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Administrators Guide

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Introduction

This Administrator's Guide outlines the key features of the SoundStation IP 3000 - 3Com NBX conference phone and gives step-by-step instructions for installation and configuration.

This guide is for System Administrators or Network Administrators who will deploy and support this product in their networks. To use this guide, you should have a working knowledge of the 3Com NBX system.

Overview

The SoundStation IP 3000 - 3Com NBX has been specifically designed to work with 3Com NBX Call Processors. It will not work with other VoIP protocols like H.323.

Typical Deployment

A typical deployment of the SoundStation IP 3000 - 3Com NBX is shown in Figure 1.

Figure 1 - Typical 3Com NBX Network Setup

SoundStation IP 3000 - 3Com NBX

NBX Business Phone

Ethernet Switch

3Com NBX Call Processor

Public Switched Telephone Network
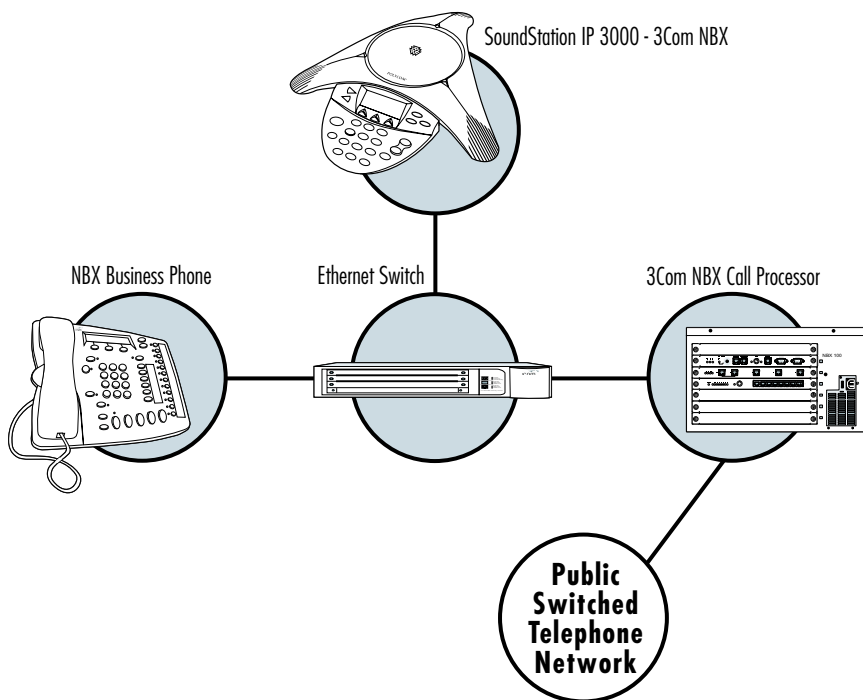
Features

This section provides a brief overview of the characteristics and features of the SoundStation IP 3000 - 3Com NBX.

▼ Frequency response of 300 Hz to 3500 Hz

▼ Full Duplex/Echo Cancellation, Clarity® by Polycom

▼ Silence Suppression

▼ Comfort Noise Generation

▼ User-Selectable Ringer tones

▼ Audio codec support:
  ▼ G.711 µ-law
  ▼ ADPCM

▼ Multiple Call Support (up to 2 calls)

▼ Call Hold

▼ Conference

▼ Redial

▼ Call Transfer

▼ DTMF (Dual-Tone Multi-Frequency)

▼ Real-time Call Statistics

▼ Locally managed configuration options

▼ Local Speed Dial Directory

▼ Operation in Layer 2 or Layer 3 environments

▼ Three context-sensitive soft keys

Please refer to the User Guide for more detailed information on how to use the phone.

Communication Protocol Options

The SoundStation IP 3000 - 3Com NBX uses the NBX protocols and can operate in either a shared/switched topology or a routed network.

When connected to the same physical network as the NBX Call Processor, the SoundStation IP 3000 - 3Com NBX will auto-discover the NBX Call Processor using the NBX protocol.

If the NBX Call Processor is located on a different network segment, or if an NBX Call Processor can not be found, the SoundStation IP 3000 - 3Com NBX will switch to Layer 3 mode and use either DHCP or statically configured IP parameters to detect and register with the NBX Call Processor.

Pre-Installation Information

Collect the following information
before installing the SoundStation
IP 3000 - 3Com NBX:

| Layer 2 Mode	Layer 3 Mode Using DHCP	Layer 3 Mode Using Static IP
None	IP address of the NBX	IP address of the Phone IP address of Router IP address of the DNS Server (if used) Domain Name (if used)

DHCP Server Configuration

If using the Sound Station IP 3000 -
3Com NBX in Layer 3 Mode using DHCP,
ensure that the following DHCP options
are configured on the DHCP server:

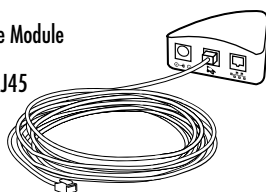| Option Number	Description	Example
1	Subnet Mask	255.255.255.0
3	Router	172.16.5.1
6	DNS Server	172.16.5.100
184	NBX Call Processor Address	172.16.5.99

Installation

The SoundStation IP 3000 - 3Com NBX ships with the following items.

SoundStation IP 3000 - 3Com NBX

One 6 Foot Long Ethernet Cable
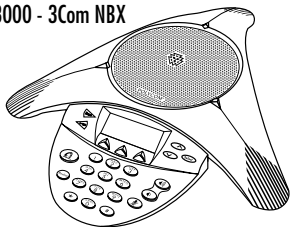
One Power Cord

One Power Interface Module

One 25 Foot Long RJ45 Keyed Cable
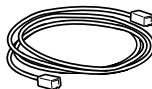
Installation Instructions and Users Guide

Quick Reference Card

Warranty Card

One Power Brick
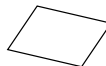
Connect the SoundStation IP 3000 - 3Com NBX as follows:

1 Place the SoundStation IP 3000 - 3Com NBX on a table in a noise free environment.

2 Connect the 6 feet long Ethernet cable between the LAN port of the PIM and an Ethernet switch port.

3 Connect the free end of the 25 feet long keyed RJ45 cable to the bottom of the phone. (The other end of this cable should come pre-connected to the PIM.)

4 Connect the power adapter to the PIM.

5 Plug the Power adapter into an AC outlet with the supplied power cord.

6 Once connected to the AC outlet, the SoundStation IP 3000 - 3Com NBX will power up and go through a boot-up sequence. It will take approximately 15 seconds before any information is displayed on the LCD.

Figure 2 -
Connecting the SoundStation IP 3000 - 3Com NBX

PIM

5 AC Power

4 AC Adapter

2 Data Network Port

3 Bottom of IP 3000 - 3Com NBX
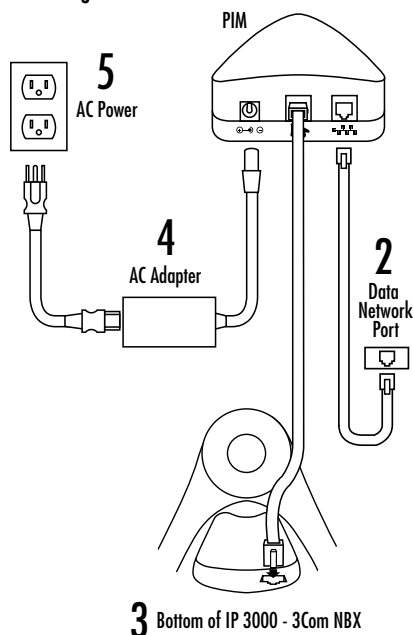
Configuration

SoundStation IP 3000 - 3Com NBX configuration is managed locally at the phone using the LCD display the keypad. The system offers two levels of configuration privileges:

▼ User

▼ Administrator

Administrative privileges are obtained through a login process that requires an administrative password.

User Accessible Configuration Options

Users have limited access to the phone's configuration. Specifically, users only have access to the speed dial, contrast and ringer settings. In addition there is read only access to system information.

Speed Dials

Users have unrestricted access to the Speed Dials to edit entries, search for entries, and place phone calls.

Settings

User may change the following settings:

▼ LCD Contrast

▼ Ringer

System Information

Users have read-only access to other SoundStation IP 3000 - 3Com NBX configuration information including Network parameters, and versions of software.

Administrator Accessible Options

Administrator options are password protected. The default password is ✳✳#

In addition to any user settings, the administrator has access to the following parameters:

Network Setup

▼ Network parameters (e.g. DHCP)

▼ NBX Call Processor (MAC, IP)

Diagnostics

▼ Ping

▼ Network Statistics

▼ Call Statistics

Ethernet Configuration

▼ Ethernet port

Configuration & SW Update

▼ Software updates

Restore Defaults

▼ Restore configuration to factory default

Change Passcode

▼ Managing phone passwords

Local Configuration

MAIN MENU
- Access Local Speed Dials
- Check Voice Mail
- Call Pickup
- Call Park
- Do Not Disturb
- Fwd Calls to Voice Mail
- Flash Hook
- Local Functions

Program Speed Dials

Settings
- Contrast
- Language
- Ringer

Admin Setup

System Information

Network Setup
- DHCP Enable/Disable
- IP Address
- IP Mask
- Router IP Address
- Domain
- DNS
- NCP MAC
- DHCP NCP IP
- User Defined NCP IP
- TFTP
- Use Alt TFTP
- Alt TFTP

Diagnostics
- Ping
- Network Statistics
- Call Statistics
- DSP Statistics

Ethernet Port Config

Update Software
- Update Software

Restore Defaults

Change Password

To enter the Administration Configuration menu:

1 Press the **Menu** hardkey

2 Select Local Functions

3 Select Admin Setup

4 Enter the password

Use the scroll and Select keys to navigate through the menu. The **Menu** key moves up a level and, the **Exit** key closes the menu.

Summary of Configuration Data

Parameter	User Controlled	Administrator Controlled	Available Options	Default Value	Comment
DHCP	N	Y	Enable/Disable	Enable	-
IP Address	N	Y	-	-	*See Note*
IP Mask	N	Y	-	-	*See Note*
Router1	N	Y	-	-	*See Note*
Domain	N	Y	-	-	-
DNS	N	Y	-	-	-
NCP Mac	N	Y	-	-	-
DHCP NCP IP	N	Y	-	-	-
User Defined NCP IP	N	Y	-	-	-
TFTP Server	N	N	-	-	Obtained from DHCP
Use Alternate TFTP	N	Y	Y/N	N	-
Alternate TFTP	N	Y	-	-	-
Server	-	-	-	-	-
Ethernet Port Configuration	N	Y	Auto, 100-FDX, 100-HDX,10-FDX, 10-HDX	Auto	-
Language	Y	Y	English	English	-
LCD Contrast	Y	Y	Levels 1-24	8	-
Ringer	Y	Y	Pro, Biz, Euro, Chirp, Bell	Pro	-
Volume	Y	Y	Levels 1-10	4	-
Administrator PW	N	Y	-	**#	-
MAC Address	N	N	-	-	-
NCP MAC Address	N	Y	-	-	-
Host Name	N	N	-	-	-
Boot Version	N	N	-	-	Read-only
OS Version	N	N	-	-	Read-only
SW Version	N	N	-	-	Read-only
Software File Name	N	N	-	-	Read-only
Hardware Revision	N	N	-	-	Read-only
Dial Tone	N	N	Tone 1	Tone 1	
Codec	N	N	G.711	G.711	

Note: IP address, mask and Router1 are either obtained from DHCP or set by Admin for Static IP Operation.

Restoring Default Configuration

1 Press the **Menu** Key.

2 Scroll down to the Local Functions and press **Select**.

3 Scroll down to Admin Setup and press **Select**.

4 Enter the Administrator Password (default is ∗∗#)

5 In the Admin Menu scroll down and choose Restore Defaults. Press **Select**.

6 A message will appear requesting a confirmation of the action.

7 Press Confirm. SoundStation IP 3000 - 3Com NBX will restore the configuration and automatically restart.

Upgrading the Firmware

The SoundPoint IP 3000 – 3Com NBX runs firmware locally on the phone to provide all of the call features and the interaction with the NBX Call Processor. Firmware updates will be provided from time to time. Polycom recommends that the firmware be updated as soon as possible when new versions are released. These updates can be loaded onto the SoundPoint IP 3000 – 3Com NBX using the NBX NetSet Software Upgrade Utility.

To initiate the process:

1 Log into the NBX system

2 Go to Operations -> SW Upgrade

3 Enter name of upgrade file e.g. filename.taz

4 Click upgrade

The upgrade process will take a few minutes.

When either the phone or the NBX Call Processor restarts the new firmware will be downloaded to the phone.

Managing the SoundStation IP 3000 - 3Com NBX On the NBX System

Adding, removing or modifying a SoundStation IP 3000 – 3Com NBX telephone to the NBX system, is done using the NBX NetSet utility.

There are two methods for Adding new telephones to the system:

▼ The simplest and most common method is Auto Discovery. When Auto Discovery is enabled, a new SoundStation IP 3000 – 3Com NBX connected to the LAN will be assigned the next available telephone number. This number will appear on the telephone's display panel.

▼ If Auto Discovery is disabled, new SoundStation IP 3000 – 3Com NBX telephones must be configured using Manual Mode. Both methods are described in detail in the NBX Admin Guide supplied with the NBX Call Processor.

SoundStation IP 3000 - 3Com NBX appears in the NBX administration utilities as device of the type ThirdParty

Appendix: A

Restarts

The SoundStation IP 3000 - 3Com NBX
will restart under the following conditions.
After certain configuration changes
(i.e. Changing DHCP/Static IP Mode
or the Router IP address).

Special Features

SoundStation IP 3000 - 3Com NBX
recognizes several special key sequences
that are not available through the regular
user interfaces to allow special features to
be invoked.

The following describes the commands that
may be entered from the keyboard.

Keyboard Command	Accessible State	Feature Description
*123#	Menu	Restart the Phone

Statistics

The phone maintains statistics related to
the Network, Last Call, and DSP usage.

Network

The following Network related statistics
are displayed on the screen:

▼ Packets Received - Rcv

▼ Packets Transmitted - Xmt

▼ Receive Errors - REr

▼ Broadcast Packets - BCast

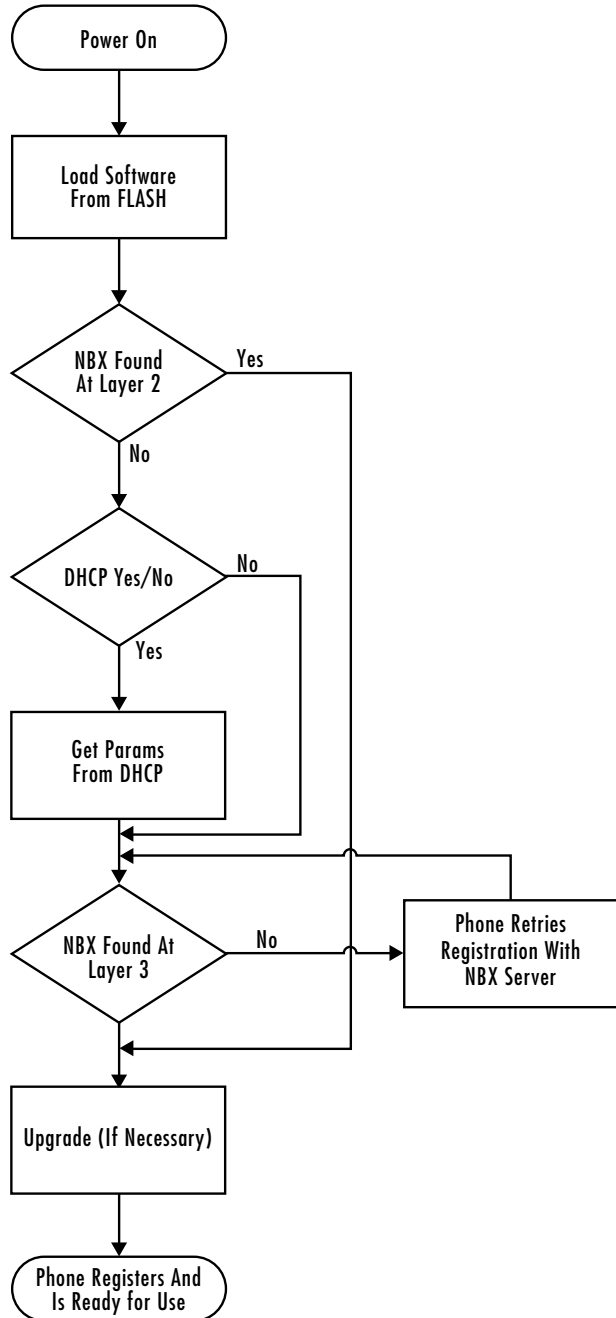Statistics can be reset by pressing
the **Clear** softkey.

Calls

The statistics for each call
is maintained separately.

The following statistics are displayed
on the screen:

▼ Receive Codec - RxType

▼ Transmit Codec - TxType

▼ Receive Packet Count- RxCnt

▼ Transmit Packet Count - TxCnt

▼ Receive Discard - RxDisc

▼ RxLost - RxLost

Call statistics are kept until
a new call is placed.

When the SoundStation IP 3000 - 3Com NBX is powered up, it will follow the Start-Up Sequence illustrated in the associated diagram.

```
        ┌─────────────────┐
        │    Power On     │
        └────────┬────────┘
                 │
        ┌────────▼────────┐
        │  Load Software  │
        │   From FLASH    │
        └────────┬────────┘
                 │
            ◇────────◇
           ╱ NBX Found ╲      Yes
          ╱  At Layer 2  ╲──────────┐
           ╲            ╱            │
            ◇────┬─────◇            │
                 │ No               │
                 │                  │
            ◇────────◇             │
           ╱          ╲      No     │
          ╱ DHCP Yes/No ╲──────┐   │
           ╲            ╱       │   │
            ◇────┬─────◇       │   │
                 │ Yes          │   │
        ┌────────▼────────┐    │   │
        │   Get Params    │    │   │
        │   From DHCP     │    │   │
        └────────┬────────┘    │   │
                 │◄────────────┘   │
                 │◄────────────────┘
            ◇────────◇
           ╱           ╲     No      ┌──────────────────┐
          ╱ NBX Found At ╲──────────►│  Phone Retries   │
          ╲   Layer 3    ╱           │ Registration With│
           ◇────┬───────◇◄───────────│   NBX Server     │
                │                    └──────────────────┘
        ┌───────▼─────────┐
        │Upgrade (If      │
        │ Necessary)      │
        └───────┬─────────┘
                │
        ┌───────▼─────────┐
        │Phone Registers  │
        │And Is Ready     │
        │for Use          │
        └─────────────────┘
```

Appendix C: Troubleshooting

Below are some suggestions for troubleshooting the phone.

LCD/LED Not On

Make sure the SoundStation IP 3000 - 3Com NBX is plugged in properly and power is applied.

'Obtaining IP' Address Message Never Goes Away

SoundStation IP 3000 - 3Com NBX is set up for DHCP and is unable to contact the DHCP server. Check that the device is plugged in to a network port, that it has access to a DHCP server, and that the DHCP server is configured properly. The DHCP server may have run out of leases.

'Starting Application, Please Wait' Message Never Goes Away

Message Never Goes Away Software on the SoundStation IP 3000 - 3Com NBX needs to be reloaded. Initiate an update by restarting the phone (if set for Auto Configuration) or manually by going to the Update Menu under Admin Setup.

SoundStation IP 3000 - 3Com NBX Does Not Ring On An Incoming Call

Make sure the user setting for ringer is set to 'On'.

Appendix D: Status Messages

This section summarizes the messages that are displayed on the SoundStation IP 3000 - 3Com NBX.

Message	Phone State	Notes
Polycom, Inc. Copyright 2001	About 15 seconds after power up	
Initialization in Progress	After Power up and during boot load	This message will be displayed while the boot code is loading. A bong will also be heard before the actual DHCP Discovery process is started.
Waiting for NCP	Searching for NBX Call Processor	The phone is working in Layer 2 mode.
Obtaining IP Address (Press Menu to Re-configure)	When DHCP is initiated or while Static IP is being configured	If an NBX Call Processor is not found at Layer 2, the phone switches to Layer 3 mode.
Starting Application. Please Wait …	While the application is being loaded	This message is also displayed while auto configuration is in progress.
Updating …(%) done DO NOT POWER OFF	During update process	After contacting the TFTP server, SoundStation IP 3000 - 3Com NBX will automatically update. This message will also occur when update is locally initiated.
Updating …100% done	After update is complete	
Rebooting Please wait ...	SoundStation IP 3000 - 3Com NBX is rebooting	Due to configuration change or after update.
Restarting Please wait ...	Resting state or in Menu	When manual restart is initiated.

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