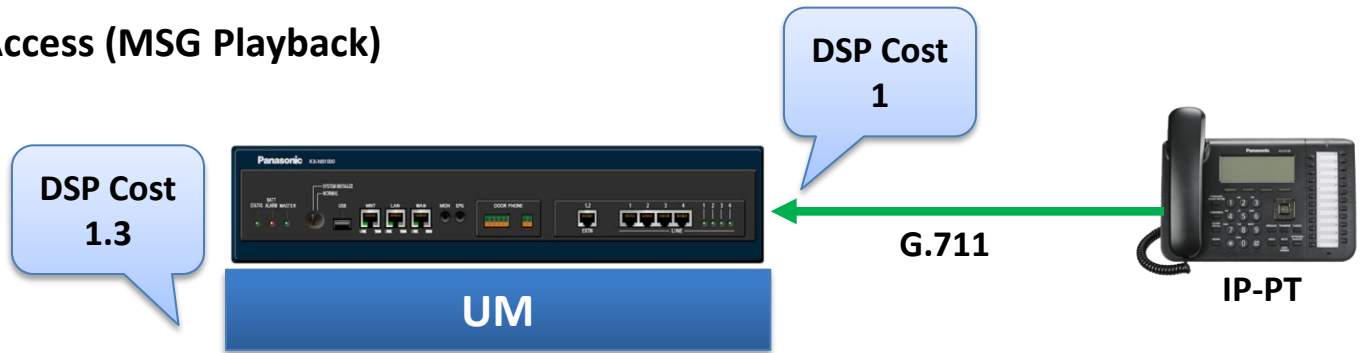


From the previous Resource table, we can calculate the DSP Resources required for the above call scenario:

$$2.2 + 1 = 3.2 \text{ DSP Resources Required}$$

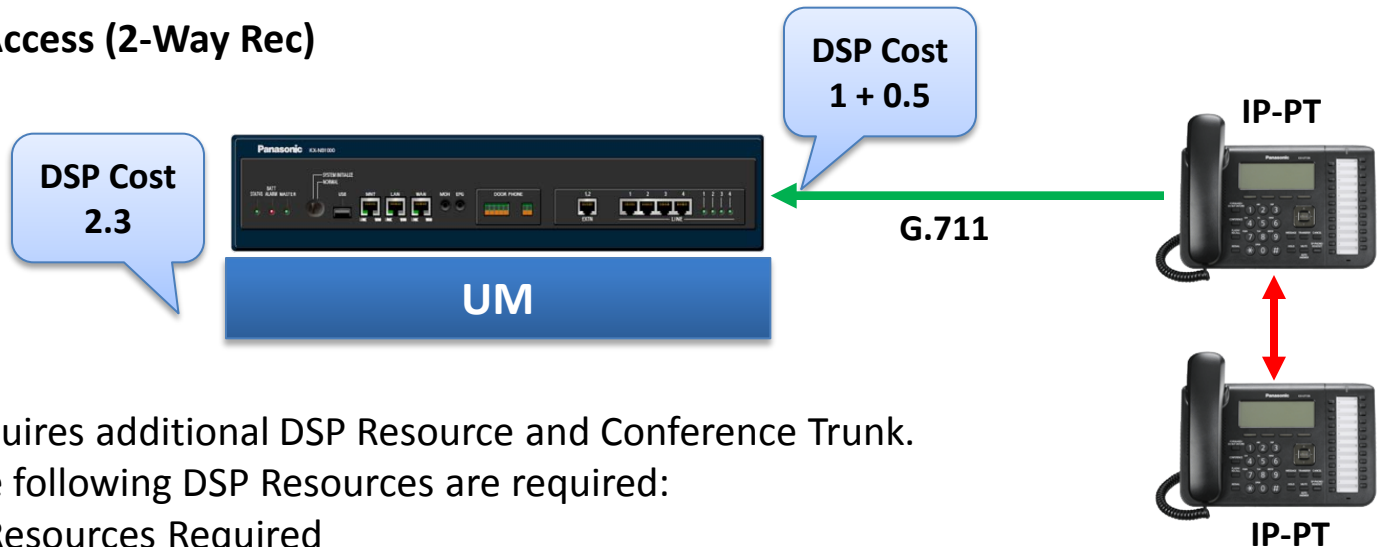
1.3 DSP Resource Usage (4)

Unified Messaging Access (MSG Playback)



Recording or playing back messages from the UM requires DSP Resource. For this example, the following DSP Resource is required:
 $1.3 + 1 = 2.3$ DSP Resources Required

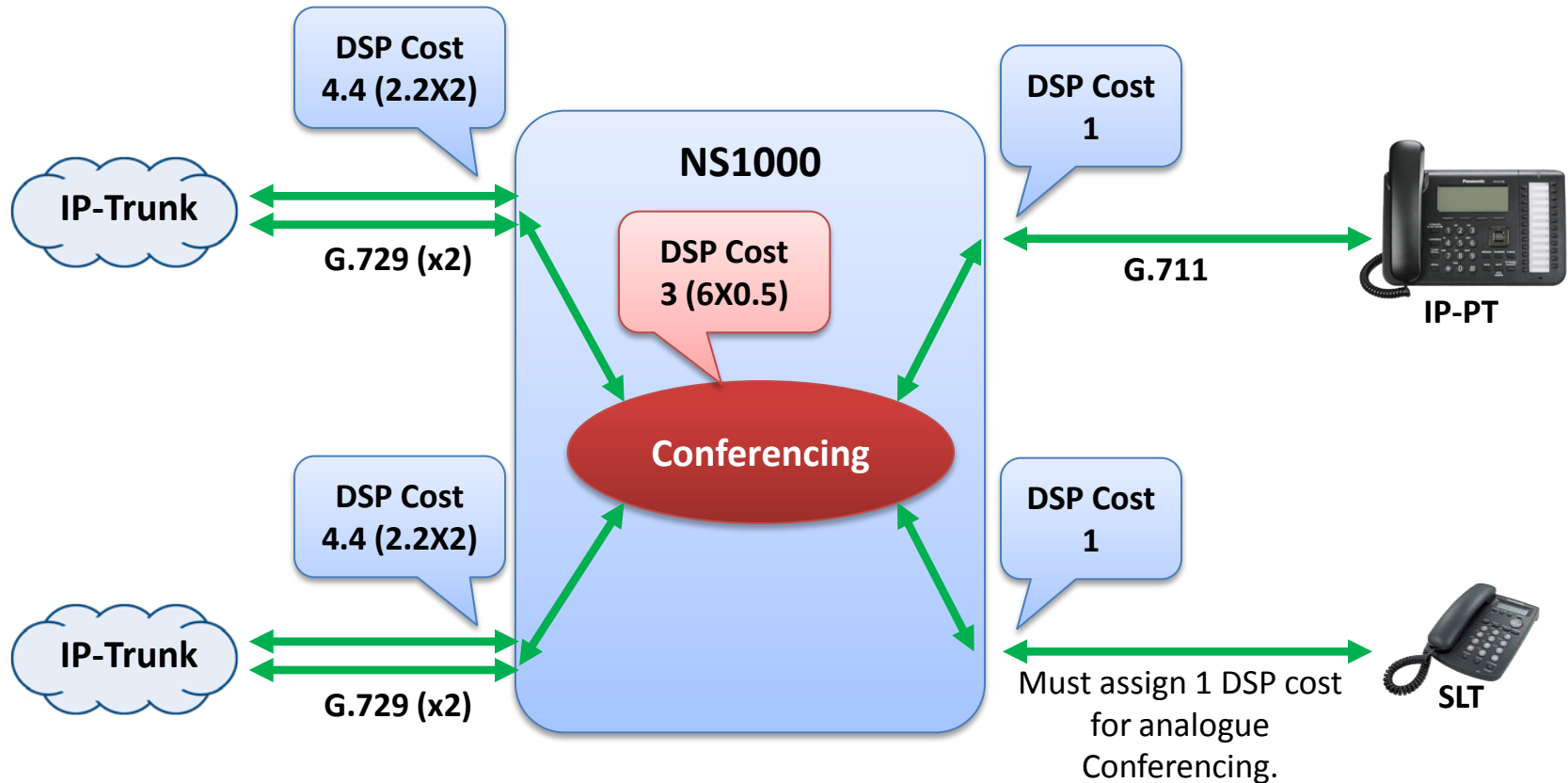
Unified Messaging Access (2-Way Rec)



2-Way Recording requires additional DSP Resource and Conference Trunk. For this scenario, the following DSP Resources are required:
 $2.3 + 1.5 = 3.8$ DSP Resources Required

1.3 DSP Resource Usage (5)

Conferencing (Example – 6pty conference).



A conference requires additional resources to handle multiple voice channels.

Also, in standard two-way conversations, analogue lines do not require any DSP resources, but in a conference they do.

In addition, IP trunks in a conference require additional DSP resources.

For this example the number of required resources are $4.4 + 4.4 + 3 + 1 + 1 = 13.8$.

1.4 DSP Resource Usage - Summary

DSP Resource Summary

- Accurate DSP selection is only possible when you know the maximum concurrent scenarios that will be required by the system
- In most cases, IP phones used in the office will use G722 for extension to extension calls and G711 for ISDN trunk calls so DSPs are used lightly.
- Typically only remote IP phones would use G729 mode. (Low Bandwidth)
- SIP trunk providers can use either G711 or G729 – available bandwidth on the internet/broadband service will dictate if G711 or G729 is used.
- Use the NS1000 DSP Resource tool and Usage graph to guide you to the required DSP card.

NS1000

DSP RESOURCE ADVISOR

2.1 DSP Resource Advisor (1)

DSP Resource Advisor

The WebMC provides a tool for calculating the number of resources required for given scenarios. The Installer provides information such as the number of ports/resources required (e.g., 16 extension ports using the G.729 codec) and the expected load (e.g., 50%busy), and the resource advisor calculates the number of DSP resources required to meet those conditions.

Example: Call Centre

In a call centre, both the number of trunks and number of extensions required are likely to be high. Also, since employees are constantly receiving calls, the system load will be high. Additionally, calls are often recorded at call centers to provide quality-of-service monitoring.

Service	Ports	Busy Ratio (%)
Trunks (G729)	8	50
Trunks (G711)	128	80
Exts (G729)	32	50
Exts (G711)	128	80
IP-CS (G729)	8	50
Unified Messaging (UM)	8	-
2-Way Recording	12	-
OGM	4	-
Conference	12	-

2.1 DSP Resource Advisor (2)

Example: Call Centre (Cont..)

The Web MC DSP Resource advisor can be used to select the necessary DSP combination

'SETTINGS' -> PBX Configuration -> 1. Configuration ->
5. DSP Resources -> 1. Setting

The screenshot displays the Web MC DSP Resource Advisor interface. The navigation tree on the left is expanded to show 'PBX Configuration' -> '1. Configuration' -> '5. DSP Resources' -> '1. Setting'. The main panel shows the following configuration options:

- Option DSP Power: 252
- Option DSP #1: DSP-L
- Option DSP #2: None

Services	Ports
VoIP (G.711)	40
Unified Message	5
Two-way Recording	5
OGM	10
Conference trunks	10
Free resources (G.711)	176

The 'DSP resource advisor' button is highlighted, and a callout box indicates 'Select DSP Resource Advisor'. Below the button, there is a section for 'Select a time to apply the set values' with radio buttons for 'Apply now' (selected) and 'Set', and input fields for 'Date' and 'Time'. At the bottom right, there are 'OK', 'Cancel', and 'Apply' buttons.

2.1 DSP Resource Advisor (3)

Example: Call Centre (Cont..)

Enter the Scenario details;

Select the desired DSP combination to give you enough DSP Resource.

Services	Codec	Ports	Busy Ratio (%)	Power	
Voice Call	Trunk	G.729	8	50	8.8
		G.711	128	80	102.4
		TDM			
	Extension	G.729	32	50	35.2
		G.711	128	80	102.4
		IP-CS (G.729)	8	50	8.8
VoIP Total				257.6	

Check there is sufficient 'Free' Resource

Services	Ports	Power
Unified Message	8	10.4
Two-way Recording	12	27.6
OGM	4	8.0
Conference	12	6.0
Free Resource		5.4

In this example, it can be seen that both a DSP-L (252) and DSP-S (63) will be required. (Total 315 Available Resources)

2.1 DSP Resource Advisor (4)

Example: Call Centre (Cont..)

It is possible to Apply the necessary DSP Reservation scheme from this scenario also:

The screenshot shows the 'DSP Resource Advisor' window. It contains a table of services and their resource requirements, and a section for the 'Result of resource allocation'.

Services	Detail	Ports	Power
Unified Message	Call Recording	8	10.4
	Two-way Recording	12	27.6
OGM	OGM	4	8.0
Conference	Conference	12	6.0
Free Resource			5.4

Recommended Resource Reservation can be applied to the system

Result of resource allocation :

VoIP (G.711)		258
Unified Message	Two-way Recording	12
OGM		4
Conference trunk		12
Free (G.711)		5

Apply result of resource allocation to setting

Apply

Click 'Apply'

2.2 DSP Resource Reservation (1)

Specific resources can be reserved to guarantee a minimum level of service.

Resources reserved for a particular service (e.g., conferencing) cannot be used for another service (e.g., Unified Messaging). i.e. You may want to reserve resources for OGM (Outgoing Message) to ensure that recorded messages can be played to incoming callers.

The resources can be reserved for the following types of services:

- VoIP (G.711)
- Conference trunk
- Unified Messaging
- Two-way Recording
- OGM

Example

Service	Simultaneous Operation
VoIP Call (G711)	40
Unified Messaging	5
2-Way Recording	3
OGM	10
Conference Trunk	10
<u>UM Tone</u>	<u>2</u>

NB: UM Tone (required for 2-way recording) is reserved automatically (cannot change)

2.2 DSP Resource Reservation (2)

DSP Resource Reservation Screen

'SETTINGS' -> PBX Configuration -> 1. Configuration -> 5. DSP Resources -> 1. Setting

The screenshot shows the 'Setting' screen for DSP Resources. The left sidebar contains a tree view with 'PBX Configuration' expanded to '5. DSP Resources' and '1. Setting' selected. The main area has the following fields and table:

Option DSP Power: (Annotated as 'Available DSP Resource')

Option DSP #1: DSP-L
Option DSP #2: None

Services	Ports
VoIP (G.711)	40
Unified Message	5
Two-way Recording	5
OGM	10
Conference trunks	10
Free resources (G.711)	176

(The table is annotated as 'DSP Resource Reservation + 'Free' Resource')

DSP resource advisor

Select a time to apply the set values

Apply now
 Set

Date: Time:

(This section is annotated as 'Select the time to apply the desired reservation')

Click OK

Buttons:

2.3 DSP Usage Graph

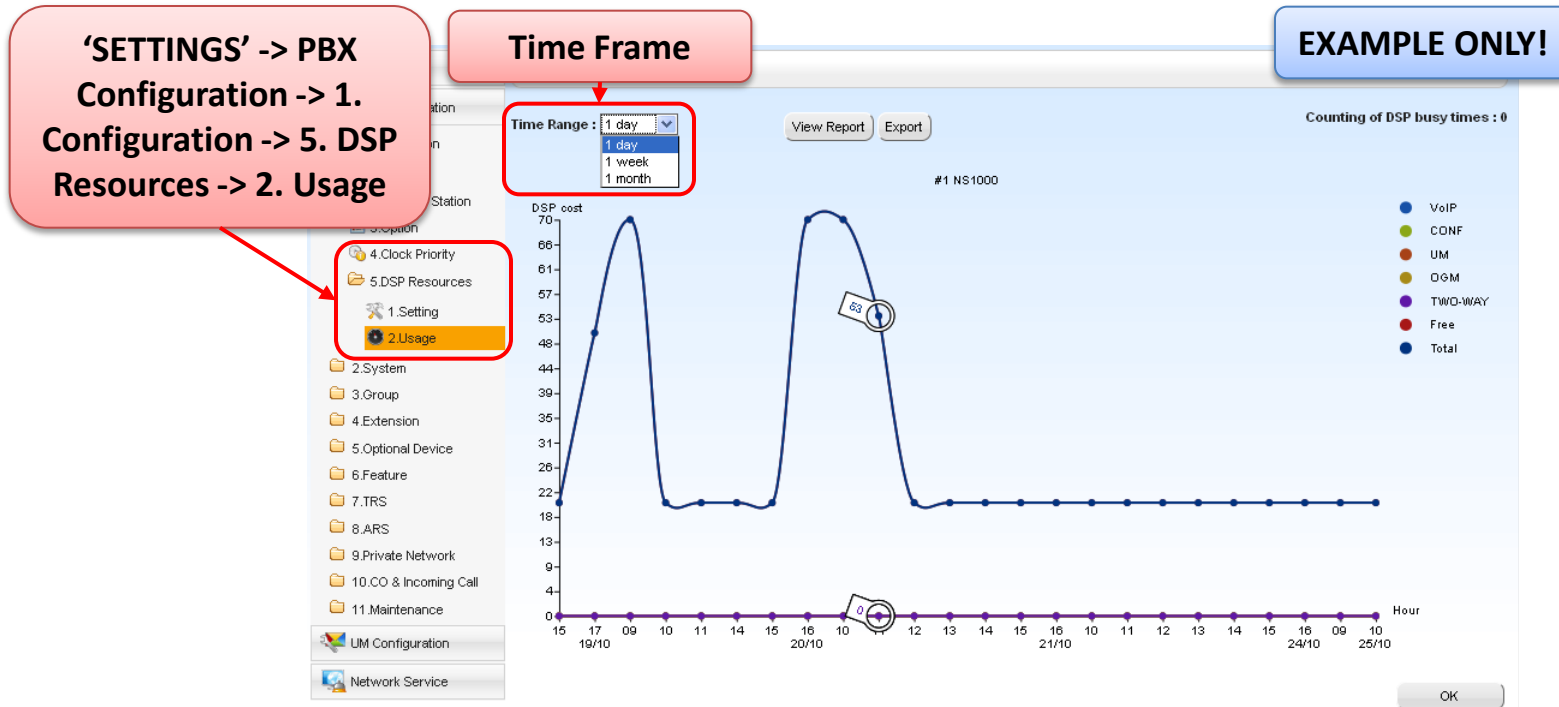
DSP usage graph

The PBX keeps a record of the maximum DSP usage per hour for each of the following features/services.

- VoIP (IP trunk, IP extension and IP-CS usage)
- Conference
- Unified Messaging
- OGM
- Two-way recording

This data is displayed via the WebMC and shows trends in DSP usage over time, as well as the number of calls / operations abandoned due to lack of resources. (Up to 30 days usage is logged)

The graph allows you to confirm that sufficient resources are available, or if a larger DSP is required.



DSP RESOURCES COMPLETE

Section - 6

NETWORKING



Contents

Chapter 1 Introduction

1-1. Introduction

Chapter 2 One-Look Networking

2-1. One-Look Networking Concept

2-2. Main One-Look Features

2-3. Master and Slave Unit

Chapter 3 One-Look Networking: System Design

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4-1. Peer to Peer Communication

4-2. Peer to Peer Group Setting

Chapter 5 QSIG Networking

5-1. QSIG Networking Overview

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Chapter 1

INTRODUCTION

1-1. Introduction

KX-NS1000 provides two methods of private networking:

1. One-Look Networking
2. QSIG Networking (via ISDN and H.323)

This module will focus on the new NS1000 feature “One-Look Networking”.

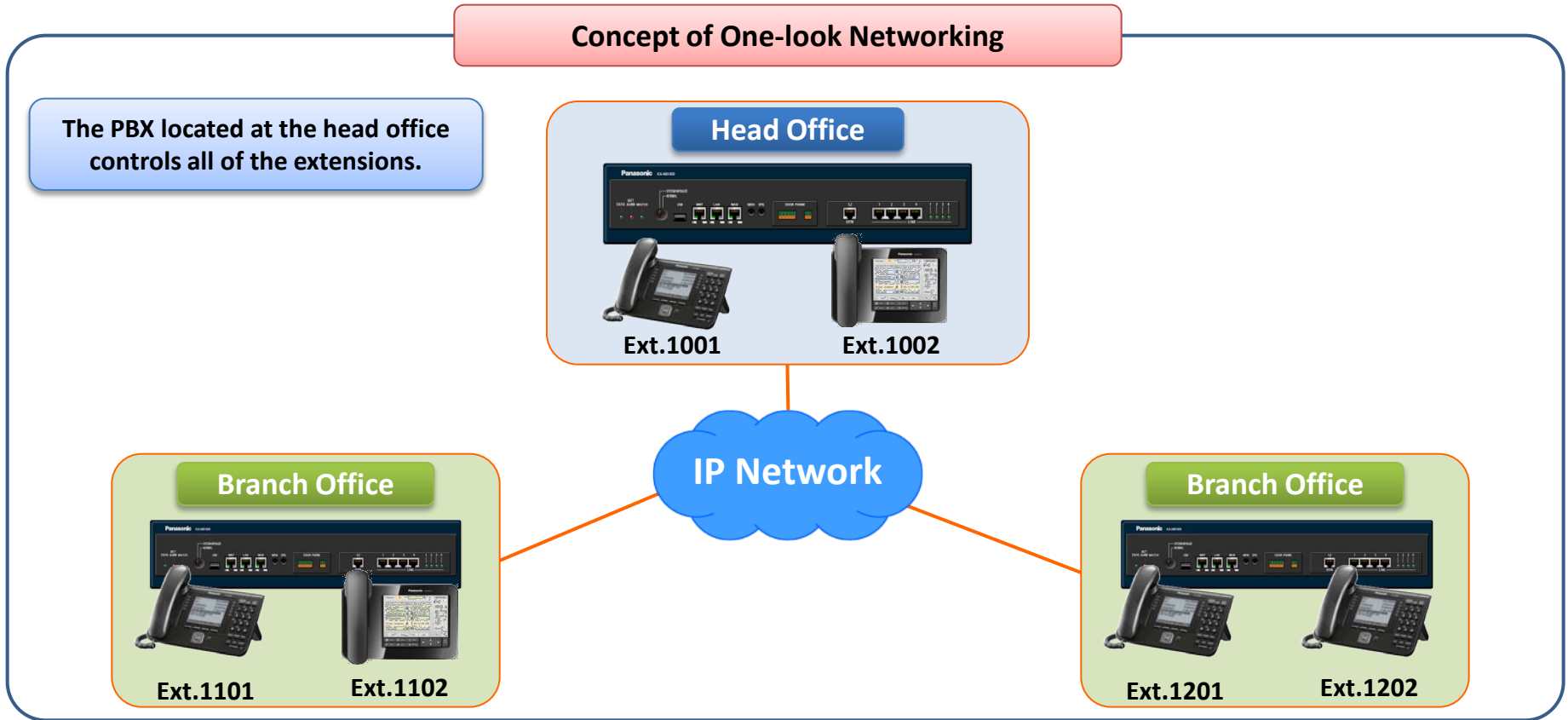
- The main benefits of One-look networking are;
 - It looks like one PBX system, even though two or more PBXs are networked together.
 - The system can be expanded easily via a Web based maintenance console.
 - No additional servers are required for call control.
- The main differences between “One-look” and “QSIG” Networking are the following;
 - For “One-look”, the ‘Master’ PBX controls all extensions within the network.
In a “QSIG” network, each PBX controls its own extensions.
 - For “QSIG”, each PBX needs to be programmed individually.
For “One-look”, almost all settings are made in the master PBX only.
 - “QSIG” is suitable for connecting the NS1000 to the existing KX-TDE/NCP systems, or when there are 17 or more NS1000s in the network.
 - “One-Look” is available for up to 16 connected NS1000 systems (Max)

Chapter 2

ONE-LOOK NETWORKING

2-1. One-look Networking Concept

The system looks like one PBX, even when connected through an IP Network

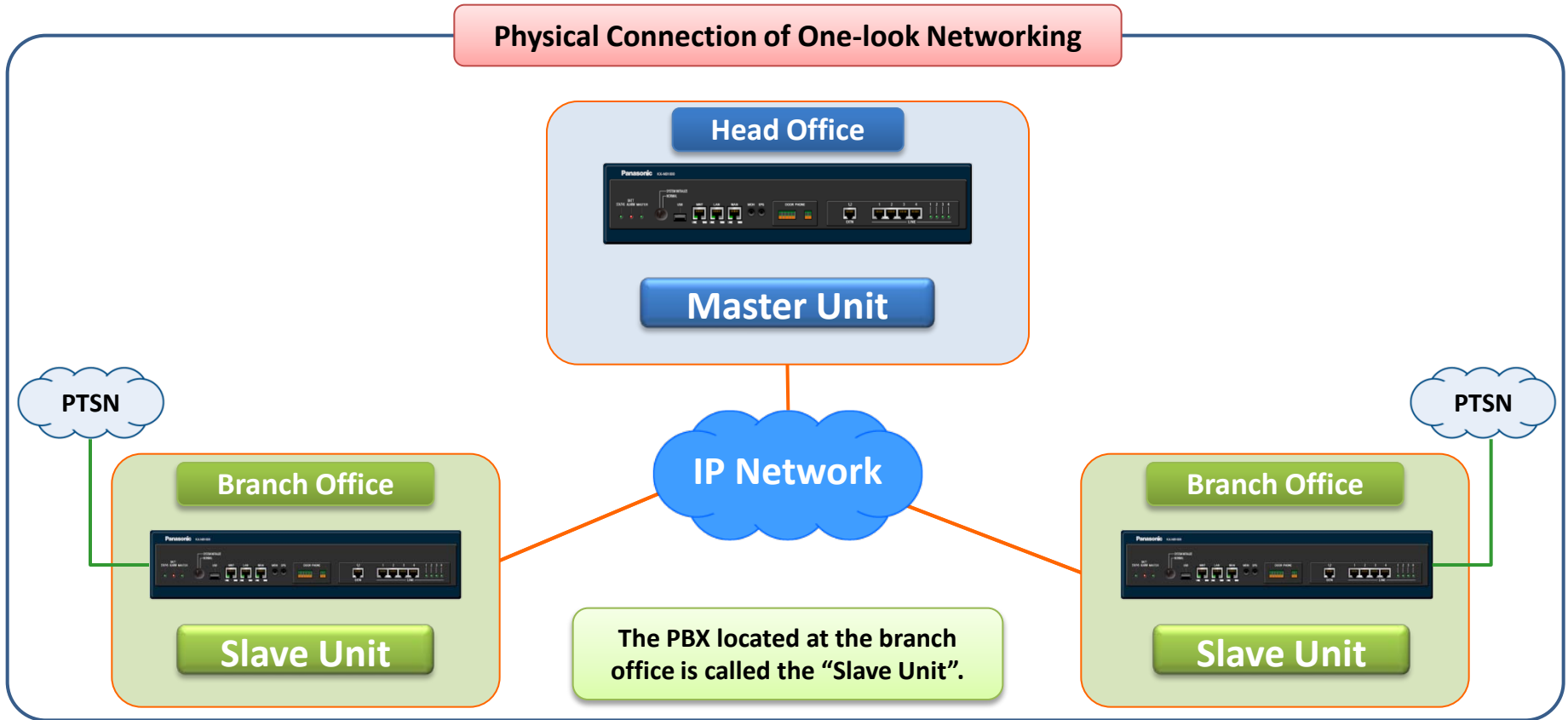


All extensions within the One-look Network behave as if they were part of the Main Office, regardless of their actual location.

* The network can be easily expanded with simple programming.
- up to 1,000 extensions can be configured easily.

2-1. One-lock Networking Concept

The Master Unit controls one or more Slave Units (15 Max).



If 'Slave' units are installed in Branch Offices, local calls can be made using local trunks. The Slave units can also support additional extensions and UM features.

NB: System redundancy is not supported, if the Master unit fails, calls will not be possible via the Slave units (TBC)

2-1. One-look Networking Concept

Specifications

The maximum number of units within an one-look networking is 16.

- Master : 1
- Slave : 15

The maximum number of extensions within an one-look networking is 1,000.

- Max. 1,000 extensions / networked system
- Max. 640 extensions * / site (unit)

SIP Phone : 640

- IP-PT and IP Softphone : 128
- Extension (SLC on Physical Extension Card) : 2

No external (additional) server for network call control is required.

- Major competitors need server for 5 or more PBXs.

The one-look network should be consist of the PBXs which have the same model suffix of model number (e.g., KX-NS1000NE), This information can be found on the name plate).

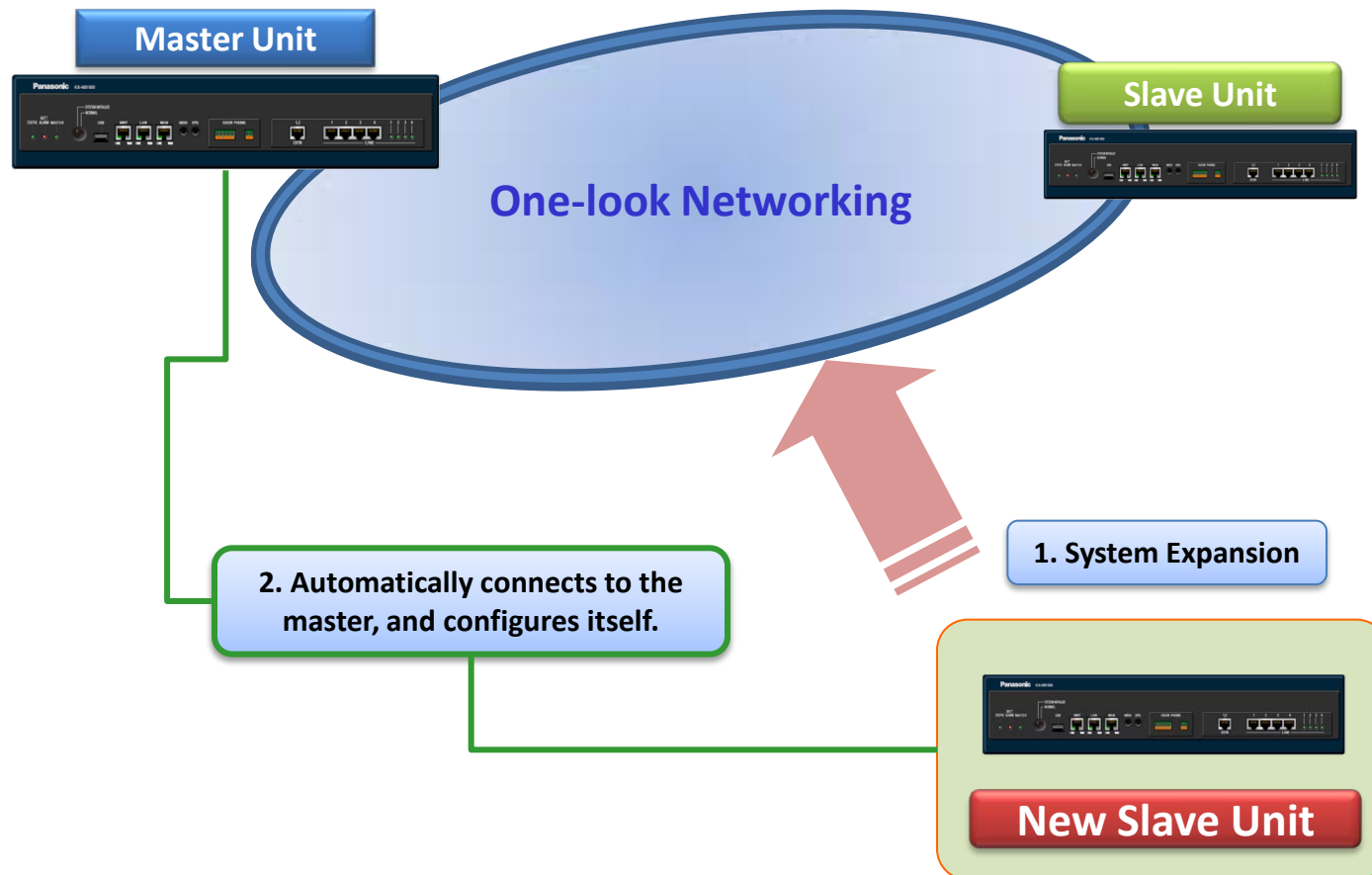
2-2. Main 'One-Look' Features

A 'One-Look' system can be expanded easily without complicated programming.

Dealers can easily add additional slave units.

Slave units automatically connect to the Master and configure themselves accordingly.

Configuration is simple compared NCP/TDEs, (GW no. settings, DN2IP settings, Hunt pattern settings, etc.).

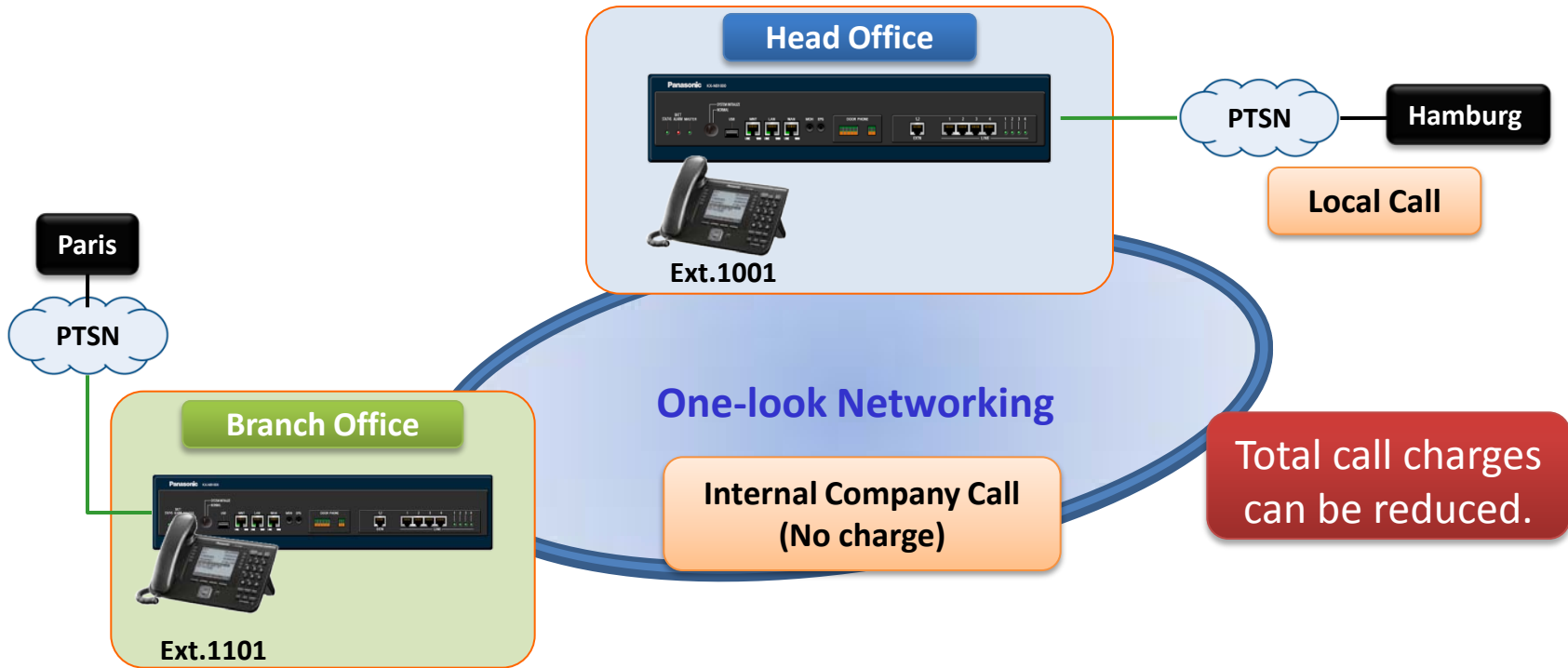


2-2. Main 'One-Look' Features

Trunk calls via Remote (Slave) Units.

An extension user can access trunks connected to remote units thus reducing call costs.

An International call can be reduced to Local Call charges.



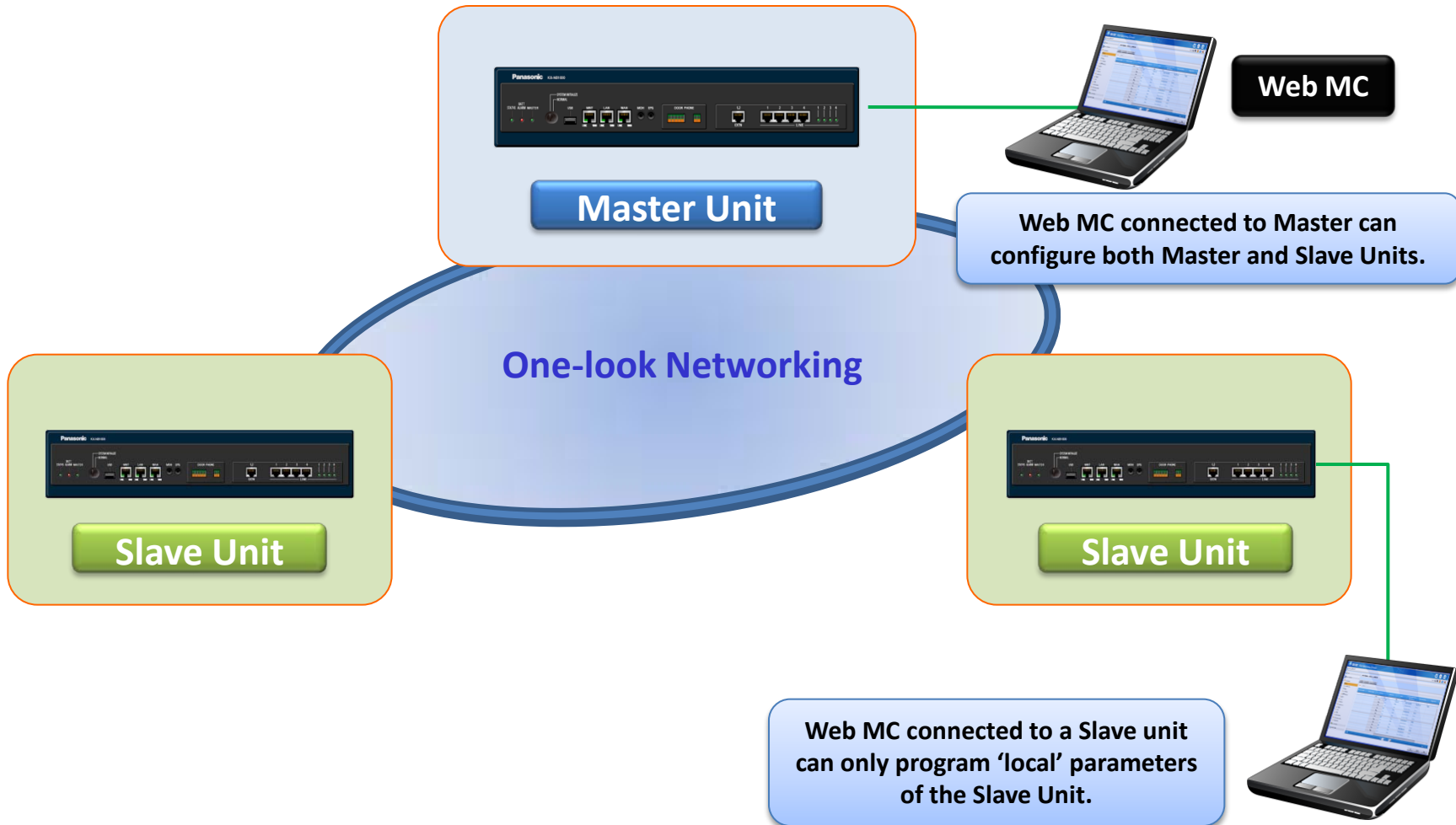
Through ARS programming, outgoing calls can be routed so as to reduce call charges.

The Master unit has the ARS tables (System Common Setting) and controls all outgoing calls.

2-2. Main 'One-Look' Features

Simplified Programming via embedded Web Maintenance tool (WebMC)

The Web MC connection to the Main unit can be used to program all the Slave Units.



2-3. Master Unit and Slave Unit

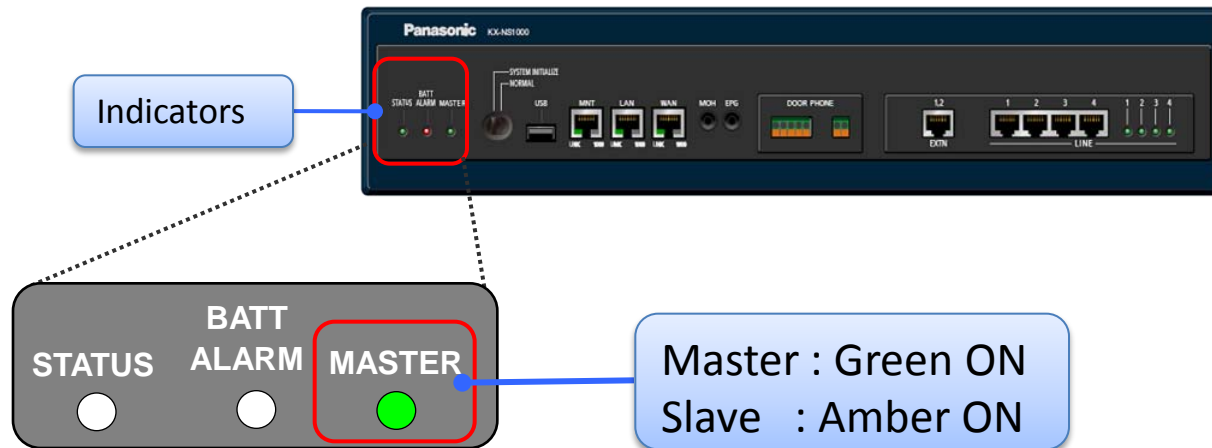
Master and Slave units are the same physical PBX model.

The PBX mode (Master or Slave) is set via system programming (Initialization).

The key parameters assigned to each unit are:

- Master : PBX Type=Master + IP address
- Slave : PBX Type=Slave + IP address + IP address of the master unit

The PBX mode (Master or Slave) is indicated by the (MASTER) LED on the front of the unit.



2-3. Master Unit and Slave Unit

Common and Individual Unit Settings

To configure One-Look Networking, some settings must be configured for each individual unit.

Main Settings

Common Settings (Master)	Individual Settings (Master & Slave)
<ul style="list-style-type: none">- Numbering Plan- COS- Group Settings- Extension Settings- Co Line Settings- DDI/DID Table- TRS- ARS- etc.	<ul style="list-style-type: none">- Slot (Installing Physical and Virtual card)- Card and port property- IP Terminal Registration- Network service (IP address, DHCP server, etc.)- E-mail Notification- Data backup / restore- etc.

“Common settings” include Numbering Plan, COS, Group settings, etc.

“Individual Settings” include Installing Physical and Virtual cards, IP terminal registration, etc.

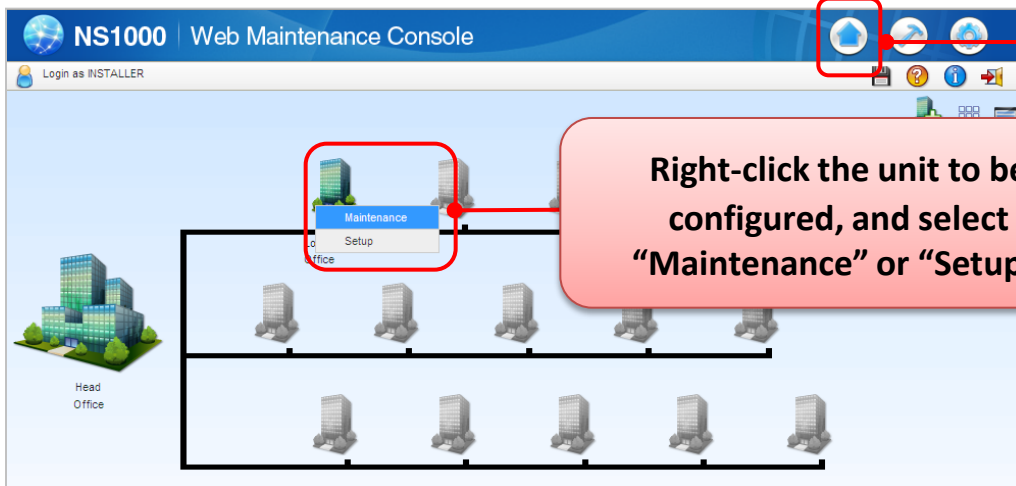
2-3. Master Unit and Slave Unit

How to configure each individual unit

To configure each unit, select the unit via the Web MC.

There are two ways to select the desired unit

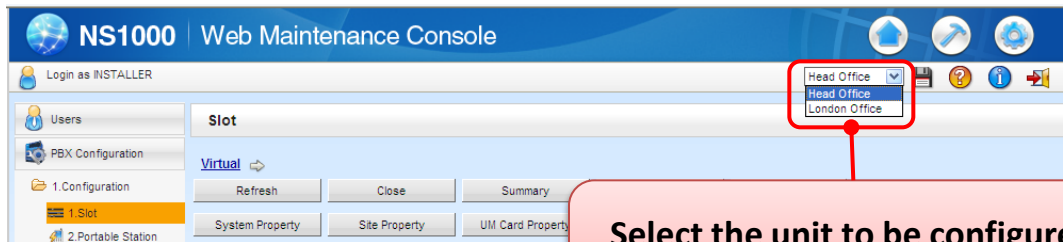
1



Via 'Home' Screen Icon

Right-click the unit to be configured, and select "Maintenance" or "Setup".

2



Select the unit to be configured from the pull-down menu.

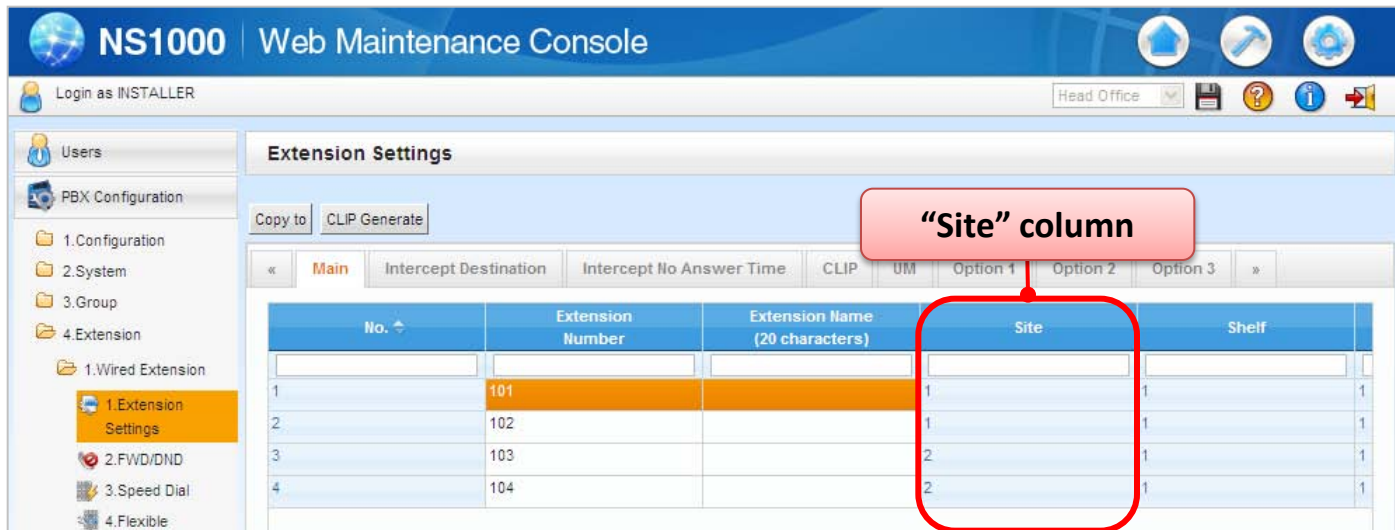
2-3. Master Unit and Slave Unit

The Site ID is used for “Common settings”.

The Site ID is assigned to each unit via the “Add Site” Wizard.

On the PBX setting screen, the Site ID is used instead of “Site name”.

Extension Setting example



The screenshot shows the NS1000 Web Maintenance Console interface. The main content area displays the "Extension Settings" table. The table has columns for "No.", "Extension Number", "Extension Name (20 characters)", "Site", and "Shelf". The "Site" column is highlighted with a red box and labeled "Site" column. The table contains the following data:

No.	Extension Number	Extension Name (20 characters)	Site	Shelf
1	101		1	1
2	102		1	1
3	103		2	1
4	104		2	1

- * The “Site ID” is used for “CO Line Settings”, “DIL Table & port Settings”, “Door-phone”, “External Relay”, “External Sensor”, etc.
- * To confirm the Site ID, click “List View” on the Home screen.

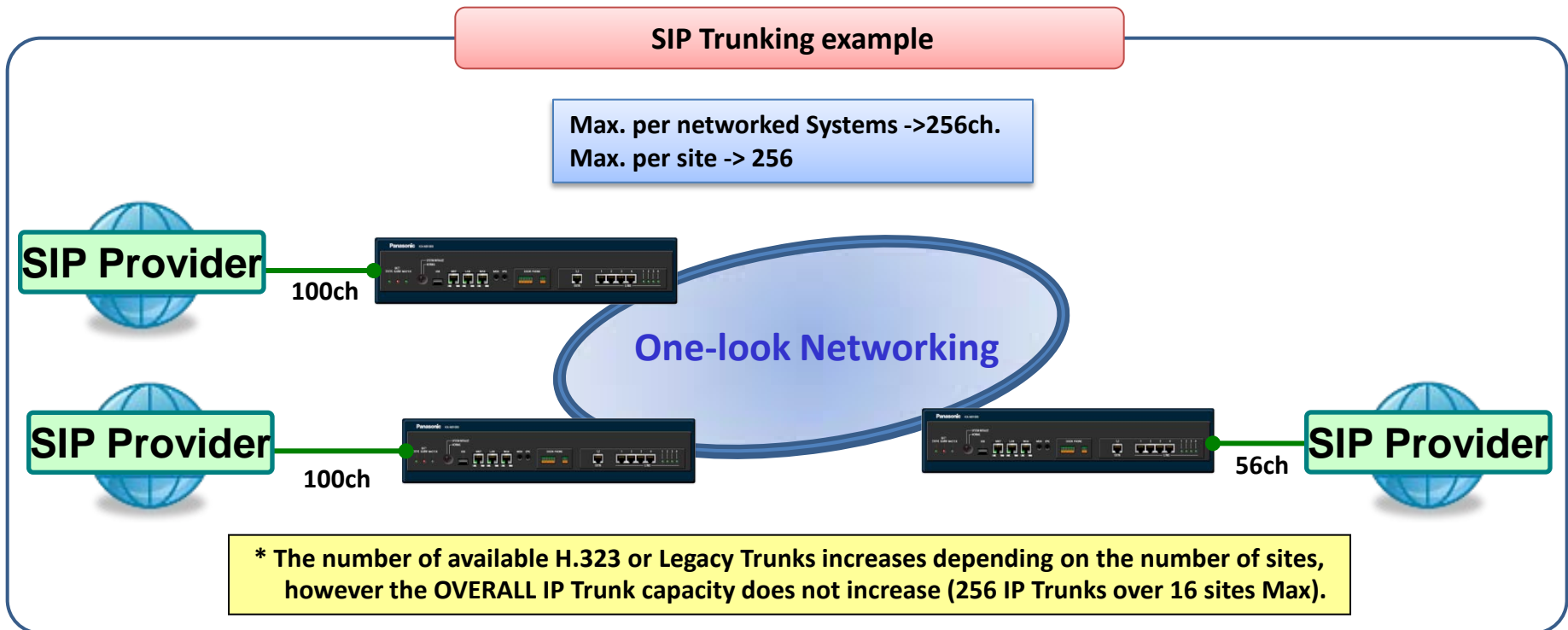
Chapter 3

ONE-LOOK NETWORKING: SYSTEM DESIGN

3-1. IP Capacity Expansion - IP Trunks

The overall IP trunk capacity does not increase in proportion to the number of sites.

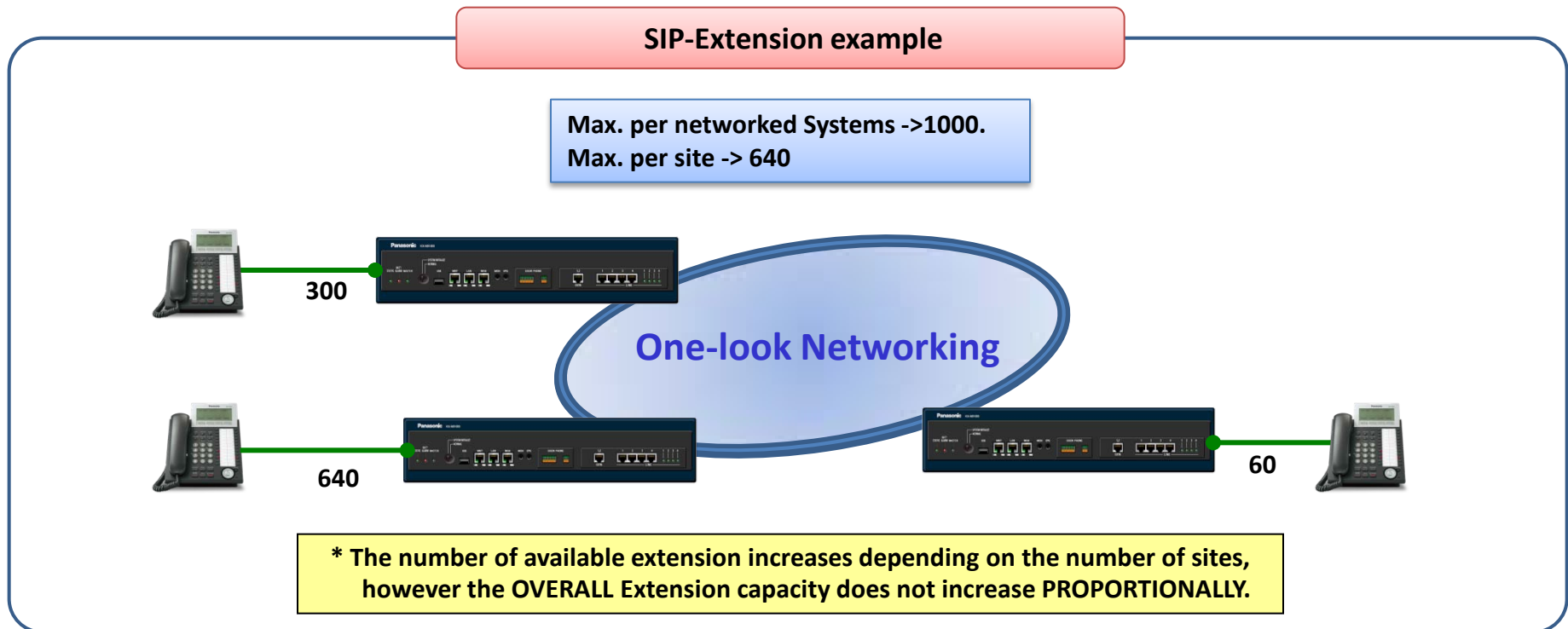
Type		Stand Alone System	Networked System
Total Number of Trunks		256	600
Trunk (Virtual Trunk Card)	Trunk (Virtual Trunk Card)	256	256
	H.323 Trunks	48	96
	SIP Trunks	256	256
Trunk (Physical Trunk Card (PRI30))		30	480



3-2. IP Capacity Expansion - IP Extensions

The IP extension capacity does not increase in proportion to the number of sites.

Type	Stand Alone System	Networked System
Total Number of Extensions	640	1,000
Extension (Virtual Extension Card)	640	1,000
IP-PT and IP Softphone	128	1,000
SIP (UT & 3 rd Party) Phone	640	1,000
Extension (Physical Extension Card (SLC))	2	32



Chapter 4

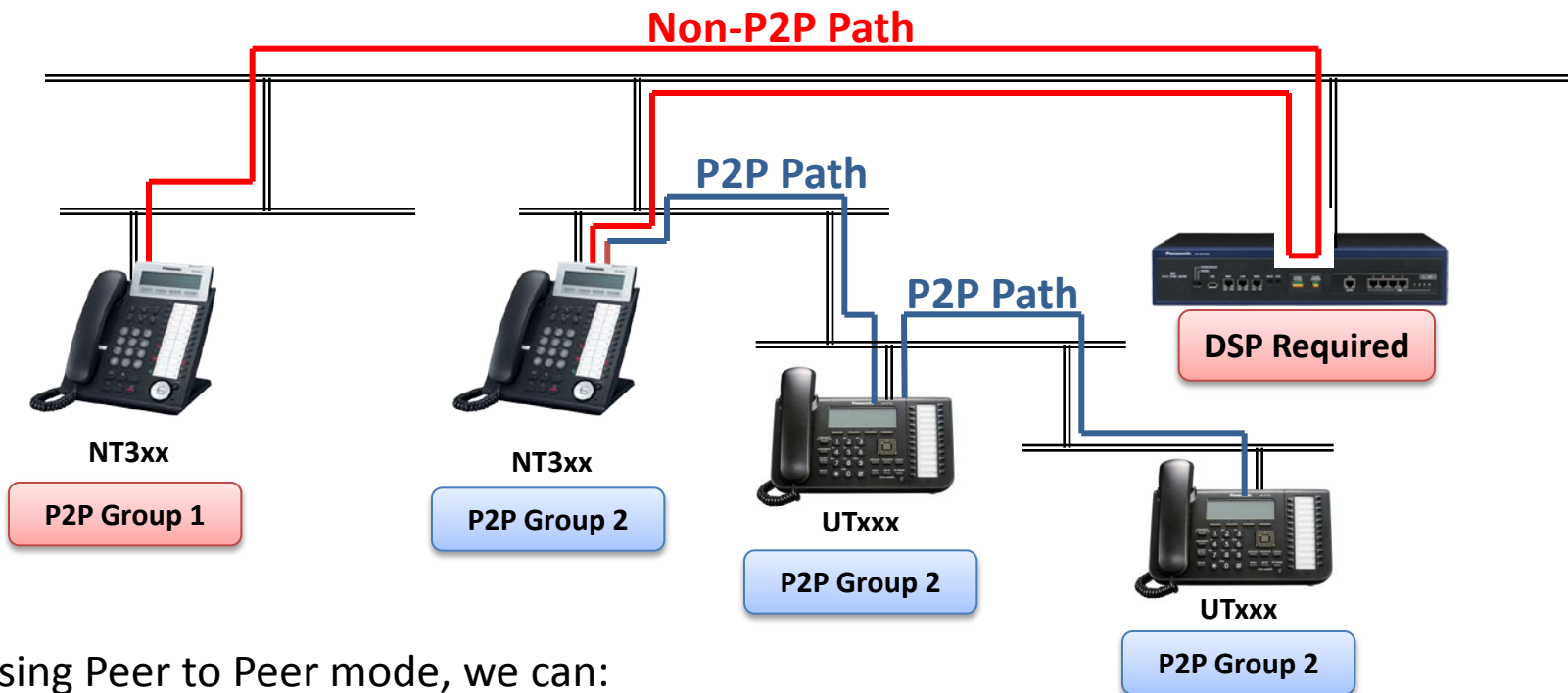
PEER – TO- PEER (P2P) NETWORKING

4-1. Peer to Peer (P2P) Communication

Peer to Peer (P2P) Communications.

The NS1000 automatically establishes peer-to-peer communication between peer-to-peer compatible IP extensions (i.e., NT3xx and UT series) that belong to the same P2P group.

Non P2P Calls require DSP Resource.



By using Peer to Peer mode, we can:

- Potentially reduce network wide traffic to the PBX
- Improve voice quality for P2P calls (By using G722 codec – Only supported for P2P)

Note: P2P cannot be disabled but, using P2P Group function, phones assigned to different P2P Group can make non P2P calls.

4-2. P2P Group Setting

The P2P Group for IP-Extensions can be set in the appropriate Port-Properties screen;

'Settings' -> PBX Configuration -> Slot
-> Virtual Cards -> Port Properties

The screenshot shows the 'Port Property - Virtual IP Extension' configuration window. The left sidebar contains a tree view with 'PBX Configuration' selected, and '1 Slot' highlighted. The main area displays a table with the following columns: Extension Number, Extension Name (20 characters), Connection, Status, IP Phone Registration ID (MAC Address), Current IP Address, Program Ver., and P2P Group. The first row (extension 101) is highlighted, and its 'P2P Group' is set to '1'. A red box highlights the 'P2P Group' column header and the value '1' in the first row. Another red box highlights the 'Settings' icon in the top right corner of the application window.

Extension Number	Extension Name (20 characters)	Connection	Status	IP Phone Registration ID (MAC Address)	Current IP Address	Program Ver.	P2P Group
101		INS	Registered	00:80:F0:30:07:AC	192.168.0.150	00.041	1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1
		Fault	None	00:00:00:00:00:00	0.0.0.0		1

The P2P Group for the desired extension can be set here.

NB: IP-CS do not support P2P communication, so no P2P Group setting is available for IP-CS.

Chapter 5

QSIG NETWORKING

5-1. QSIG - Overview

Connections between different PBX systems / types can be established via QSIG.

PBXs (KX-NS1000, KX-TDE, KX-NCP) can be connected to each other via ISDN private network or VoIP network (H.323), and provide QSIG features. (Programming is same as existing NCP/TDE Programming)



**When using QSIG enhanced features, KX-TDE / NCP must be with MPR software version 4.1000 or later.
When using QSIG enhanced features, Activation Keys are needed.**

Appendix 1

BANDWIDTH

Bandwidth (1/4)

Bandwidth for voice data, call control (signalling), and system control between units must be considered when site planning.

Required Bandwidth per Call for Voice : Determined by CODEC and Packet Sending Interval

CODEC	Packet Sending Interval			
	20ms	30ms	40ms	60ms
G.711 / G.722	80kbps	74.7kbps	72kbps	69.4kbps
G.729A	24kbps	18.7kbps	16kbps	13.4kbps

Required Bandwidth per Call for Signaling

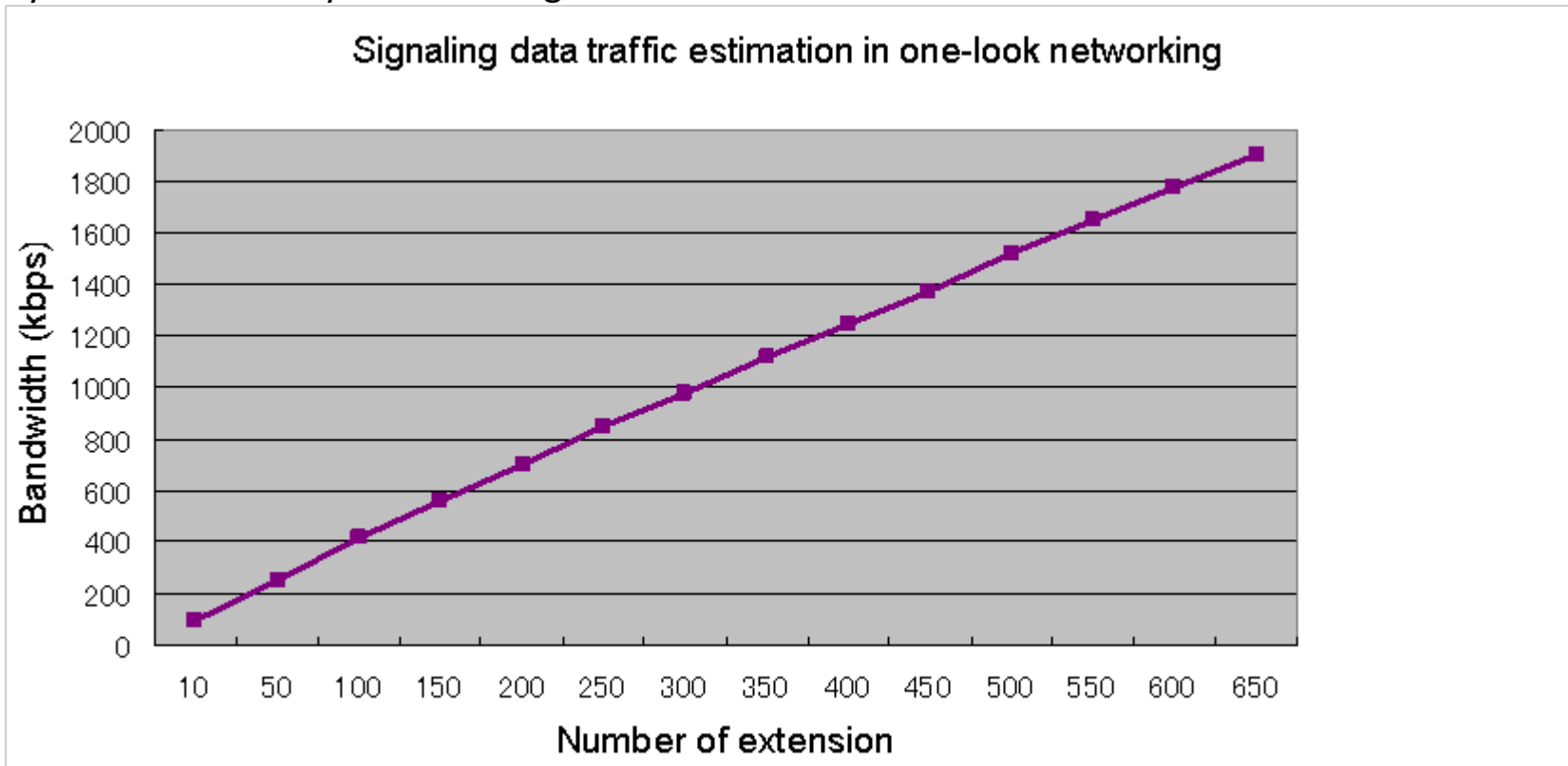
Phone Type	Required Bandwidth
IP Telephones (except SIP phones)	7.2kbps
SIP Phone	16.0kbps

NB: In addition to the above, Basic Ethernet frame, VPN headers, etc., should also be considered.

Bandwidth (2/4)

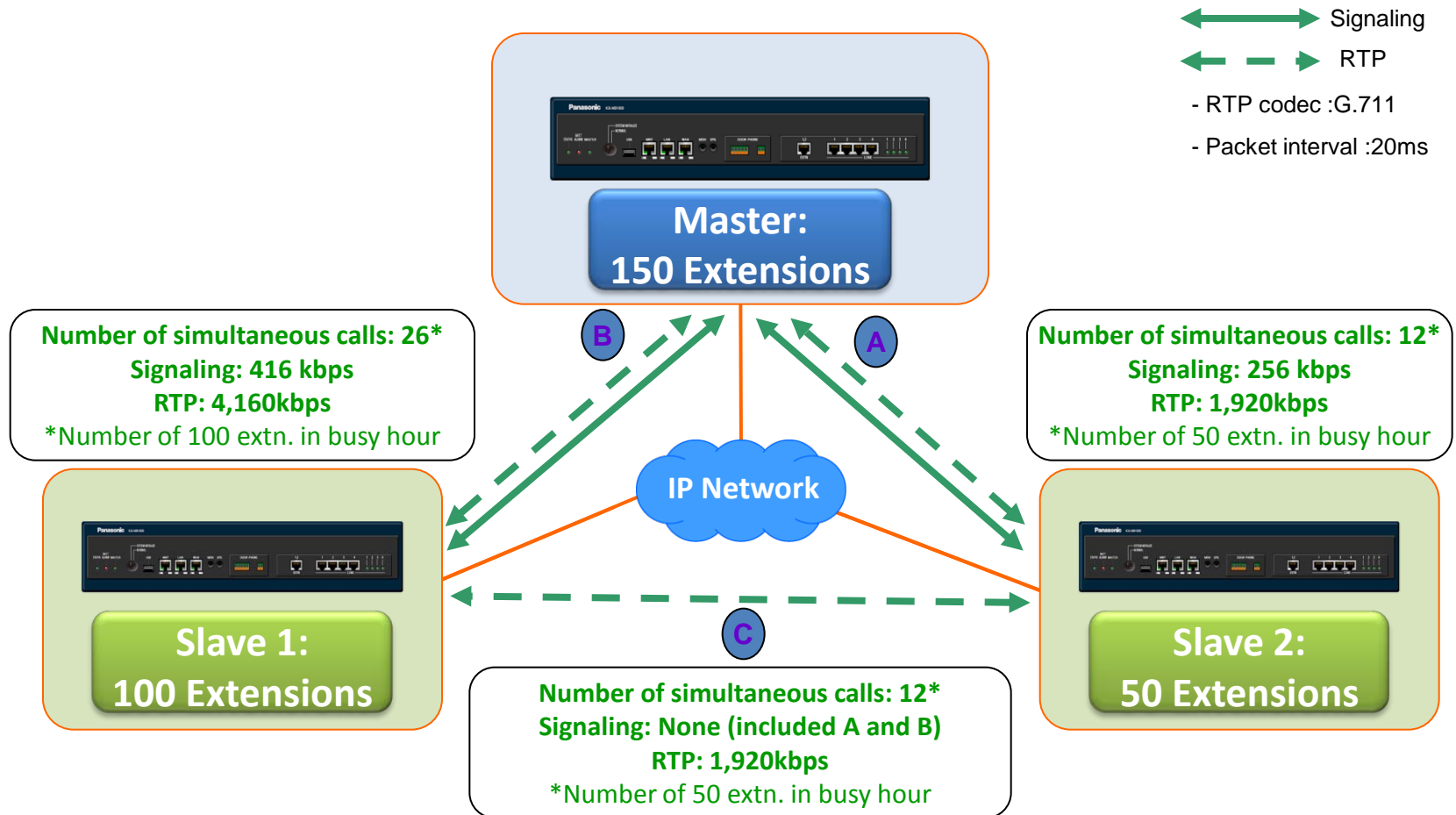
Network bandwidth for One-look networking

- The signaling data traffic between main unit is estimated by the number of extension deployed in main unit.
- The table below shows estimated signaling data traffic in case 2 main units are connected as one-look networking in a pair.
- The values are calculated in case the most busy hour traffic.
- The system is essentially non-blocking.



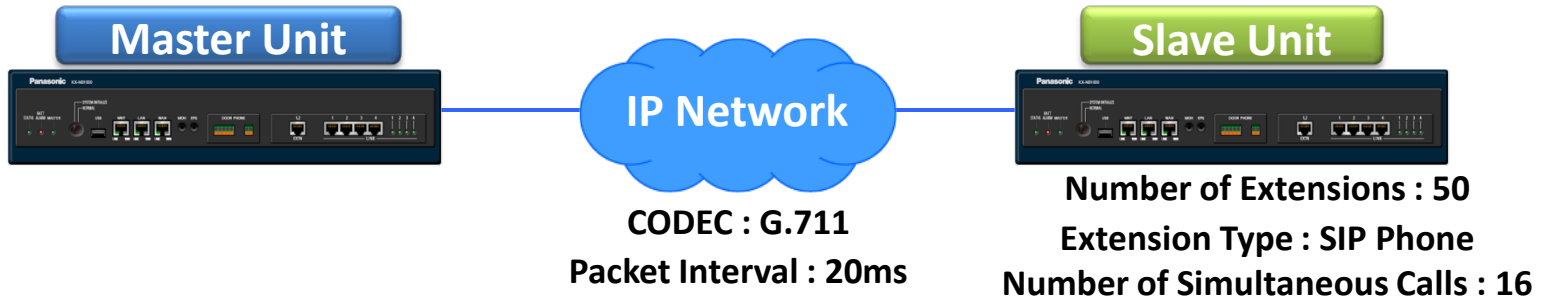
Bandwidth (3/4)

Example of One-look networking configuration



Bandwidth (4/4)

Assessing bandwidth – Example



Bandwidth required for Voice data

= Number of simultaneous calls x 2 x Required bandwidth for codecs (kbps)

= $16 \times 2 \times 80 = 2560\text{kbps}$

Bandwidth required for Signalling

= Number of simultaneous calls x signalling bandwidth per call for SIP phones (kbps)

= $16 \times 16 = 256\text{kbps}$

Total required bandwidth

= Bandwidth required for Voice data (kbps) + Bandwidth required for signalling (kbps)

= $2560 + 256 = 2816\text{kbps}$

* In this example, Basic Ethernet frame, VPN headers, system control data, etc., are not considered.

Appendix 2

IP-PORT SECURITY

Port Security

Port Security

If the VoIP network contains a firewall, the firewall must be configured appropriately to allow VoIP packets to pass through certain ports of the ports listed below without being blocked by filtering.

The ports for which you need to configure the firewall may vary depending on the network conditions.

For more information, consult your network administrator.

The following tables show the PBX ports used for IP communications.

Any access to the ports not on these lists are ignored.

Port Numbers (Default) (1/5)

LAN Port Numbers

Port Number	Protocol	Application	Client/Server	Changeable/ Fixed
8080	TCP	Web Maintenance Console	-	Changeable
9300	UDP	PTAP	-	Changeable
10000– 10655	TCP	H.323 Dynamic Port (H.225 Send, H.245 Send/ Receive, Connection-less [TCP] Send Port)	-	Changeable
20000	TCP	UM-VMA*3	Server	Fixed
30021	TCP/UDP	FTP/FTPS	Server	Changeable
30022	TCP	SSH	Server	Changeable
32727	UDP	MGCP*1 for IP-CS	-	Changeable
33090	UDP	ACS-MDW	Server	Fixed
33091				
33092	TCP			
33131				
33321	TCP	Access Point Login (Telnet)	Server	Changeable
33333	TCP	CTI 3rd Party Connection	-	Changeable
33334	TCP	CTI 1st Party Connection	-	Changeable
33478	UDP	STUN	Client	Changeable
33702	UDP	ACS-MDW (WSD)	Server	Fixed
35060	UDP	SIP UA (CO)	-	Changeable
39300	UDP	PTAP for IP-CS	-	Changeable
40000– 40095	TCP/UDP	FTP/FTPS-Data	Server	Changeable
50000– 65535 (Ephemeral)	UDP	SNMP TRAP	Client	Fixed
	TCP/UDP	FTP	Client	
	TCP/UDP	FTP/FTPS-Data	Client	
	UDP	NTP	Client	
	UDP	DNS	Client	
	UDP	SYSLOG	Client	
	TCP/UDP	SMTP	Client	
	TCP/UDP	SMTP over SSL	Client	
	TCP/UDP	POP3	Client	

Port Numbers (Default) (2/5)

MNT Port Numbers (1)

Port Number	Protocol	Application	Client/Server	Changeable/ Fixed
21	TCP/UDP	FTP/FTPS	Server	Changeable
25	TCP/UDP	SMTP	Server	Changeable
53	UDP	DNS	Server	Changeable
67	UDP	DHCP	Server	Changeable
80	TCP	HTTP	Server	Changeable
123	UDP	NTP	Server	Fixed
143	TCP	IMAP	Server	Changeable
161	UDP	SNMP	Server	Changeable
443	TCP	HTTPS	Server	Changeable
465	TCP/UDP	SMTP over SSL	Server	Changeable
993	TCP	IMAP over SSL	Server	Changeable
2103	TCP	CMM	Server	Fixed
2300	TCP	Telnet-SMDR	-	Changeable
3493	UDP	UPS*1	-	Fixed
3702	UDP	WSD	Server	Changeable
7574	TCP	CWMP	Server	Changeable
8080	TCP	Web Maintenance Console	-	Changeable
30022	TCP	SSH	Server	Changeable
33090	UDP	ACS-MDW	Server	Fixed
30091				
30092	TCP			
33131				
33321	TCP	Access Point Login (Telnet)	Server	Changeable
33333	TCP	CTI 3rd Party Connection	-	Changeable
33334	TCP	CTI 1st Party Connection	-	Changeable
33702	UDP	ACS-MDW (WSD)	Server	Fixed

Port Numbers (Default) (3/5)

MNT Port Numbers (2)

Port Number	Protocol	Application	Client/Server	Changeable/ Fixed
40000– 40095	TCP/UDP	FTP/FTPS-Data	Server	Changeable
50000– 65535 (Ephemeral)	UDP	SNMP TRAP	Client	Fixed
	TCP/UDP	FTP	Client	
	TCP/UDP	FTP/FTPS-Data	Client	
	UDP	NTP	Client	
	UDP	DNS	Client	
	UDP	SYSLOG	Client	
	TCP/UDP	SMTP	Client	
	TCP/UDP	SMTP over SSL	Client	
	TCP/UDP	POP3	Client	
	TCP/UDP	ACS-MDW	Server	

Port Numbers (Default) (4/5)

DSP Port Numbers (1)

Port Number	Protocol	Application	Client/Server	Changeable/ Fixed
21	TCP/UDP	FTP/FTPS	Server	Changeable
25	TCP/UDP	SMTP	Server	Changeable
53	UDP	DNS	Server	Changeable
67	UDP	DHCP	Server	Changeable
68	UDP	DHCP	Client	Changeable
123	UDP	NTP	Server	Fixed
143	TCP	IMAP	Server	Changeable
161	UDP	SNMP	Server	Changeable
465	TCP/UDP	SMTP over SSL	Server	Changeable
993	TCP	IMAP over SSL	Server	Changeable
2103	TCP	CMM	Server	Fixed
3493	TCP	UPS	-	Fixed
3702	UDP	WSD	Server	Changeable
7547	TCP	CWMP	Server	Changeable
8000	UDP	Conference*1	-	Fixed
8080	TCP	Web Maintenance Console	-	Changeable

Port Numbers (Default) (5/5)

DSP Port Numbers (2)

Port Number	Protocol	Application	Client/Server	Changeable/ Fixed
12000 – 13535	UDP	RTP/RTCP	-	Changeable
16000 – 18047	UDP	RTP/RTCP for NAT traversal	-	Changeable
30022	TCP	SSH	Server	Changeable
33090	UDP	ACS-MDW	Server	Fixed
33091				
33092	TCP			
33131				
33702	UDP	ACS-MDW (WSD)	Server	Fixed
40000 – 40095	TCP/UDP	FTP/FTPS-Data	Server	Changeable
50000 – 65535 (Ephemeral)	UDP	SNMP TRAP	Client	Fixed
	TCP/UDP	FTP	Client	
	TCP/UDP	FTP/FTPS-Data	Client	
	UDP	NTP	Client	
	UDP	DNS	Client	
	UDP	SYSLOG	Client	
	TCP/UDP	SMTP	Client	
	TCP/UDP	SMTP over SSL	Client	
	TCP/UDP	POP3	Client	
	TCP/UDP	ACS-MDW	Server	

NETWORKING COMPLETE

Section - 7

FILE MANAGEMENT

SYSTEM UPGRADE (PCMPR)

BACKUP (DCSYS)

OGM

MOH

BGM UPLOAD

BACKUP

SETTING



Contents

0.0 Upgradeable Firmware

1.1 PBX Firmware version

1.2 System Firmware Download

1.3 System Firmware Upgrade

1.4 Check Firmware version

2.1 System Backup to USB

2.2 System Restore from USB

2.3 System File Backup – PC

2.4 System File Restore – PC

3.1 OGM File Upload – PC

3.2 OGM Recording – PT

3.1 MOH/BGM File upload

4.1 MOH/BGM File Status

4.2 MOH/BGM File Upload

4.3 MOH/BGM File Deletion

4.4 MOH/BGM File Backup

4.5 MOH/BGM File Assignment

FIRMWARE UPGRADE

0.0 Upgradable Firmware by WebMC

The following firmware can be managed and uploaded via the WebMC .

Target devices	
Main Unit (Master Unit/Slave Unit)	
Legacy Card	LPR
IP Equipment	NT3xx(IP-PT)
	NCP0158(IP-CS)
	UT133(SIP-MLT)
	UT136(SIP-MLT)
	UT113(SIP-MLT)
	UT123(SIP-MLT)

Firmware upgrade of DECT PS is not possible with TCA/WT Handsets and NS1000 V1.0

IMPORTANT:

Do not change the Filename of the Firmware files – System upgrade will not be possible if the files are named in an incorrect format.

1.1 PBX System Firmware Version

Over the course of the life of the PBX system and terminals etc, it is necessary to keep the System Firmware updated so that the latest features and improvements can be enjoyed.

The Firmware version the PBX system is currently running can be seen below

The screenshot shows the NS1000 Web Maintenance Console interface. At the top, there is a blue header with the text "NS1000 | Web Maintenance Console" and a "Login as INSTALLER" button. To the right of the header, there is a red callout box that says "Select the 'Home' screen." with a red circle around a home icon. Below the header, there are several icons for system management, including a green plus sign, a grid, and a list. A legend below the icons shows: INS (green dot), OUS (yellow dot), Pre-INS (blue dot), Idle (purple dot), and Fault (red dot). Below the legend, there are three buttons: "Registration", "De-registration", and "Forced De-registration". At the bottom, there is a table with the following data:

Site ID	Site Name	Location(MIB)	Status	PBX Mode	IP Address	MAC Address	PBX Version	PBX Region
1	NS1000		INS	master	192.168.0.101	00:80:F0:C6:0C:8E	201.00218	BX

The PBX system's

- Mode
- IP-Address
- MAC Address
- Firmware (PBX) Version
- Region

Can be seen here.

In a Onelook System, all registered units (Master + Slave) information will be displayed on this screen.

1.2 System Firmware Download

Before the system or its terminals can be upgraded, new Firmware must first be downloaded to the System. This can be a Manual or Automatic process depending on the system settings;

Manual Download (1) - Download from PC

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo, the title 'Web Maintenance Console', and a 'Select the Maintenance screen' button. The left sidebar contains a 'System Control' menu with options like '1. Program Update', '2. MOH', '3. Fax Card', '4. System Reset', and '5. System Shutdown'. The '1. Manual' option is selected. The main content area shows the 'Manual' download status as 'Idle'. A 'Look in' field is set to 'Local PC', and a 'Browse...' button is visible. A red box highlights the 'Execute' button. A dialog box asks 'Are you sure you want to transmit program file(s) ? It may take a few minutes to transmit program files' with 'OK' and 'Cancel' buttons. A 'Success' dialog box is also shown.

Select the Maintenance screen

Select the location of the new Firmware file. Click 'Execute'

Click 'OK' and the prompt, and the Download process will start.

File Download takes approximately 4~5 min for PCMPR (PBX System) firmware

1.2 System Firmware Download

There are several other methods available to Download the Firmware files; PC, USB, FTP and a PBX Master system

Manual Download (2) - Download from USB

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo, the title 'Web Maintenance Console', and user information 'Login as INSTALLER'. The left sidebar contains a menu with categories like 'Status', 'System Control', '1. Program Update', '2. MOH', '3. Fax Card', '4. System Reset', '5. System Shutdown', 'Tool', and 'Utility'. The main content area is titled 'Manual' and shows 'Program download status' as 'Idle'. A 'Look in' dropdown menu is set to 'USB memory'. Below this is a table for selecting files to update, which is currently empty. At the bottom right, there are 'Execute' and 'Cancel' buttons.

Select USB Memory, and ensure the USB Device containing the Firmware file is connected to the system.

Select the desired file and click 'Execute'

Execute **Cancel**

If a USB memory device is inserted into the PBX, the contents of the following directory on the device will be checked for updated files: `/private/meigroup/psn/ippbx/update`

1.2 System Firmware Download

To support FTP download, the details of the desired FTP server must first be set in the PBX system

Manual Download (3) - Download from FTP (Available from MASTER Unit only)

Select the 'Settings' screen and 'Network Service' -> 'Client Features' -> 1. FTP

Set the FTP connection name, IP Address, Port Number, login details and Protocol of the desired FTP Server.

Field	Value
Connection Name	FTP Program Download
IP Address	223.0.0.101
Name	
Server Port number	21
User name	INSTALLER
Password	••••
Protocol	FTPS (Explicit)

OK Cancel Apply

1.2 System Firmware Download

Once the FTP Server location is set, the download can be started from the Maintenance screen

Manual Download (3) - Download from FTP (Available from MASTER Unit only)

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo, the text 'Web Maintenance Console', and several icons, with the maintenance icon highlighted by a red box. Below the navigation bar, the user is logged in as 'INSTALLER' and the system is identified as 'NS1000'. The main content area is titled 'Manual' and contains the following elements:

- Program download status**
- Location of program files**
- Look in:** A dropdown menu set to 'FTP server' (highlighted with a red box and a callout: 'Select the Download Location').
- FTP configuration section (highlighted with a red box):**
 - FTP connection name:** A dropdown menu set to 'programdownload'.
 - No. of retries:** A dropdown menu set to '5'.
 - FTP Folder:** A text input field containing 'PCMPR'.
- Buttons:** 'Apply' and 'Get File' (highlighted with a red box and a callout: 'Set the FTP connection path and download folder. Click 'Get File'').

The left sidebar contains a navigation menu with the following items:

- Status
- System Control
 - 1. Program Update
 - 1. Download Program File
 - 1. Manual** (highlighted)
 - 2. Automatic
 - 2. Update Program File
 - 3. Plug and Update
- 2. MOH
- 3. Fax Card
- 4. System Reset
- 5. System Shutdown
- Tool
- Utility

1.2 System Firmware Download

A Slave PBX can also obtain it's firmware from a MASTER

Manual Download (4) - Download from MASTER PBX

NS1000 | Web Maintenance Console

Login as INSTALLER

Manual

Select the Download Location

Program download status: Idle

Location of program files

Look in: Master unit

Select program files to update.

<input type="checkbox"/>	Program	File name	File size	Timestamp	Version
<input type="checkbox"/>	NS1000	PCMPR	84636318 B	10/20/2011 11:51:43	201.002

Select the file to download
(Only most recently downloaded files are displayed)

NB: PCMPR file is shown here, but CS, UT, NT and LPR firmware is also available to download

Execute Cancel

1.2 System Firmware Download

It is possible to download all available firmware updates automatically from an FTP server.

It is also possible to set the system to automatically check for updates at a specific time/day.

Automatic Download (4) - Download from FTP Server – MASTER UNIT ONLY

Select 'Automatic'

Select the FTP Server location (Pre-programmed in 'Settings' Screen) and the Folder name containing the update firmware.

Select the Time/Date to check for new firmware

You can chose to download the new files automatically, or send an email notification that new downloads are available. The Installer can then manually download the files

The download process can be cancelled if necessary

The screenshot shows the 'NS1000 Web Maintenance Console' interface. The left sidebar has a 'System Control' menu with '2. Automatic' selected. The main area has fields for 'FTP server' (programdownload) and 'FTP Folder' (PCMPR). Below that is a 'Check time and date' section with '00:00' and 'Saturday'. There is a 'Download automatically' checkbox. An 'Email notification' section has two email address input fields. At the bottom, there are 'Download Cancel', 'Execute', and 'Close' buttons.

1.3 PBX System Firmware Upgrade (1)

Once download, the new firmware can be 'pushed' to the relevant device Manually or Automatically
System Upgrade (1) - Manual

1. System Control -> Program Update -> Update Program File

2. Select the Update Type (Manual, Timed or Cancel)

3. Select Email notification recipients

4. Select the File to be used for the upgrade

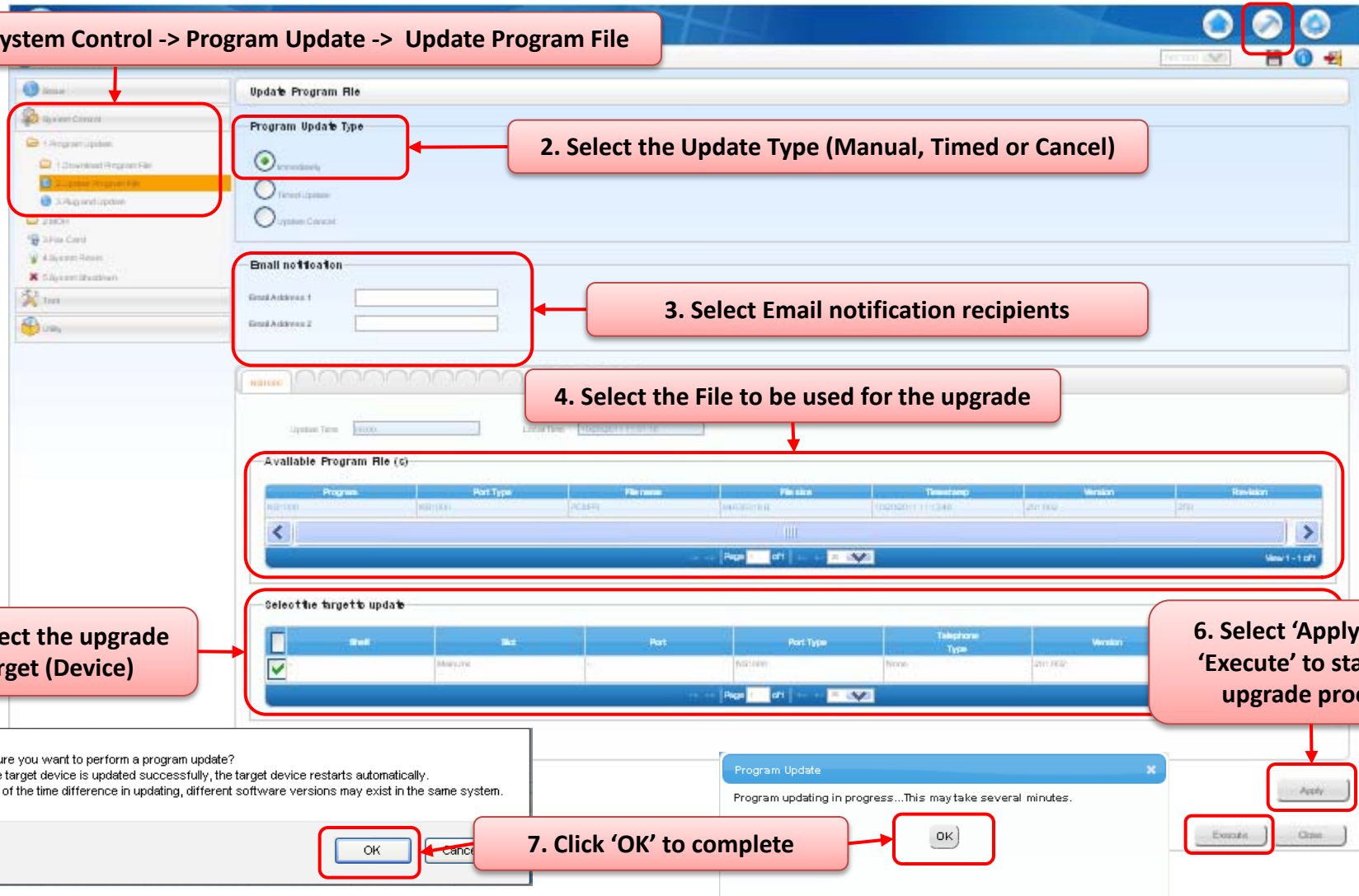
5. Select the upgrade target (Device)

6. Select 'Apply', then 'Execute' to start the upgrade process

7. Click 'OK' to complete

Are you sure you want to perform a program update?
- When the target device is updated successfully, the target device restarts automatically.
- Because of the time difference in updating, different software versions may exist in the same system.

Program Update
Program updating in progress...This may take several minutes.



1.3 PBX System Firmware Upgrade (2)

Devices can be upgraded automatically at a specified time.

System Upgrade (2) - Timed

Update Program File

Program Update Type

Immediately

Timed Update

Update Cancel

Email notification

Email Address 1:

Email Address 2:

Update Time: Local Time: 10/20/2011 12:06:51

		Hour					Minute															
		00	01	02	03	04	05	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
AM	Program	06	07	08	09	10	11	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	NS1000	12	13	14	15	16	17	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
PM		18	19	20	21	22	23	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59

Select the target to update

	Shelf	Slot	Port	Port Type
<input type="checkbox"/>				
<input type="checkbox"/>	-	MainUnit	-	NS1000
<input type="checkbox"/>				None

Select the upgrade target (Device)

Select 'Timed Update'

Select the required 'Update Time'

NB: Once devices have received the firmware updates, they will automatically re-boot – Take care at busy times! If the upgrade process is made via a SLAVE Unit, only the SLAVE and Terminals registered to the SLAVE are upgraded.

1.3 PBX System Firmware Upgrade (3)

The Plug and Update feature allows IP-PTs to be automatically updated to the latest software version when they are registered to the PBX.

Plug and Update

1. System Control -> Program Update -> Update Program File

The screenshot shows the Maintenance Console interface. The top navigation bar includes a home icon, a wrench icon (highlighted with a red box), and a settings icon. Below the navigation bar, the 'Plug and Update' section is active. A table lists the sites in the network:

Site No.	Site Name	Plug & Update
1	NS1000	Off

The 'Plug & Update' dropdown menu for site 1 is open, showing options: Off (selected), Off, and On. A red box highlights this dropdown, and a callout box points to it with the text 'Select 'On' or 'Off'(Default)'. The left sidebar shows the navigation menu with '3. Plug and Update' highlighted in orange.

When Plug and Update is enabled, the version number of the system software stored on the Master unit is compared to the system software currently in the IP-PT, after the IP-PT has been registered to the PBX.

If the software on the Main unit is newer, it is downloaded to the IP-PT.
Plug and Update can be enabled for each site in a One-look network.

The Plug and Update screen lists the PBXs in the One-look network by site number and site name.

1.4 Check Firmware Version

It is possible to check the Firmware versions of each device

PBX Firmware version - check

The screenshot shows the NS1000 Web Maintenance Console interface. The top navigation bar includes a home icon (circled in red) and a list view icon (circled in red). A red callout box points to the home icon with the text: "The PBX Version can be viewed by selecting the 'Home' screen and 'List' View". Below the navigation bar, there are status indicators for INS (green), OUS (yellow), Pre-INS (blue), Idle (purple), and Fault (red). A table displays the PBX details for a single site. A red callout box points to the table with the text: "The PBX Firmware Version can be seen here".

Site ID	Site Name	Location(MIB)	Status	PBX Mode	IP Address	MAC Address	PBX Version	PBX Region
1	NS1000		INS	master	192.168.0.101	00:80:F0:C6:0C:8E	201.00225	BX

PBX SYSTEM BACKUP AND RESTORE (NOT UM)

2.1 System Backup – to USB

A PBX's system data can be backed up to a USB memory device inserted into the PBX's USB port. At a later time, the USB memory device can be used to restore the backed up system data to a PBX.

System Backup to USB

Tool -> System Data Backup to USB

The screenshot shows the 'Maintenance Console' interface. The top navigation bar includes a home icon, a wrench icon (highlighted with a red box), and a refresh icon. Below the navigation bar, the user is logged in as 'INSTALLER' and the system ID is 'NS1000'. The left sidebar contains a menu with the following items: Status, System Control, Tool, 1. System Data Backup To USB (highlighted with a red box), 2. BRI Automatic Configuration, 3. NDSS Link Data Clear, 4. Call Pickup For My Group, and 5. Extension List View. The main content area is titled 'System Data Backup To USB' and contains the following text: 'Please select target data.' followed by three checkboxes: 'System data' (checked), 'MOH + OGM' (unchecked), and 'Activation Key' (checked). A red box highlights these checkboxes. Below the checkboxes, a note states: 'If you don't select "System Data", you cannot use the data as an automatic restore file.' A red callout box points to the 'System data' checkbox with the text: 'Select the PBX System data to Backup. You must Backup the System data if you wish to restore the system at a later date. Recommendation: Backup All Files'. At the bottom right, there are 'Execute' and 'Cancel' buttons, with the 'Execute' button highlighted by a red box.

NB:

- The UPS connection must be removed before inserting the USB Device – re-connect it afterwards.
- UM data is backed up using a different process – only PBX data is backed-up by this process.
- Use a USB Device with minimum 512MB free space.

2.2 System Restoration – From USB

Restoring backed up data from a USB memory device to a PBX.

Follow the procedure below to restore the backed up data to a PBX.

Note: The restoration process requires that the PBX is initialised, which returns the PBX to its factory default state.

Under the following conditions, restoration may not be possible, even though the PBX has been initialised.

- The USB memory device hardware is faulty.
- The data on the USB memory device has become corrupted.
- The USB memory device is removed from the USB port of the PBX during the restoration process.

To minimise the potential of a failed backup, connect the USB memory device to a PC to confirm the USB memory device is operational and that the backup data is intact before starting this restore process.

1. The PBX must be in a powered-off state.
2. Insert the USB memory device with the backup data into the USB port of the PBX.
3. Set the PBX's System Mode Switch to the "SYSTEM INITIALIZE" position.
4. Turn on the PBX's power switch. The STATUS indicator will flash green.
Slide the System Mode Switch back to the "NORMAL" position.
The restore process will begin and the STATUS indicator will flash rapidly.
5. When the restoration process is completed, the PBX will restart automatically.

2.3 System File Backup - PC

A PBX's system data (DCSYS File and LICxx Files) can be backed up to PC if a USB device is not available. At a later time, the files can be transferred back to the PBX and a restore made.

The screenshot shows the NS1000 Web Maintenance Console interface. A red box highlights the 'Tools' icon in the top right corner. A callout box points to the 'Tool' menu in the left sidebar, where '2. File Transfer PBX to PC' is selected. The main area displays a table of system files. The 'DCSYS' file is highlighted in yellow. A red box highlights the 'Transfer' button at the bottom of the table. A second callout box points to the 'Transfer' button. A third callout box points to the 'Save File' option in a Firefox dialog box that appears when the file is downloaded. A fourth callout box points to the 'DCSYS' file in the table. A fifth callout box points to the 'File Transfer PBX to PC' tool in the sidebar. A sixth callout box points to the 'Save the File to your PC' dialog box. A yellow box at the bottom contains the note: 'NB: Backup LICxxx files also – these are you're A/K files!'.

Tool -> File Transfer PBX to PC

Save the File to your PC

Select the desired file and click 'Transfer'

NB: Backup LICxxx files also – these are you're A/K files!

File Name	Date	Version	Size
DCSGPBX	10/20/2011	05:07:08	103919 bytes
DCSIDB	10/20/2011	12:28:46	19456 bytes
DCSLDB	10/20/2011	05:07:18	148480 bytes
DCSLPBX	10/20/2011	05:07:08	2676 bytes
DCSRPBX	10/20/2011	05:07:10	57414 bytes
DCSUMD	10/20/2011	05:07:12	73034 bytes
DCSUMI.journal	10/11/2011	16:20:11	0 byte
DCSYS	10/20/2011	05:07:14	63146 bytes
DLNG1	10/18/2011	07:03:16	43824 bytes
DLNG2	10/18/2011	07:03:16	43824 bytes
DLNG3	10/18/2011	07:03:16	43824 bytes
LIC000	10/07/2011	18:09:54	244 bytes
LIC001	10/07/2011	18:09:54	244 bytes
LIC002	10/07/2011	18:09:54	244 bytes
LIC003	10/07/2011	18:09:54	244 bytes
PARMIRNR	03/24/2011	02:17:24	2344624 bytes
PARMDNR	03/24/2011	02:17:24	2344624 bytes
DCS000.PAC	03/24/2011	02:17:24	14656 bytes

Opening DCSYS

You have chosen to open

DCSYS
which is a: application/force-download
from: http://223.0.0.1

What should Firefox do with this file?

Open with

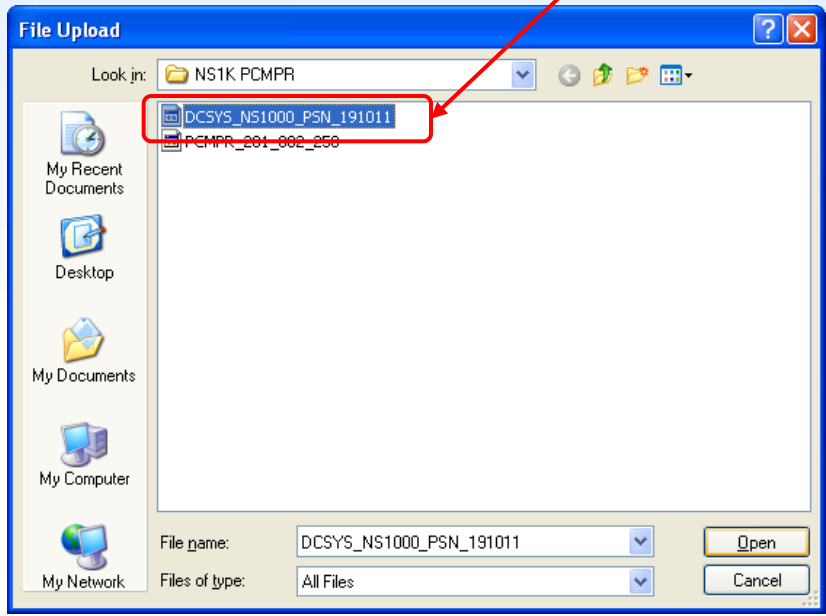
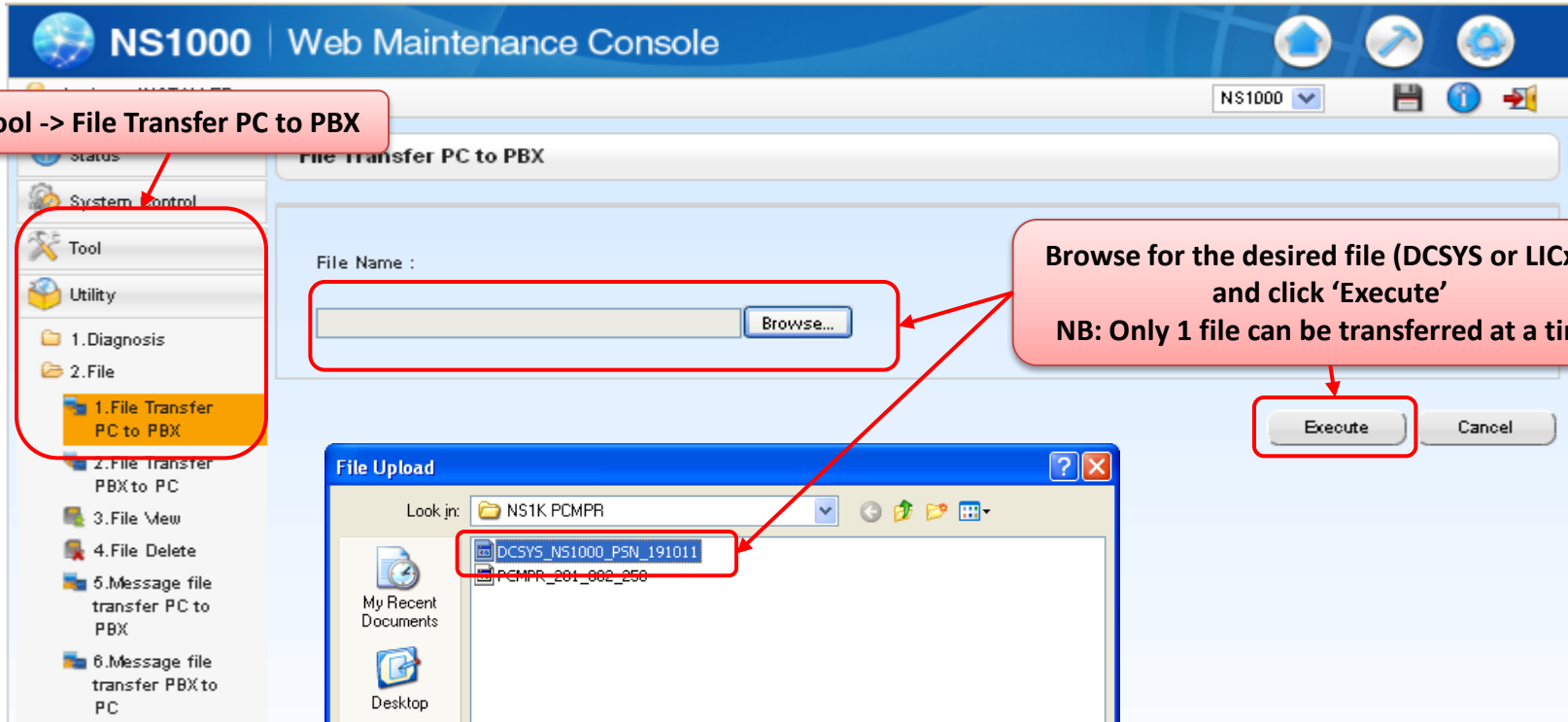
Save File

Do this automatically for files like this from now on.

It is possible to restore the system using the 'File Transfer PC to PBX tool, followed by a system Reset (via WebMC).

2.4 System File Restore – PC (1)

A PBX's system data (DCSYS File and LICxx Files) can be restored from a PC .



2.4 System File Restore – PC (2)

The files will be transferred from the PC to the PBX.

The screenshot shows the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo, the title 'Web Maintenance Console', and several utility icons. Below the navigation bar, the user is logged in as 'INSTALLER'. The main content area is titled 'File Transfer PC to PBX'. It features a 'File Name' field with the path 'C:\Documents and Settings\teo2744.TECCFW5KE\...' and a 'Browse...' button. At the bottom right of this section are 'Execute' and 'Cancel' buttons. On the left side, there is a sidebar menu with categories: Status, System Control, Tool, and Utility. Under the Utility category, there are sub-items: 1. Diagnosis, 2. File, 1. File Transfer PC to PBX (highlighted in orange), 2. File Transfer PBX to PC, 3. File View, and 4. File Delete.

One the transfer is completed, you will need to Restart the PBX via the WebMC.

This screenshot shows a progress bar for the file transfer. The title bar reads 'File Transfer PC to PBX'. Below the title, it says 'Uploading file now'. The progress bar itself is partially filled with an orange bar, indicating the progress of the upload.

This screenshot shows a system message dialog box with a red border. The message text reads: 'UB06002: The transferred file has been saved as "DCSYS_R". To let this file effective, please use the System Reset feature in the System Control menu.' At the bottom right of the dialog is an 'OK' button.

2.4 System File Restore – PC (3)

Select 'System Reset' to make the transferred file active .

The screenshot displays the 'Web Maintenance Console' interface. The top navigation bar includes a 'System Control' icon (a hammer) which is highlighted with a red box. A red callout box points to this icon with the text: 'System Control -> 4. System Reset'. The left sidebar contains a menu where '4. System Reset' is highlighted in orange. The main content area is titled 'System Reset' and includes a 'Select Site' dropdown set to 'All Sites'. Below this, there are instructions: 'Before restarting the system, please check the system data.' and 'If you restart using the present memory data, you must backup the system data to the storage memory. (Click Backup)'. A second instruction states: 'If you restart using new system data (using files that were transferred) you must not backup to the storage memory. (Click Skip)'. At the bottom right, there are three buttons: 'Backup', 'Skip', and 'Cancel'. The 'Skip' button is highlighted with a red box, and a red callout box points to it with the text: 'Be sure to select 'Skip' when prompted, otherwise the transferred file will be lost.' In the center, a dialog box asks: 'The system will be restarted by this operation. Do you want to restart the system?' with 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a red box, and a red callout box points to it with the text: 'Click 'OK' at the prompts and the system will Restart (All services/Terminals will be OUS while restarting.' At the bottom right, another dialog box asks: 'The system will restart after the completion of this command. You cannot stop the restart after clicking OK. Continue?' with 'OK' and 'Cancel' buttons. The 'OK' button is highlighted with a red box, and a red callout box points to it with the text: 'Click 'OK' at the prompts and the system will Restart (All services/Terminals will be OUS while restarting.'

OGM

OUT GOING MESSAGES

3.1 OGM File Upload - PC (1)

A maximum of 64 Outgoing messages (OGM) can be recorded on a PBX.

In a One-look network, 64 messages can be recorded at each site (Max 64min recording time per site).

Using a PC, OGM files can be easily managed between PBX Units.

It is also possible to download MSG files from the PBX using the 'MSG Transfer to PC' Utility.

Messages downloaded to a PC are WAV (G.711a/ μ) format.

Messages uploaded from a PC must be in one of the following formats:

WAV (linear PCM) or WAV (G.711a/ μ).

Utility -> 2. File -> 3. MSG Transfer to PBX

Select the target system and OGM Index Number (1~64)

Browse to the desired MSG File

Click 'OK'

Messages at all sites can be recorded, listened to, and deleted using the Master unit. However, in operation a PBX can only use messages stored locally. E.g. when incoming callers queue, only an OGM from the PBX at which the callers are queuing can be used. An OGM from another site cannot be used.

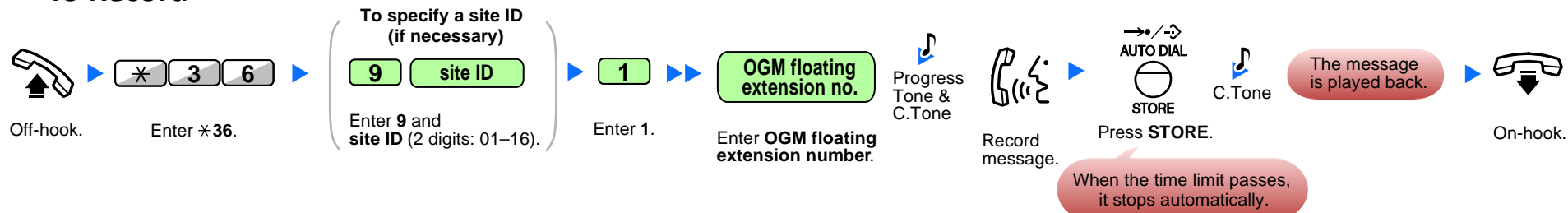
3.2 OGM Recording – IP-PT

The manager extension (COS Setting) can record three kinds of greeting messages (OGM) as follows:

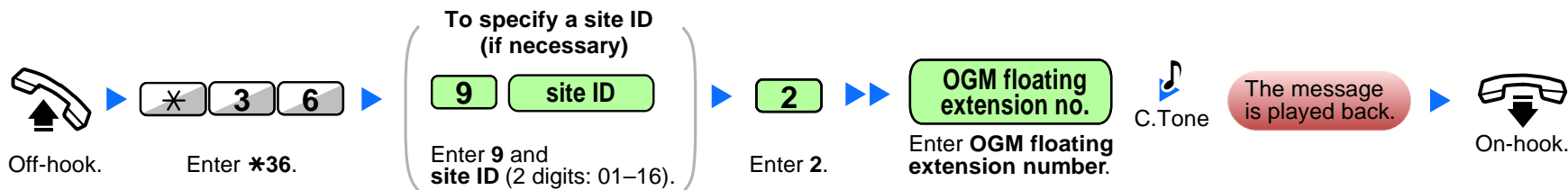
1. DISA message: Used to greet and guide callers.
2. Incoming Call Distribution Group message: Used to greet and guide callers to an ICD-G
3. Timed Reminder message: Used for a wake-up call message.

OGM recording can be accomplished via a Manager Extension using the sequence below

To Record



To Playback



MOH (MUSIC ON HOLD)
BGM (BACKGROUND MUSIC)
UPLOAD / BACKUP

4.1 MOH/BGM File Status

Initially, a preinstalled audio file is set as the audio source for BGM 1.

Through system programming, this file can be removed or replaced like any other BGM audio file.

However, if the PBX is re-initialised, this preinstalled audio file is set to BGM 1 again.

The 'Default' MOH file details (and additional files when they are loaded) can be seen via: System Control -> 2. MOH -> 3. Status / Backup

The screenshot shows the 'Status / Backup' page in the PBX Management Console. The page title is 'Status / Backup'. Below the title, there are fields for 'Site to check' and 'Site No.' (NS1000). A 'Remained Capacity Time' field shows '13:59\"'. Below this is a table with columns: BGM No., File Name, Size (s), and Select. The table contains one row with BGM No. 1, File Name 'Internal_MOH.WAV', and Size 208. A 'Backup' button is visible next to this row. The page footer shows 'Page 1 of 1' and 'View 1 - 8 of 8'.

BGM No.	File Name	Size (s)	Select
1	Internal_MOH.WAV	208	Backup
2			Backup
3			Backup
4			Backup
5			Backup
6			Backup
7			Backup
8			Backup

Notes

- Users logged in to the Master unit can see the status of all One-look network sites. Users logged in to a Slave unit may only view the status of that PBX.
- Only WAV files can be installed and file names must not exceed 14 ASCII characters in length.
- Files may not be larger than 80 MB.
- User (User) level accounts cannot perform this procedure.

4.2 MOH/BGM File upload

MOH Files can be uploaded to 8 different BGM locations over multiple sites using a PC .

System Control -> 2. MOH -> 1. Install

1. Select the MOH file for Upload

2. Select the PBX Site and Upload Time

3. Select the desired BGM Location (1~8)

4. Click 'Execute. The Upload will start

[User-supplied audio files]
Audio files must meet the following specifications: – Format: WAV, – Size: 80 MB or less,
– Length: 8 minutes or less
Ensure any Music used is not subject to copyright/performance law in your country.

Site No.	Site Name	Status	Schedule	Select	Time Set
1	NS1000	Ready	-	<input checked="" type="checkbox"/>	Now
2				<input type="checkbox"/>	Now
3				<input type="checkbox"/>	0:00
4				<input type="checkbox"/>	1:00
5				<input type="checkbox"/>	2:00
6				<input type="checkbox"/>	3:00
7				<input type="checkbox"/>	4:00
8				<input type="checkbox"/>	5:00
				<input type="checkbox"/>	6:00
				<input type="checkbox"/>	7:00
				<input type="checkbox"/>	8:00
				<input type="checkbox"/>	9:00
				<input type="checkbox"/>	10:00
				<input type="checkbox"/>	11:00
				<input type="checkbox"/>	12:00
				<input type="checkbox"/>	13:00
				<input type="checkbox"/>	14:00
				<input type="checkbox"/>	15:00
				<input type="checkbox"/>	16:00
				<input type="checkbox"/>	17:00
				<input type="checkbox"/>	18:00

4.3 MOH/BGM File Deletion

MOH Files can be managed across all sites via the MASTER unit.

Existing files can be deleted, allowing new files to be uploaded in their place.

System Control -> 2. MOH -> 2. Delete

1. Select the site from which you wish to delete the MOH/BGM Files from

Site No.	Site Name	Status	Select
1	NS1000	Ready	<input checked="" type="checkbox"/>
2			<input type="checkbox"/>
3			<input type="checkbox"/>
4			<input type="checkbox"/>
5			<input type="checkbox"/>
6			<input type="checkbox"/>
7			<input type="checkbox"/>
8			<input type="checkbox"/>
9			<input type="checkbox"/>
10			<input type="checkbox"/>

2. Select which BGM locations to delete (1~8 or All)

BGM No. to delete

BGM No.

- All
- BGM 1
- BGM 2
- BGM 3
- BGM 4
- BGM 5
- BGM 6
- BGM 7
- BGM 8

3. Click 'Execute'

4.4 MOH/BGM File Backup

It is possible to backup MOH/BGM files to a PC.

In the event of a system failure, the files can be easily re-uploaded

System Control -> 2. MOH -> 3. Status / Backup

1. Select the PBX Site to backup

2. Select files to backup

3. Save the files to PC

4. Click 'OK'

BGM No.	File Name	Size (s)	Select
1	Internal_MOH.WAV	208	Backup
2	DGM_BGM_MOH.WAV	208	Backup
3			Backup
4			
5			
6			
7			
8			

[User-supplied audio files]
Audio files must meet the following specifications:
– Format: WAV, – Size: 80 MB or less, – Length: 8 minutes or less (TBC)
Ensure any Music used is not subject to copyright/performance law in your country.

4.5 MOH/BGM Assignment

Via System Programming, the appropriate MOH/BGM source can be selected.

(For details of External MOH Sources, refer to the Installation Manual)

PBX Configuration -> 2. System -> 2. Operator and BGM

Select the source for BGM1, MOH and Transfer here

BGM and Music on Hold

Music Source of BGM 1	: Internal BGM	▼
Music on Hold	: BGM2	▼
Sound on Transfer	: Same as Music on Hold	▼

OK Cancel Apply

**NB: User Defined MOH/BGM will not be heard when an IP Extension puts another IP Extension on hold. The IP Extension will generate their own HOLD Tone.
(Any P2P communication (No DSP) will not hear User defined MOH)**

Click 'OK'

UPGRADE & BACKUP COMPLETE

Section - 8

MAINTENANCE



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Appendix 1 - MIB

Appendix 2 - Supported USB

Chapter 1

SYSTEM SHUTDOWN - RESET

1.1 UPS Connection and setting (1)

UPS (Uninterruptible Power Supply) Integration

Description

An uninterruptible power supply unit (UPS) is a device that supplies power for several minutes to a connected device when a power failure occurs.

If the PBX is connected to a compatible UPS via USB when a power failure occurs, the PBX can determine how much power remains in the UPS and shut down when the remaining power drops below a specified amount to prevent data loss or corruption.

The following features are also available:

- Specify the remaining battery level at which to shut down the PBX.
- Receive e-mail notifications of changes to the status and availability of a UPS.

Conditions

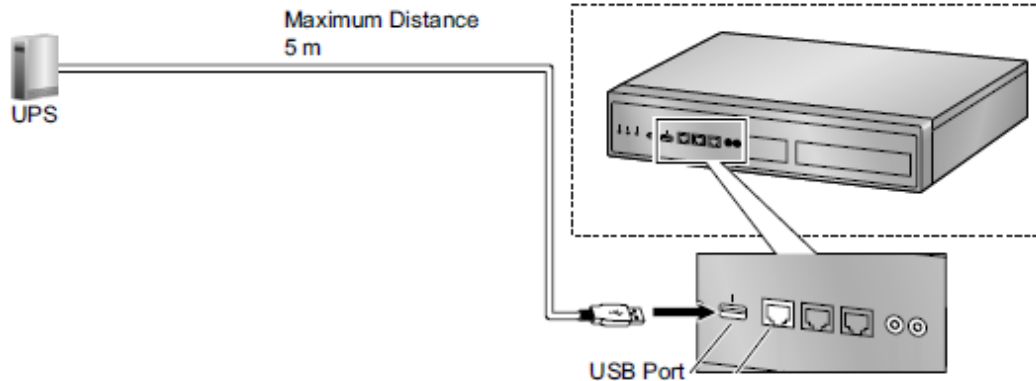
- For details about UPS units that are compatible with the automatic shutdown feature of this PBX, consult your dealer. If an incompatible UPS is connected and the UPS runs out of power, the PBX will turn off without shutting down.
- The power cord and USB cable must be connected to the same UPS. Connecting them to different UPSs can result in incorrect operation.

IMPORTANT

- When power is restored after a power outage, the PBX operates in the following manner:
 - If the PBX did not shut down, normal operation continues uninterrupted.
 - If the PBX shut down and power remains in the UPS, the PBX must be started again manually.
(The power switch must be turned off and then on again.)
 - If the PBX shut down and no power remains in the UPS, the PBX starts automatically.
(This is because the PBX's power switch is on.)

1.1 UPS Connection and setting (2)

1. Connect the UPS as described in the Installation manual



2. Set the NS1000 Shutdown threshold via the WebMC

Maintenance -> Status -> Equipment Status -> 1. UPS

Login as INSTALLER

NS1000

UPS

UPS Connection Status
Battery Voltage (V)
Battery Charge Percentage (%)
Power Supply
UPS Shutdown Conditions - Battery level

UPS Status can be seen here

Set the UPS Battery Level, that when reached, will cause the PBX to Shutdown

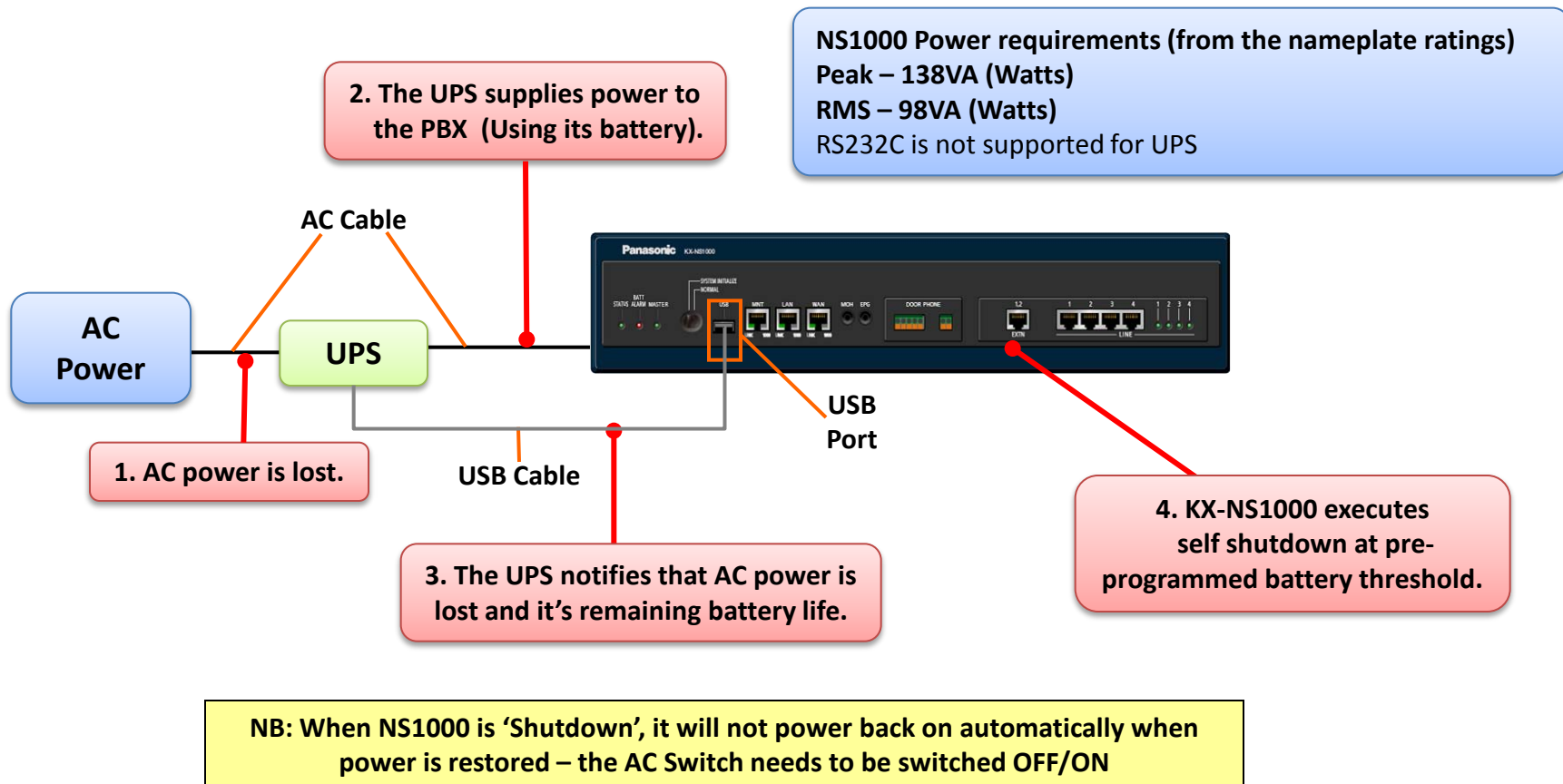
NB: UPS Status alerts can also be sent via email.

1.2 System Shutdown with UPS

The UPS Provides a Safe Shutdown Process during AC Power Failure

Because the NS1000 system uses a Linux Based OS, the KX-NS1000 must be powered down using the Shutdown process to avoid possible damage to the systems File Structure.

UPS Connection diagram and automatic shutdown process

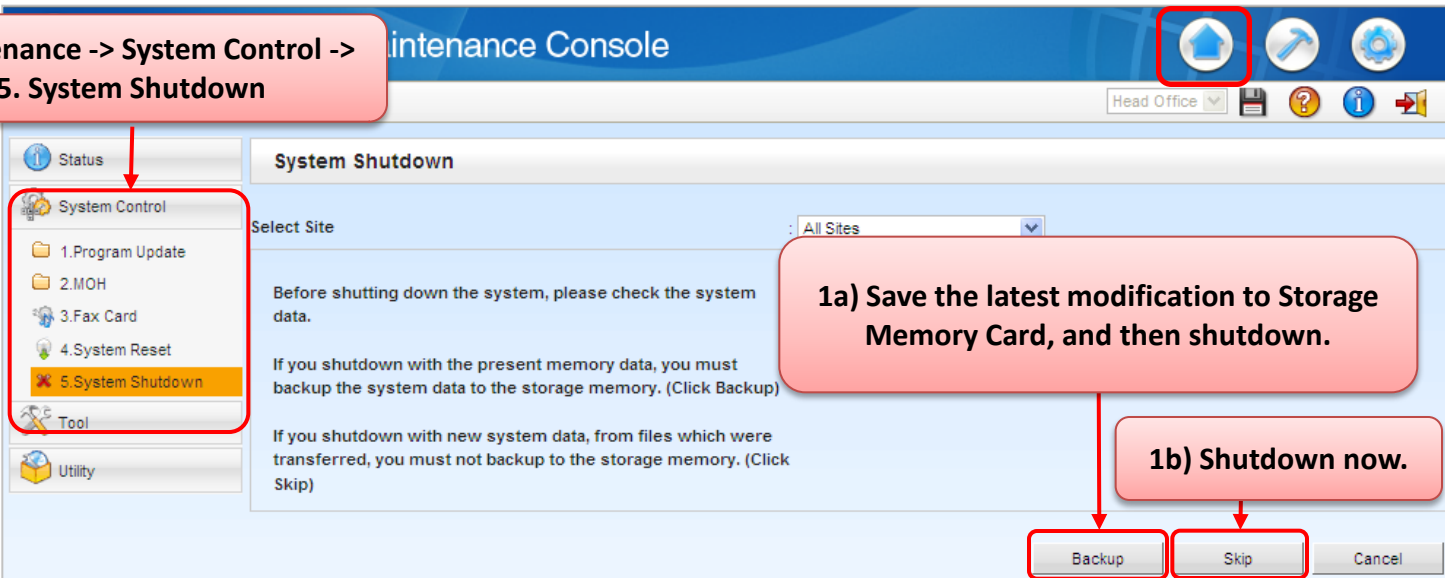


1.3 System Shutdown - Manual

The NS1000 system can be safely Shutdown by the following process

Maintenance -> System Control -> Maintenance Console

5. System Shutdown



System Shutdown

Select Site: All Sites

Before shutting down the system, please check the system data.

If you shutdown with the present memory data, you must backup the system data to the storage memory. (Click Backup)

If you shutdown with new system data, from files which were transferred, you must not backup to the storage memory. (Click Skip)

1a) Save the latest modification to Storage Memory Card, and then shutdown.

1b) Shutdown now.

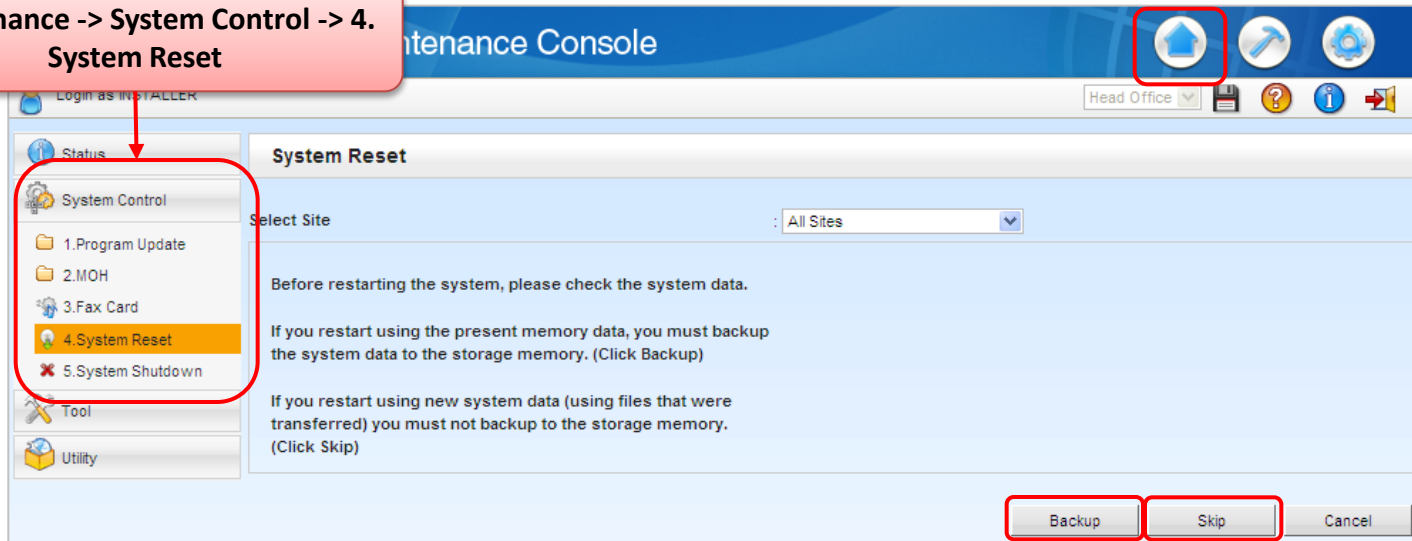
Backup Skip Cancel



1.4 System Reset/Restart

The NS1000 system can Reset/Restarted by the following process

Maintenance -> System Control -> 4.
System Reset



Save the latest modification to Storage Memory Card, and then reset.

Reset now.

**NB: This process does not set the system back to 'Factory Default'.
To reset ALL settings, the system must be re-initialised.**

1.5 FAX Card Reset/Restart

The NS1000 FAX Card (if fitted) can be safely Restarted by the following process

Maintenance -> System Control ->
3. Fax Card

The screenshot displays the Maintenance Console interface. The left sidebar contains a menu with the following items: Status, System Control, 1. Program Update, 2. MOH, 3. Fax Card (highlighted in orange), 4. System Reset, 5. System Shutdown, Tool, and Utility. The main content area is titled 'Fax Card' and 'FAX Card Restart', featuring an 'Execute' button. A red callout box points to the 'Execute' button with the text 'Click 'Execute' and follow the Prompts.' Below this, a dialog box asks 'Are you sure want to restart the FAX Card?' with 'OK' and 'Cancel' buttons. A large red arrow points from the 'Execute' button to this dialog. A second dialog box shows 'FAX Card successfully restarted.' with an 'OK' button. A second large red arrow points from the first dialog to the second.

Chapter 2

UM BACKUP AND RESTORE

2-1. UM Data Backup / Restore

System Prompts / Mailbox Prompts / Mailbox Messages

The following system programming data, system parameters, and voice data can be backed up or restored as individual files

Type	Main Items
System Prompts	<ul style="list-style-type: none">- Installed Prompt- Custom Service Menu- etc.
Mailbox Prompts	<ul style="list-style-type: none">- Owner Name- Personal Greetings- etc.
Mailbox Message	

* Please refer to the PC Programming Manual for details.

The UM data backup can be executed manually or scheduled to run automatically at regular intervals.

2.2. Backing up the UM Data (manual) (1)

Maintenance -> Tool-> 9.1 Manual backup

System Prompts settings

Select (Check) the items to be backed up.

- System Prompts
- Installed Prompts
 - Prompt 1
 - Prompt 2
 - Prompt 3
 - Prompt 4
 - Prompt 5
 - Prompt 6
 - Prompt 7
 - Prompt 8
- Custom Service Menu
- Company Name
- Company Greeting
- System Mailbox Group Voice Label
- System Caller Name
- Prompt Selection
- Hold Announce Menu

Mailbox Prompts settings

Select (Check) the items to be backed up.

- Mailbox Prompts
- Owner Name
- Personal Greetings
- Personal Caller ID Name
- Interview
- Personal Group List Name
- EMD List Member Name

Mailbox Prompts

To configure more detailed settings, click these buttons.

Mailbox Message settings

Select (Check) the items to be backed up.

- Mailbox Messages

Mailbox Messages

2.2. Backing up the UM Data (manual) (2)

System Backup - Select Mailboxes

Select mailboxes to backup for Mailbox Messages:

Mailbox Number	First name	Last Name	Extension
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	998	Message Manager	101
<input checked="" type="checkbox"/>	999	System Manager	
<input checked="" type="checkbox"/>	201		201
<input checked="" type="checkbox"/>	202		202
<input checked="" type="checkbox"/>	203		203
<input checked="" type="checkbox"/>	204		204

Page 1 of 1 View 1 - 6 of 6

OK Cancel

Mailbox Message settings example

Select (Check) the mailboxes to be backed up.

System Backup:

Local PC

USB(Main Unit) :

Select (Check) the destination method.

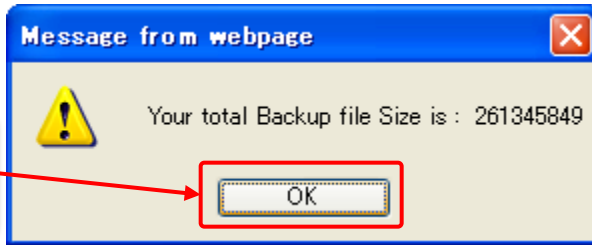
OK

Cancel

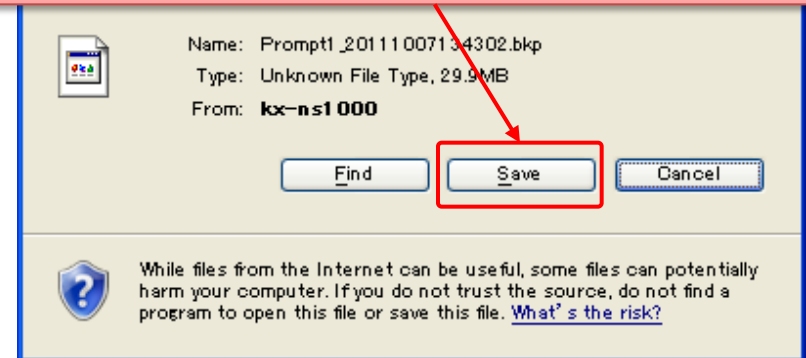
2.2. Backing up the UM Data (manual) (3)

When “Local PC” is selected

Confirm the backup file size and click “OK”.



When the message window is displayed, click “Save”, specify the destination folder and file name, and save the backup files. (Standard Windows Interface)



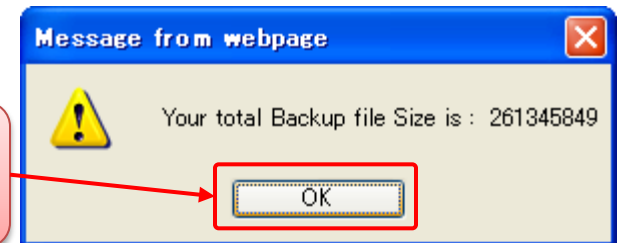
When “USB (Main Unit)” is selected



When you select “USB (Master Unit)”, you can specify the destination folder of the USB memory device.

* In this case, you

Confirm the backup file size and click “OK”.



* Ensure that the USB memory device is connected to the PBX and create the corresponding folder on the USB device in advance.

2.3. Backing up the UM Data (Scheduled) (1)

To create a new scheduled backup, “Add new entry” icon.

Maintenance -> Tool-> 9.2 Scheduled backup

The screenshot displays the NS1000 Web Maintenance Console. On the left, a navigation menu is shown with a red box highlighting the 'Tool' section, which includes '9.2 Scheduled backup'. A red arrow points from the text 'Maintenance -> Tool-> 9.2 Scheduled backup' to this menu item. The main area shows the 'Scheduled backup' tool interface, which includes a table with columns for 'Schedule info', 'Description', and 'Status'. The table is currently empty, and a status bar at the bottom indicates 'No records to view'. A red box highlights the toolbar at the bottom of the table, which contains four icons: a refresh icon, a plus sign, a pencil, and a trash can. A separate red box provides a legend for these icons: 'Remove filter' (refresh icon), 'Adds new entry' (plus sign), 'Edits the selected row' (pencil icon), and 'Deletes the selected row' (trash can icon).

Schedule info	Description	Status
---------------	-------------	--------

Remove filter
Adds new entry
Edits the selected row
Deletes the selected row

2.3. Backing up the UM Data (Scheduled) (2)

You can select the following backup frequency.

Rule	Parameters - When the backup is executed
Daily	Hour, Minute
Weekly	A day of the week, Hour, Minute
Monthly	A day of the month, Hour, Minute
Yearly	A day of the year, Hour, Minute
Specific Date	A specific date, Hour, Minute

* Up to 20 backup events can be scheduled.

The screenshot shows a configuration window titled "Weekly Backup example". It contains the following fields and sections:

- Description:** A text input field containing "Weekly Backup".
- Rule:** A dropdown menu set to "Weekly".
- Parameters:** A field showing "Tuesday" as the day, "at 0" as the hour, and "30" as the minute.
- Select Data to backup:** A section with two sub-sections: "System Prompts" and "Installed Prompts". Both have a checked checkbox. Under "Installed Prompts", there are eight items labeled "Prompt 1" through "Prompt 8", each with a checked checkbox.

Callouts on the right side of the window provide instructions:

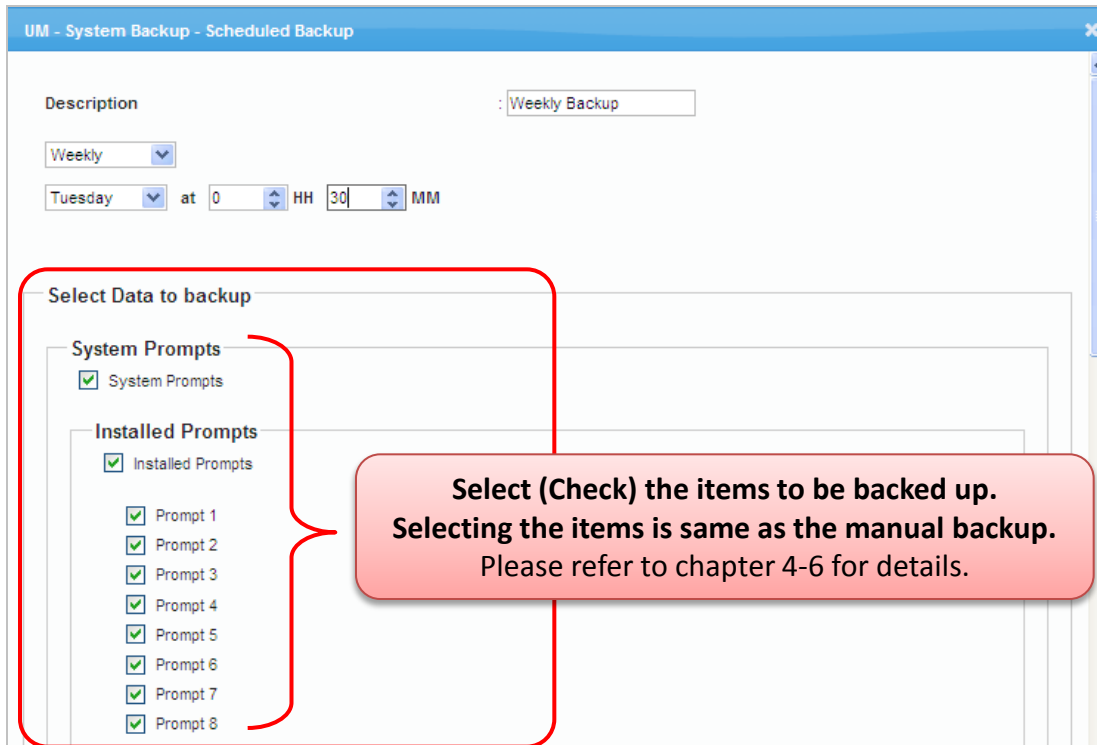
- Red box: "Enter the description." (points to the Description field)
- Red box: "Select the rule." (points to the Rule dropdown)
- Red box: "Set the parameters." (points to the Parameters field)

A larger red box at the bottom of the window contains the following text:

Select (Check) the items to be backed up. Selecting the items is same as the manual backup. Please refer to chapter 4-6 for details.

2.3. Backing up the UM Data (Scheduled) (3)

Continued from the previous slide



The screenshot shows a window titled "UM - System Backup - Scheduled Backup". The "Description" field contains "Weekly Backup". The frequency is set to "Weekly" and the day is "Tuesday" at "0" HH and "30" MM. Under the "Select Data to backup" section, "System Prompts" and "Installed Prompts" are both checked. Under "Installed Prompts", eight individual prompts (Prompt 1 through Prompt 8) are also checked. A red callout box points to these checked items with the following text:

Select (Check) the items to be backed up.
Selecting the items is same as the manual backup.
Please refer to chapter 4-6 for details.

2.3. Backing up the UM Data (Scheduled) (4)

The screenshot shows the NS1000 Web Maintenance Console interface. The main content area is titled "Scheduled backup" and contains a table with the following columns: "Schedule info", "Description", and "Status". A single row is visible, representing a new backup configuration: "Schedule backup Daily at 0:30", "Daily", and "Disable". A red box highlights this row, and a red arrow points from a callout box to it. The callout box contains the text: "A new scheduled backup is added. The description you set and schedule information will be displayed." The left sidebar shows a navigation menu with "2. Scheduled backup" selected. The bottom of the console has "View 1 - 1 of 1" and buttons for "OK", "Cancel", and "Apply".

Schedule info	Description	Status
<input type="checkbox"/> Schedule backup Daily at 0:30	Daily	Disable

**A new scheduled backup is added.
The description you set and schedule
information will be displayed.**

Activation Key (KX-NSU003) is required to use the scheduled backup feature.

2.4. Restoring the UM Data (1)

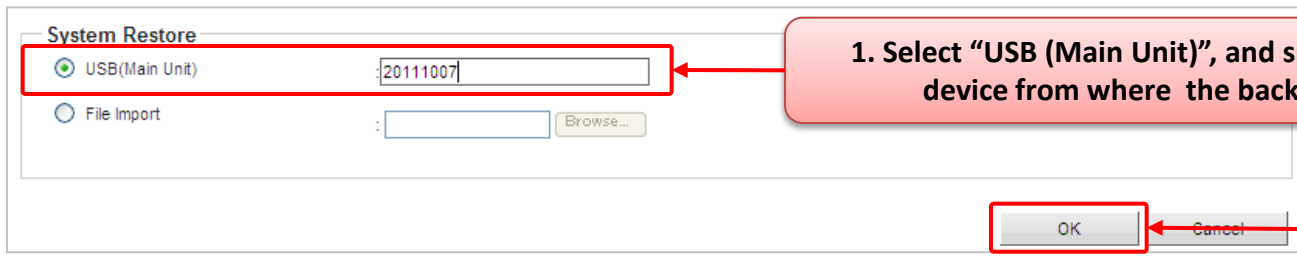
The screenshot shows the NS1000 Web Maintenance Console interface. The title bar reads "NS1000 | Web Maintenance Console". The left sidebar contains a "Tool" menu with 12 items, where "10. UM data restore" is highlighted. A red callout box points to this menu item with the text "Maintenance -> Tool-> 10 UM data restore". The main content area is titled "UM data restore" and contains two sections: "System Prompts" and "Installed Prompts". The "Installed Prompts" section lists eight radio button options: Prompt 1 through Prompt 8. A red callout box points to this list with the text "Select an item to be restored." Below this section, there are several other radio button options: Custom Service Menu, Company Name (which is selected), Company Greeting, System Mailbox Group Voice Label, System Caller Name, Prompt Selection, and Hold Announce Menu.

*** Multiple items can NOT be restored at one time.**

2.4. Restoring the UM Data (2)

Continued from the previous slide

Restoring from the USB device




The screenshot shows the 'System Restore' dialog box. The 'USB(Main Unit)' option is selected with a radio button. The text field next to it contains '20111007'. The 'File Import' option is unselected. At the bottom right, the 'OK' button is highlighted with a red box. A red arrow points from the 'OK' button to a callout box on the right.

1. Select "USB (Main Unit)", and specify the folder on the USB device from where the backed up data is restored.

2. Click "OK" to execute.

* Ensure that the USB memory device is connected to the PBX.

Restoring from the PC



The screenshot shows the 'System Restore' dialog box. The 'File Import' option is selected with a radio button. The text field next to it contains 'C:\util\Prompt1_20111'. The 'Browse...' button is highlighted with a red box. At the bottom right, the 'OK' button is highlighted with a red box. A red arrow points from the 'OK' button to a callout box on the right.

1. Select "File Import", and specify the folder and the file name on the PC from where the backed up data is restored. (You can use "Browse" button.)

2. Click "OK" to execute.

Chapter 3

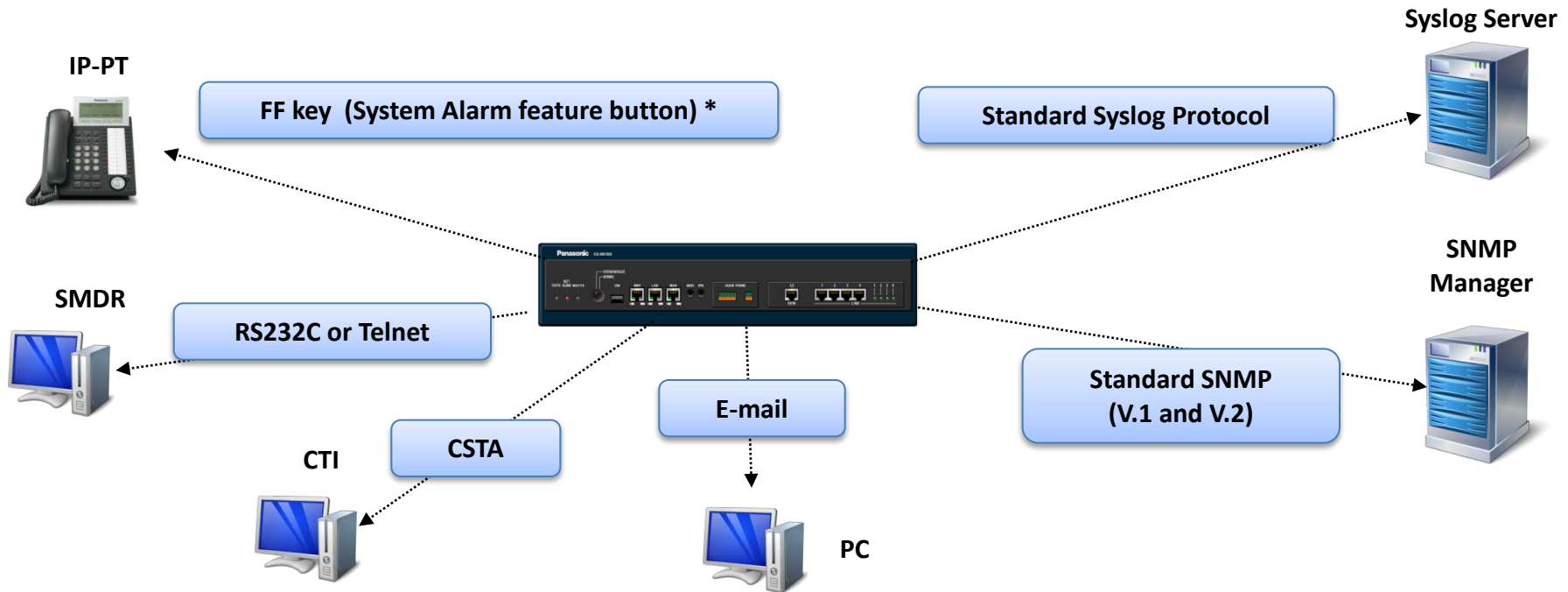
SYSTEM ALARMS

3.1. System Alarms

NS1000 can indicate that a system alarm occurred in several ways.

Error information (error codes, sub codes, etc.) are notified.

(Refer to Installation Manual for error code detail).



***: When a system error occurs, the button light turns on red. Pressing the button will show the error information on the display. UT Series / SIP Phone does not support this feature.**

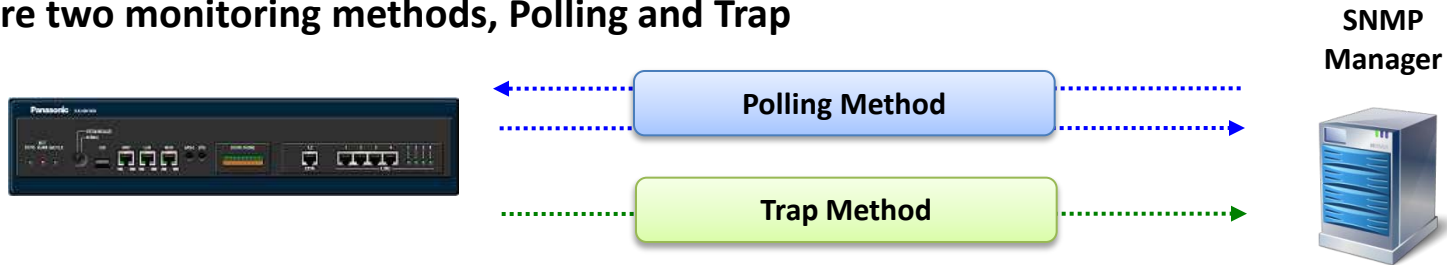
3.2 SNMP Agent (1)

SNMP Agent Features

NS1000 includes SNMP features. It is possible for a PC assigned as an SNMP manager to manage and receive PBX system status information, such as alarm information and general system activity using SNMP.

Management Information Bases (MIBs) are sent to a PC (i.e., the SNMP manager) connected to the PBX over a LAN and can then be stored and analyzed using SNMP manager software.

There are two monitoring methods, Polling and Trap



Polling Method

The SNMP Manager sends request messages to collect the status of KX-NS1000, and then KX-NS1000 sends response to the SNMP Manager.

Trap Method

KX-NS1000 sends information when a status change occurs or an alarm is detected.

- Up to 2 SNMP managers can be assigned.
- This PBX supports SNMP Protocol Version 1.0 and SNMP Version 2c.
- This PBX can only receive read-only MIBs. Write MIBs are not supported.
- This PBX supports MIB II.

3.2 SNMP Agent (2)

The KX-NS1000 will send the following types of Trap.

Type	Trap Name	Description
Standard Trap	cold Start	Information is sent after turning on the power of KX-NS1000 or resetting KX-NS1000.
	Authentication Failure	Information is sent when an unregistered Community Name and/or Manager IP address is entered.
Enterprise Specific Trap *1	Major Alarm	Information is sent when a major alarm is detected.
	Minor Alarm	Information is sent when a minor alarm is detected.

Note: In addition to the standard SNMP v1 MIB files, the NS1000 supports the Panasonic Enterprise MIB (Management Information Base) file for more detailed alarms.

This MIB file may be loaded into in the SNMP manager and it is available from the PCC CS website.

3.3 SNMP Agent Setting (1)

SNMP Agent Setting;

The SNMP Agent needs to be configured for the type of SNMP Manager being used.

'Settings' -> Network Service -> 3. Client Feature ->
3. SNMP Agent

NS1000 Web Management Console

NS1000

Users
PBX Configuration
UM Configuration
Network Service
1. IP Address/Ports
2. Server Feature
3. Client Feature
1. FTP
2. SYSLOG
3. SNMP Agent
4. Other

SNMP Agent

SNMP agent Enable Disable

SNMP version : SNMP V1

SNMP manager port : 161

MIB info

SysContact : NS1000_Master

SysName : KX-NS1000

SysLocation : Main Office

SNMP manager #1

IP address :

Host name :

TRAP port : 162

Community name : public

OK Cancel Apply

Enable/Disable SNMP, Set the SNMP Protocol (v1 or v2c) and MIB Info.

Up to 2 SNMP managers can be assigned.

3.3 SNMP Agent Setting (2)

SYSLOG (Trap Filtering)

The required TRAP output can be set.

In addition to the standard SNMP v1 MIB and MIB II files, the NS1000 supports the Panasonic Enterprise MIB (Management Information Base) file for more detailed alarms.

This MIB file may be loaded into in the SNMP manager and it is available from the PCC CS website.

Refer to the Appendix for details of the Standard MIB.

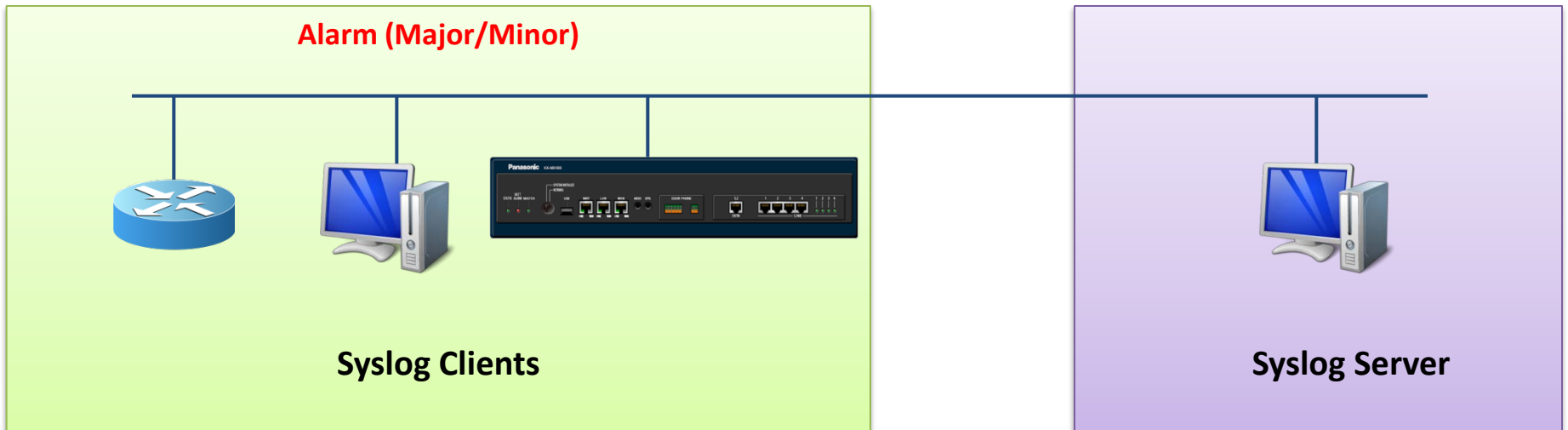
The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes the NS1000 logo, the title 'Web Maintenance Console', and several utility icons. Below the navigation bar, the user is logged in as 'INSTALLER'. The main content area is titled 'SNMP Agent'. A red box highlights the 'TRAP filtering' section, which contains a 'Syslog filtering setting' table. The table lists three categories of traps, each with 'Enable' and 'Disable' radio button options. The 'Standard TRAP' category has 'Enable' selected. The 'enterpriseSpecific (Major)' and 'enterpriseSpecific (Minor)' categories have 'Disable' selected.

Category	Enable	Disable
Standard TRAP	<input checked="" type="radio"/>	<input type="radio"/>
enterpriseSpecific (Major)	<input type="radio"/>	<input type="radio"/>
enterpriseSpecific (Minor)	<input type="radio"/>	<input type="radio"/>

3.4 SYSLOG (1)

NS1000 can send alarm information (Major alarm/Minor alarm) to a UDP Syslog server on port 514 (default).

By using Syslog, you can save all NS1000 alarms remotely to a PC. These alarms may then be managed and responded to as required.



3.4 SYSLOG (2)

SYSLOG (System Settings)

The output of SYSLOG data needs to be enabled and the IP-Address/Host Name of the SYSLOG Server need to be set.

'Settings' -> Network Service -> 3. Client Feature -> 2. SYSLOG

Enable / Disable SYSLOG data

SYSLOG Server address and port number (514 default)

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar contains a navigation menu with the following items: Users, PBX Configuration, UM Configuration, Network Service, 1. IP Address/Ports, 2. Server Feature, 3. Client Feature, 1. FTP, 2. SYSLOG (highlighted), 3. SNMP Agent, and 4. Other. The main content area is titled 'SYSLOG' and contains two sections: 'Remote Syslog' and 'Remote Syslog server'. The 'Remote Syslog' section has two radio buttons: 'Enable' (unselected) and 'Disable' (selected). The 'Remote Syslog server' section has two input fields: 'IP address/Host name' and 'Port' (with the value '514' entered). At the bottom right, there are three buttons: 'OK', 'Cancel', and 'Apply'. Red callout boxes are used to highlight the navigation path, the 'Remote Syslog' section, and the server configuration fields.

3.5 SMDR via LAN

SMDR(System Message Data Recording)

Call information (SMDR) can be output to the LAN (as well as via RS232c). Applications such as CA Call Accounting can then use this information.

'Settings' -> Network Service -> 3. Client Feature -> 2. SYSLOG

The screenshot shows the Maintenance Console interface. The left sidebar contains a tree view under 'PBX Configuration' with folders for 1.Configuration, 2.System, 3.Group, 4.Extension, 5.Optional Device, 6.Feature, 7.TRS, 8.ARS, 9.Private Network, 10.CO & Incoming Call, and 11.Maintenance. The '1.Main' folder is selected. The main area has tabs for SMDR, SMDR Options, RS232C, Maintenance, and Password. The 'SMDR Options' tab is active, showing settings for ARS Dial, Caller ID Number & Name, DDI / DID Number & Name, Secret Dial, Privacy Mode, and Caller ID Modification. A red box highlights the 'LAN' section at the bottom, which includes fields for SMDR Port Number (2300), SMDR Password (PCCSMDR), and New-Line Code for Telnet (CR + LF). A red callout box points to the LAN section with the text: 'Enter the SMDR port details (2300 default) and the SMDR Password.' At the bottom, there are buttons for OK, Cancel, and Apply. A yellow box at the bottom left contains the text: 'Further details? – Refer to the Feature Guide'.

Enter the SMDR port details (2300 default) and the SMDR Password.

LAN

SMDR Port Number : 2300

SMDR Password : PCCSMDR

New-Line Code for Telnet : CR + LF

*) Perform System Reset for changes to take effect

Further details? – Refer to the Feature Guide

3.6 CTI (TAPI / CSTA)

CTI (TAPI / CSTA)

Under study

By connecting KX-NS1000 to a CTI server over a LAN, it is possible to output local alarm information (major alarms/minor alarms) to a external PC.

EMCA CSTA Phase3

TAPI 2.1 based Panasonic original interface

3.7 System Alarms via PT

Settings to notify the system alarms via IP-PT

The extension numbers of IP-PTs that can display System Alarm Information.

Setup -> PBX Configuration -> 11.1 Main -> Maintenance Tab

The screenshot shows the NS1000 Web Maintenance Console interface. The 'Maintenance' tab is selected. A red box highlights the 'Local Alarm Display' section, which contains two input fields labeled 'Extension 1' and 'Extension 2'. A red arrow points from the text 'Specify the extension numbers.' to the 'Maintenance' tab.

The System Alarm button setting (PT Flexible Button)

Setup -> PBX Configuration -> 4.1.4 Flexible Button

The screenshot shows the NS1000 Web Maintenance Console interface for the 'Flexible Button' configuration. The 'Type' dropdown menu is open, and 'System Alarm' is selected. A red box highlights the 'System Alarm' option. A red arrow points from the text 'Select "System Alarm" as Type.' to the dropdown menu.

Key Location	Type	Parameter Selection	Extension Number	Extension Name
1	All			
	System Alarm			
2	Single CO			

Chapter 4

EMAIL NOTIFICATION

4.1 SMTP Client Settings

SMTP settings (Email Client)

So that Email notification can take place, the SMTP Server details must be entered.

'Settings' -> Network Service ->
2. Server Feature -> 6. SMTP

Maintenance Console

NS1000

Users

- PBX Configuration
- UM Configuration
- Network Service
 - 1. IP Address/Ports
 - 2. Server Feature
 - 1. DHCP
 - 2. FTP
 - 4. HTTP
 - 5. NTP
 - 6. SMTP
 - 7. IMAP4
 - 3. Client Feature
 - 4. Other

SMTP

Mail sending

Mail sender information name : KX-NS1000

Mail address :

SMTP server for relay

SMTP server address :

SMTP server Port number : 25

SMTP over TLS Enable Disable

SMTP Authentication

SMTP Authentication Enable Disable

User name :

Password :

POP Before SMTP

POP before SMTP Enable Disable

OK Cancel Apply

Enter the SMTP Client/Server information here.

Enter the details required by your Email Server. The NS1000 only sends email to the Server as a 'Client'.

4.2 Email Notification Settings

Email Notification settings (System Alarms)

The system can be configured to automatically send notification emails in the case of System Alarms or A/K Expiry.

The screenshot displays the NS1000 Web Maintenance Console interface. The left sidebar shows a navigation menu with 'Utility' selected, and '1.Alert' highlighted under it. The main content area is divided into two sections: 'System Alarm' and 'Licence Expiry'. The 'System Alarm' section has a 'Filtering Setting' with 'Major' and 'Minor' checkboxes checked. Below this are fields for 'Email Address 1', 'Email Address 2', and 'Subject', with the subject field containing 'KX-NS1000 System alarm#1'. The 'Licence Expiry' section has fields for 'Email Address 1', 'Email Address 2', and 'Subject', with the subject field containing 'KX-NS1000 License Expiry#1'. At the bottom right, there are 'OK', 'Cancel', and 'Apply' buttons. Several red callout boxes provide instructions: one points to the navigation path, another points to the filtering settings, a third points to the email address and subject fields, and a fourth points to the licence expiry notification settings.

'Maintenance' -> UTILITY -> 7. Email Notification -> 1. Alert

Set the Filter for Major/Minor or all alarms

Email Addresses and subject are set here.

'License expiry' Notification Addresses are set here. Notification will be sent 5 days before expiry.

4.3 Email Log Files

System Log Files (Email)

System Troubleshooting data files can be emailed from the system .

The screenshot shows the 'Maintenance Console' interface. A red callout box at the top left contains the navigation path: 'Maintenance' -> UTILITY -> 7. Email Notification -> 2. System Analysis. The 'Utility' menu is expanded, showing options like 1.Diagnosis, 2.File, 3.Log, 4.Monitor/Trace, 5.Report, 6.Activation Key Installation, 7.Email Notification, 1.Alert, 2.System Analysis (highlighted), and 3.Test Email. The 'System Analysis' section has a 'Log File Type' dropdown menu with 'Error Log' selected. A red callout box points to this dropdown with the text 'Select the desired log file type..'. Below the dropdown are input fields for 'Email Address 1', 'Email Address 2', and 'Subject'. At the bottom right are 'Execute' and 'Cancel' buttons.

This information, together with the system parameter file (DCSYS) or system backup, is required for detailed fault analysis.

4.4 Test Email

TEST Email (SMTP Client)

To test the SMTP Client setting are correct, it is possible to send a test email.

'Maintenance' -> UTILITY -> 7. Email Notification -> 3. Test Email

The screenshot displays the 'Maintenance Console' interface. The top navigation bar includes a home icon, a wrench icon, and a gear icon. The main content area is titled 'Test Email' and contains three input fields: 'Email Address 1', 'Email Address 2', and 'Subject'. The left sidebar shows a tree view under 'Utility' with the following items: 1. Diagnosis, 2. File, 3. Log, 4. Monitor/Trace, 5. Report, 6. Activation Key Installation, 7. Email Notification (expanded), 1. Alert, 2. System Analysis, and 3. Test Email (highlighted). The 'Execute' and 'Cancel' buttons are located at the bottom right of the form.

Enter the required email addresses and subject field.

Click 'Execute' to send.

3.5. E-mail Report

E-mail sending status can be confirmed.

Maintenance -> Utility -> 5.4 E-mail Report

The screenshot shows the NS1000 Web Maintenance Console interface. The left sidebar is highlighted with a red box, showing the navigation menu with 'Utility' selected and '4.E-mail Report' highlighted. The main content area displays the 'E-mail Report' page with a table of email events. The 'Send Status' column is highlighted with a red box, and a red arrow points from it to a callout box.

Index	E-mail ID	Event Kind	User Name	Mailbox	Date	Time	Message Status	Email Address	Send Status
1	2011092614084431E24CC2	Test	system	-	26-SEP-2011	14:08	-	dealer@test.com	Failed
2	2011092614071713BABF75	Test	system	-	26-SEP-2011	14:07	-	dealer@test.com	Sent

E-mail sending status is displayed.

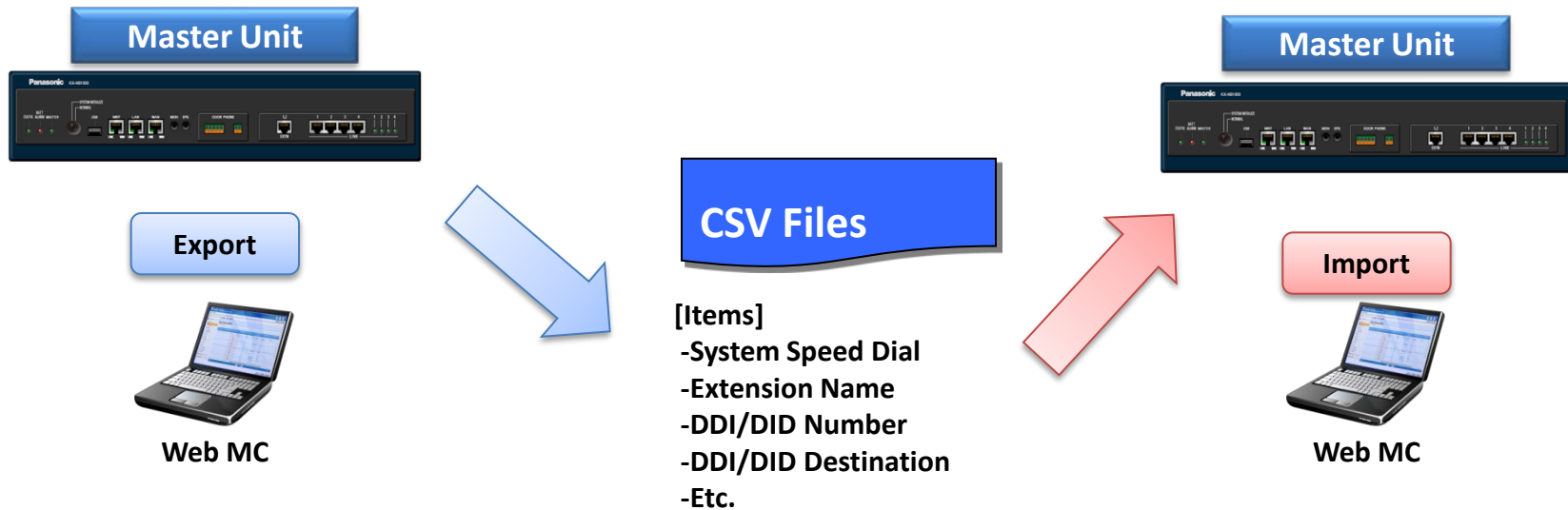
Chapter 5

DATA IMPORT AND EXPORT (.CSV)

5.1 Export / Import Tool (.csv) (1)

Several types of data can be exported / imported using the Web MC.

Exported data is saved as CSV file. The data can be imported to other units.



- The items to be exported / imported are selectable.
- The CSV file format is the same as KX-TDE/NCP. So, the CSV file exported from KX-TDE/NCP can be imported to KX-NS1000. However, there is no 'PBX-Replacement' tool.

5.1 Export / Import Tool (.csv) (2)

Exportable / Importable items (List)

Using the Import/Export Tool, some data can be transferred between systems;

'Maintenance' -> Tool ->
6/7. Import/Export

The screenshot shows the Maintenance Console interface. The top navigation bar includes 'Maintenance Console', a user dropdown 'NS1000', and several icons. The left sidebar contains a 'Tool' menu with 12 items. A red box highlights items 6 through 7: '6.Import' and '7.Export'. A red arrow points from the text '6/7. Import/Export' to this box. The main content area displays a table with two columns: 'Item' and 'Description'.

Item	Description
Speed Dial and Caller ID	Name, Dial, CLI destination
Incoming Call - DDI/DID Table	DDI/DID Number, Name, Destination, Tenant, etc.
ARS - Leading Digit	Leading Digits, Additional Dial Digits, Route Plan Number
ARS - Except Code	Exception Code
ARS - Routing Plan	Routing Plan
Wired Extension	Extension Number, Name
PS Extension	Extension Number, Name
Quick Dial	Dial, Phone Number
SIP Extension	Extension Number, Password
V-IPGW16 GW Settings	GW Name, GW IP Address, Protocol, etc.
V-IPGW16 DN2IP	Leading Number, Remaining Number of Digits, etc.
V-SIPGW16 Settings	SIPGW16 Settings
V-SIPGW16 Provider	SIPGW16 Provider

*Refer to the PC programming Manual for details.

Chapter 6

EXTENSION LISTS

6.1 Extension List View

Extension List View

Specific Ext Names/Numbers can be found easily using the Extension List View Tool.

'Maintenance' -> Tool -> 5. Extension List View

1. System Data Backup To USB
2. BRI Automatic Configuration
3. NDSS Link Data Clear
4. Call Pickup For My Group
5. Extension List View
6. Import
7. Export
8. Screen Customise
9. UM data backup
10. UM data restore
11. UM backup history
12. Contact information
Utility

Extension Number	Type	Extension Name	Site	Shelf	Slot	Port
101	Intercom		1		1	1
102	Intercom		1		1	2
230	SIP/IP-PT		1	Virtual	47	1
235	SIP/IP-PT		1	Virtual		
500	UM	Voicemail 1	-			
501	UM	Voicemail 2	-			
502	UM	Voicemail 3	-			
503	UM	Voicemail 4	-			
504	UM	Voicemail 5	-			
505	UM	Voicemail 6	-			
506	UM	Voicemail 7	-			
507	UM	Voicemail 8	-			
508	UM	Voicemail 9	-			
5101			1	1	4	1
5102			1	1	4	2
5103			0	1	4	3
5801	OGM (DISA)	DISA 01	-	-	-	-
5802	OGM (DISA)	DISA 02	-	-	-	-

Extension Number information for each site can be see. UM and OGM are shown for Local Site.

Page 1 of 8

Close

Chapter 7

PORT SETTINGS (LAN/MNT) DNS, PORT SPEED, DUPLEX, MIRROR, PING

7.1 IP-Address Information (1)

IP-Address Information (LAN Port / DNS)

The LAN/DNS IP settings can be checked and re-programmed here.

DHCP can also be enabled / Disabled for LAN/DSP.

'Settings' -> Network Service->
51. IP-Address/Ports -> Basic Settings

The screenshot displays the 'Network Service' configuration interface. The left sidebar shows a navigation tree with 'Network Service' expanded to '1. IP Address/Ports'. The main area is titled 'IP Address/Ports' and has tabs for 'Basic Settings', 'Advanced Settings', and 'Reference'. The 'Basic Settings' tab is active, showing two sections: 'LAN Setting' and 'DNS Setting'. In the 'LAN Setting' section, the 'DHCP Port Number' is 68, and the 'Obtain an IP address automatically' option is selected. Below this, the 'IP Address' is 192.168.0.101, 'MAC Address' is 00:80:F0:C6:0C:8E, 'Subnet Mask' is 255.255.255.0, and 'Default Gateway' is empty. In the 'DNS Setting' section, the 'Port Number' is 53, and the 'Use the following DNS server address' option is selected. Below this, 'Preferred DNS IP Address' and 'Alternative DNS IP Address' are both empty.

Set DHCP Enable/Disable for LAN Port
(Disable Recommended)

Basic Settings

LAN Setting

DHCP Port Number : 68
 Obtain an IP address automatically
 Use the following IP address

IP Address : 192.168.0.101
MAC Address : 00:80:F0:C6:0C:8E
Subnet Mask : 255.255.255.0
Default Gateway :

IP Address for LAN Port can be seen here
(If changed, Restart is required)

DNS Setting

Port Number : 53
 Obtain DNS server address automatically
 Use the following DNS server address

Preferred DNS IP Address :
Alternative DNS IP Address :

DNS Setting is made here

7.1 IP-Address Information (2)

IP-Address Information (DSP)

The DSP IP settings can be checked and re-programmed here.

DHCP can also be enabled / Disabled for DSP.

'Settings' -> Network Service->
51. IP-Address/Ports -> Basic Settings

DSP IP Setting

- Obtain DSP IP address automatically
- Use the following DSP IP address

DSP Card #1 - 1

IP Address : 192.168.0.102

MAC Address : 00:80:F0:C6:0C:90

DSP Card #1 - 2

IP Address : 192.168.0.103

MAC Address : 00:80:F0:C6:0C:91

DSP Card #2 - 1

IP Address : 192.168.0.104

OK Cancel Apply

DHCP for DSP is set here (Enabled by Default at Installation)

IF DSP Addresses are changed, System Restart is required.

7.2 Port Settings

Port Settings (Speed / Duplex / Mirroring)

The Speed / Duplex settings of the LAN / MNT ports can be set here.

The MNT port can also be configured as a Mirror port.

The screenshot displays the NS1000 Web Maintenance Console interface. The top navigation bar includes a globe icon, the text 'NS1000 | Web Maintenance Console', and several utility icons. A red box highlights the globe icon. The left sidebar contains a tree view with categories: PBX Configuration, UM Configuration, Network Service, and IP 1. IP Address/Ports. The 'IP 1. IP Address/Ports' item is highlighted in yellow. The main content area has three tabs: 'Basic Settings', 'Advanced Settings' (which is selected and highlighted in orange), and 'Reference'. Under 'Advanced Settings', there are two sections. The first section, 'LAN Port', contains two rows: 'Speed & Duplex' with a dropdown menu set to 'Auto', and 'Maintenance Port' with another 'Speed & Duplex' dropdown set to 'Auto'. A red box encloses these two rows, and a red arrow points from a callout box to the 'Auto' dropdowns. The second section, 'Port Mirroring', contains a 'Packet kind for mirroring' dropdown menu set to 'LAN (All packets)'. A red box encloses this section, and a red arrow points from a callout box below to it.

'Settings' -> Network Service->
51. IP-Address/Ports -> Advanced Settings

Set LAN/MNT port Speed / Duplex

Enable Port mirroring via MNT Port.
(Installer Level Only)

NB: Once Port Mirroring is enabled on the MNT Port, you will not be able to use the MNT port to access the WebMC. Use the LAN port to login and change the port mirror settings back.

7.3 'Ping'

Ping UTILITY

To aid network troubleshooting, the Ping Utility can be used.

Ping is most reliable within a single broadcast domain.

'Maintenance' -> Utility-> 2. Ping

1. Enter the IP Address to be Pinged

IP Address: 192.168.0.102

2. Click 'Test'

3. PING Result is displayed.

```
PING 192.168.0.102 (192.168.0.102) 56(84) bytes of data:\n64 bytes from 192.168.0.102: icmp_seq=1 ttl=64 time=0.274 ms\n64 bytes from 192.168.0.102: icmp_seq=2 ttl=64 time=0.183 ms\n64 bytes from 192.168.0.102: icmp_seq=3 ttl=64 time=0.179 ms\n64 bytes from 192.168.0.102: icmp_seq=4 ttl=64 time=0.182 ms\n64 bytes from 192.168.0.102: icmp_seq=5 ttl=64 time=0.185 ms\n\n--- 192.168.0.102 ping statistics ---\n5 packets transmitted, 5 received, 0% packet loss, time 3997ms\nrtt min/avg/max/mdev = 0.179/0.200/0.274/0.039 ms
```

NB: Not all IP-Addresses may return a 'Ping' i.e. Routers usually block Ping Requests.

Chapter 8

ERROR LOGS

8.1 Error Codes (PT, SMDR, CTI)

How to read error codes.

ERR #100, (00*00001),
(1) (2)

Number in the Example	Item	Description
(1)	Error Code	Shows three-digit error code.
(2)	Sub Code	Shows 8-digit sub code (BBW0YYZZ). BB: Site number (00 to 15) W: Slot type (Physical shelf: blank, Virtual shelf: *) 0: Unit number YY: Slot number (00–32) ZZ: Port number

* For more information, please refer to the following slides.

8.2 How to show Error Log via Web MC (1)

How to display system error information via Web MC

Maintenance -> Utility -> 3.1 Error Log

Click "Minor" or "Major" to display

Date	Time	Level	Code	Error Message
13/10/2011	10:19:31	2	10000	System Restart
13/10/2011	10:18:34	2	10000	System Restart
13/10/2011	10:18:01	4	50507	Common process error (Minor)
13/10/2011	10:17:27	4	50507	Common process error (Minor)
13/10/2011	10:17:26	4	50596	Common process error (Minor)
13/10/2011	10:16:52	4	50596	Common process error (Minor)
12/10/2011	17:33:09	10	10000	AC power down
12/10/2011	17:31:13	533	50401	Unit start up error
12/10/2011	17:25:47	2	10000	System Restart
12/10/2011	17:25:12	4	50507	Common process error (Minor)
12/10/2011	17:24:35	4	50596	Common process error (Minor)
12/10/2011	17:17:17	56	50101	UPS power supply end
12/10/2011	17:09:21	54	50100	UPS connected
12/10/2011	17:02:26	2	10000	System Restart
12/10/2011	17:01:23	4	50507	Common process error (Minor)

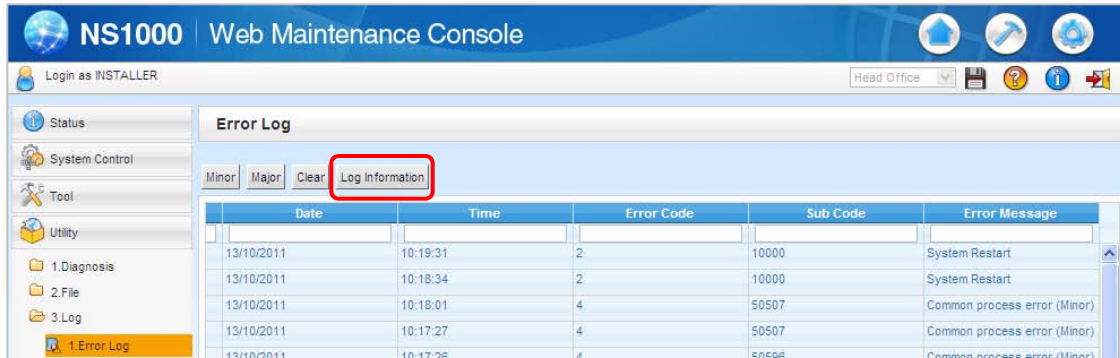
Save Cancel

Click "Save" to save as a file.

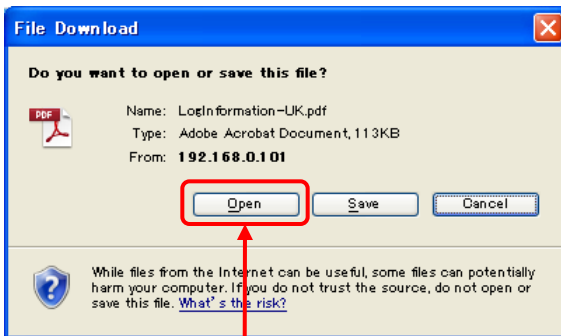
8.2 How to get Error Codes on Web MC (2)

1

Maintenance -> Utility -> 3.1 Error Log



2



Click "Open".

3

Error information will be opened (PDF file).

List of Errors and Solutions

The tables below list the errors and their solutions. When an error whose error code is indicated with "*" occurs in the PBX, the ALARM indicator on the front of the shelf turns on red, and the system logs the error information.

When the error conditions indicated by the error codes "053", "058", "091", "092", "510", and "530" are recovered, the ALARM indicator will turn off automatically, indicating successful troubleshooting. When other errors are logged, the ALARM indicator will turn off only when the log for major or minor errors is cleared from the Maintenance Console.

In other words, the ALARM indicator will turn off under the following conditions:

- When the errors "053", "058", "091", "092", "510" and "530" are logged: when the error conditions are recovered
- When other errors are logged: when the log for major or minor errors is cleared from the Maintenance Console

Optional Service Card Initial Self Diagnosis

Error Code	Error Message	PROBABLE CAUSE	SOLUTION
215	Framer IC access error	• Optional service card malfunction	• See if the corresponding optional service card is installed properly (Turn off the power switch of the PBX before doing so) • Set the status of the optional service card to OUS, then to INS • Replace the corresponding optional service card

* For more information, please contact your sales companies.

Appendix - 1

MIB – MANAGEMENT INFORMATION BASE

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyse information.

Both Standard MIB (MIB2) and Enterprise MIB is supported.

System Group (1.3.6.1.2.1.1)

Object ID	Item	Description
1	sysDescr	Information of Hardware type and Software version of the Device.
2	sysObjectID	Object identifier of this product.
3	sysUpTime	Elapsed time since the system was restarted.
4	sysContact	Device Administrator.
5	sysName	Name of Device.
6	sysLocation	Installation Location of Device.
7	sysService	Support Layer.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

Interface Group (1.3.6.1.2.1.2)

Object ID	Item	Description
1	ifNumber	The number of Network Devices.
2	IfTable (NA)	Management Table by each Network Device.
2.1	IfEntry (NA)	Components of ifTable.
2.1.1	ifIndex	Each interface identifier.
2.1.2	ifDescr	Explanation of Interface.
2.1.3	ifType	Type of Interface.
2.1.4	ifMtu	Maximum Datagram Length which can be sent/received.
2.1.5	ifSpeed	Maximum Transfer Speed.
2.1.6	ifPhysAddress	Physical Address (MAC Address).
2.1.7	ifAdminStatus	The desired state of the interface.
2.1.8	ifOperStatus	The current operational state of the interface.
2.1.9	ifLastChange	The value of sysUpTime at the time the interface entered its current operational state (up or down).
2.1.10	ifInOctets	The number of Octets received.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

Interface Group (Continued) (1.3.6.1.2.1.2)

Object ID	Item	Description
2.1.11	ifInUcastPkts	The number of Unicast Packets delivered to a higher-layer protocol.
2.1.12	ifInNUcastPkts	The number of Non Unicast Packets delivered to a higher-layer protocol.
2.1.14	ifInErrors	The number of inbound Packets that contained errors.
2.1.15	ifInUnKnownProtos	The number of Packet received which are discarded because of an unknown/unsupported protocol.
2.1.16	ifOutOctets	The number of Octets transmitted.
2.1.17	ifOutUcastPkts	The number of Unicast Packets which are received from upper protocol.
2.1.18	ifOutNUcastPkts	The number of Non Unicast Packets which are received from upper protocol.
2.1.21	ifOutQLen	The length of the output packet queue (in packets).
2.1.22	ifSpecific	Relevant MIB object identifier.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

IP Group (1.3.6.1.2.1.4)

Object ID	Item	Description
1	ipForwarding	The value which indicates operation availability as a router (whether Datagram is transferred or not).
2	ipDefaultTTL	Default value for IP Packet TTL (Time to Live).
3	ipInReceives	The total number of Packets received (including packet received in error).
4	ipnHdrErrors	The number of Packets discarded due to errors in their header.
5	ipInAddrError	The number of Packets discarded because IP Address of the destination was invalid.
7	ipInUnknownProtos	The number of Packets discarded because the protocol was unknown/unsupported.
8	ipInDiscards	The number of incoming Packets discarded because of an insufficient reception buffer.
9	ipInDelivers	The total number of Packets received (including ICMP) normally.
10	ipOutRequests	The total number of IP Packets (ICMP) which are tried to be transmitted (relay Packets is not included).

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

IP Group (continued) (1.3.6.1.2.1.4)

Object ID	Item	Description
13	ipReasmTimeout	The maximum number of seconds required in the buffer to rebuild a fragmented Packet.
14	ipReasmReqds	The number of Packets that required rebuilding from a fragmented state.
15	ipReasmOKs	The number of Packets that were rebuilt correctly from a fragmented state.
16	ipReasmFails	The number of Packets that could not be rebuilt correctly from a fragmented state.
17	ipFragOKs	The number of Packets that were fragmented correctly.
18	ipFragFails	The number of Packets that could not be fragmented correctly.
19	ipFragCreates	The number of IP datagrams created due to fragmentation.
20	ipAddrTable (NA)	Management Table of addressing information relevant to this entity's IP addresses.
20.1	IpAddrEntry (NA)	Components of ipAddrTable.
20.1.1	IpAdEntAddr	IP Address.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

IP Group (continued) (1.3.6.1.2.1.4)

Object ID	Item	Description
20.1.2	IpAdEntIfindex	Index value of the Interface which is assigned to IP address.
20.1.3	IpAdEntNetMask	The Subnet Mask associated with IP address.
20.1.4	ipAdEntBcastAddr	Broadcast Address Value associated with IP Address.
20.1.5	IpAdEntReasmMaxSize	The size of the largest IP Datagram which can be sent/received through IP Address.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

ICMP Group (1.3.6.1.2.1.5)

Object ID	Item	Description
1	cmpInMsgs	The total number of ICMP messages received (excluded, with error).
2	icmpInErrors	The total number of ICMP messages received which contained error.
8	icmpInEchos	The total number of ICMP echo request messages received.
9	icmpInEchoReps	The total number of ICMP echo answering messages received.
14	icmpOutMsgs	The number of ICMP messages which were sent.
15	icmpOutErrors	The number of ICMP messages which were not sent because of error.
21	icmpOutEchos	The number of ICMP Echo request messages sent.
22	icmpOutEchoReps	The number of ICMP Echo Reply messages sent.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

TCP Group (1.3.6.1.2.1.6)

Object ID	Item	Description
1	tcpRtoAlgorithm	The algorithm used to determine the timing of retransmitting when a response was unacknowledged.
2	tcpRtoMin	Minimum value permitted for retransmission timeout (in milliseconds).
3	tcpRtoMax	Maximum value permitted for retransmission timeout (in milliseconds).
4	tcpMaxConn	Maximum number of TCP connections which can be supported.
5	tcpActiveOpens	The total number of Active open TCP connections.
6	tcpPassiveOpens	The total number of Passive open TCP connections.
7	tcpAttemptFails	The total number of connections error.
8	tcpEstabResets	The total number of resets.
10	tcpInSegs	The total number of segments received.
11	tcpOutSegs	The total number of segments sent.
12	tcpRetransSegs	The total number of segments retransmitted.

Appendix - MIBs (Management Information Bases)

NS1000 supports MIBs for SNMP manager to analyze information.

TCP Group (1.3.6.1.2.1.6)

Object ID	Item	Description
14	tcpInErrs	The total number of segments received in error.
15	tcpOutRsts	The total number of TCP segments sent containing the RST flag (reset connection).

Appendix - 2

RECOMMENDED USBS

Recommended Models Table

Each model might have several items which each have different capacity.

The capacity shown in this table is the capacity of the items which are tested.

Manufacturer	Model	Capacity
Transcend	JetFlash300	2GB
	JetFlash620	32GB
Imation	NANO-f	2GB , 4GB
Lexar	Jump Drive RETRAX	4GB
pqi	Traveling Disk U262	4GB
CORSAIR	Flash Voyager mini	4GB
San Disk	Cruzer Micro	2GB
HP	v155w	4GB
Apacer	AH128	8GB
	AH129	8GB
OCZ	Rally2 Dual Channel	32GB

MAINTENANCE COMPLETE

THE END.