Product Bulletin

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UNIStim Firmware Release 0604DBG for Phase II IP Phones (2001, 2002 & 2004), 0621C4J for IP Phone 2007, and 0623C4D, 0624C4D, 0625C4D and 0627C4D for IP Phone 1110, 1120E, 1140E and 1150E Respectively

REVISION HISTORY

Date	Revision #	Summary of Changes
28-JUNE-07	Original bulletin	This is the original publication
30-JULY-07	Revision 1	Minor edits and updates
2-AUGUST-07	Revision 2	Remove support for CS1K prior to release 5.0
10-OCTOBER-07	Revision 3	New up-revision of IP Phone 11xx firmware to reinstate support for CS1K prior to release 5.0 and close PAA-2007-0208-Global

Introduction

Nortel* is pleased to announce the availability of a release of UNIStim firmware version **0604DBG** for the Phase II IP Phone 2001, Phase II IP Phone 2002, and Phase II IP Phone 2004. Nortel is also pleased to announce the availability of a release of UNIStim firmware version **0621C4J** for the IP Phone 2007. In addition, Nortel is pleased to announce the availability of releases of UNIStim firmware version **0623C4D, 624C4D**, **0625C4D** and **0627C4D** for the IP Phone 1110, IP Phone 1120E, IP Phone 1140E and IP Phone 1150E respectively.

NOTE: The 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads, for the IP Phone 1110, 1120E, 1140E and 1150E respectively, resolve an incompatibility discovered in the 0623C4B, 0624C4B, 0625C4B and 0627C4B firmware loads with Communication Server 1000 release 4.5 or earlier. The incompatibility was advertised in PAA-2007-0208-Global. With the up-revision of 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads the product advisory PAA-2007-0208-Global is closed.

Even though these firmware loads are being released with Communication Server 1000 release 5.0 to deliver enhancements to Nortel's IP Telephony Solution, these firmware loads

are also backward compatible with Communication Server 1000 release 4.5 and earlier, albeit without the enhancements. These firmware loads are being released with Communication Server 1000 release 4.5 and earlier to deliver quality improvements inherent in the new firmware that are also beneficial to the earlier releases of Communication Server 1000.

These new firmware loads, in association with Communication Server 1000 release 5.0 deliver enhancements to Nortel's IP Telephony Solution. These enhancements provide greater functionality. The enhancements include:

- Media encryption via Secure Real-time Transport Protocol (SRTP) using UNIStim Keys (USK)
- Extended language support on selected IP Phones
- More flexible network connectivity control
- Additional backlight control timers on selected IP Phones

Enhancements

Media encryption via Secure Real-time Transport Protocol (SRTP) using UNIStim Keys (USK)

Ensuring privacy of conversations in VoIP networks is becoming an increasing priority for network administrators. Secure Real-time Transport Protocol (SRTP) [RFC 3711] is a standards based method to encrypt RTP media. SRTP specifies a protocol to provide confidentiality, authentication, and replay protection to RTP and RTCP traffic.

In association with Communication Server 1000 release 5.0, the 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads deliver media stream protection using SRTP.

SRTP provides a means by which two endpoints can engage in secure media exchanges.

If Media Security is enabled on the Communication Server 1000 with IP Phones running these latest versions of firmware, the phones will use SRTP to encrypt and authenticate the media stream. The IP Phone displays a security icon on the IP Phone's screen to indicate that the leg of the call from the IP Phone to the first IP termination is secure.

The security icon is an **outlined** padlock symbol in the first position of the first line of the caller display.



On some phones, the message "encrypted" also appears.

By default, Media Security is enabled on the Nortel Communication Server 1000 release 5.0. For more information about Media Security concepts and implementation in Communication Server 1000 Release 5.0, see *Nortel Communication Server 1000 Security Management Fundamentals (NN43001-604)*.

Media Security delivered with Communication Server 1000 Release 5.0 exchanges security keys through UNIStim, using a secure channel. This implementation of SRTP using UNIStim Keys (USK) is different from the implementation of SRTP using PreShared Keys (PSK) that was first introduced into the IP Phone firmware **0604DAD** for the Phase II IP Phone 2001, Phase II IP Phone 2002, and Phase II IP Phone 2004, firmware version **0621C3A** for the IP Phone 2007, firmware **0624C23** and **0625C23** for the IP Phone 1120E and IP Phone 1140E respectively and firmware **0623C3C** and **0627C3C** for the IP Phone 1110 and IP Phone 1150E respectively

SRTP PSK was designed to provide encrypted media to deployments where the Call Servers do not yet (or will not) support the traditional SRTP key exchange infrastructure. It is also useful in situations where security requirements are less aggressive and the organization does not want to invest in the infrastructure required to support a traditional key exchange. But SRTP PSK has some limitations which are overcome with using the SRTP USK implementation. The benefits of SRTP USK over SRTP PSK include:

- Centralized provisioning. SRTP PSK can only be enabled manually by provisioning each IP Phone using the configuration menu
- The beginning of the call is encrypted. With SRTP PSK the first few seconds of the conversation will not be encrypted.
- All codecs and packet sizes are supported. With SRTP PSK certain choices of codec and packet size will not allow the media stream to be encrypted.
- IP Gateways are supported. With SRTP PSK secure calls are only supported between two Nortel IP Phones associated with the same Call Server or on two different Call Servers connected by an IP Trunk.

These new firmware loads offer both SRTP PSK and SRTP USK.

The IP Phone displays a slightly different security icon on the IP Phone's screen to indicate a secure call using SRTP PSK.

The security icon for SRTP PSK is a **solid** padlock symbol in the first position of the first line of the caller display.



For additional details on choosing SRTP USK over SRTP PSK, please refer to the *Nortel Communication Server 1000 Security Management Fundamentals NN43001-604*

For more information about configuring SRTP PSK, versus SRTP USK please refer to *Nortel Communication Server 1000 IP Phones Fundamentals (NN43001-368)*.

For more details on Nortel Communication Server 1000 release 5.0 please refer to *Nortel Communication Server 1000 Release 5.0 Release Bulletin*.

Extended Language Support (Applies to IP Phone 2007, 1120E, 1140E and 1150E)[1]

In association with Communication Server 1000 release 5.0, the 0621C4J, 0624C4D, 0625C4D and 0627C4D firmware loads deliver extended language support on the IP Phone 2007, 1120E, 1140E and 1150E respectively

These new firmware loads introduce new languages with complex fonts. The firmware provides the capability to interpret the text wishing to be displayed as UTF-8 encoding. This allows the call server to easily display multilingual text on the phone including Far East languages like Chinese and Korean.

The new languages now supported on the IP Phone 2007, 1120E, 1140E and 1150E include, Arabic, Chinese (both simplified and traditional), Greek, Hebrew, Japanese (Kanji) and Korean. These new language require graphical screens to render the fonts. Thus, the new languages are not available on the IP Phone 2001, 2002 and 2004.

Some of the new character sets are very large and require a substantial amount of memory. In order to more efficiently use memory for a majority of the sets that will not use these character sets, certain character sets are only installed on an as-needed basis. The phone can download the font files to its file system as needed via a configuration file. The necessary fonts can be loaded into the phone using an extension of the existing configuration files. The configuration file can be downloaded using TFTP at set boot time or via the Network Manager Configuration Download command.

[1] Extended language support on the IP Phone 1110 was not ready in time for this release

Once the fonts are downloaded, the set needs to know when to use which fonts. The configuration file is used to create this mapping. The mapping will persist until explicitly changed or until a font is removed. The set will validate the mappings (i.e. ensuring that the font file exists) on startup and whenever a mapping change occurs. If a font file is removed the set will revert to the default mappings.

Downloaded fonts have a version number to avoid unnecessary downloads and to facilitate upgrades.

The following languages are supported with appropriate downloaded fonts and font mappings

- Chinese Simplified
- Chinese Traditional
- Full Japanese (Kanji)
- Korean

The following languages have been added to the default language list and are supported without the need to downloaded fonts and font mappings

- Arabic
- Greek
- Hebrew (requires activation by the call server)

The complete list of languages supported on the IP Phone 2007, 1120E, 1140E and 1150E is:

- Arabic
- Chinese – simplified (requires font download)
- Chinese – traditional (requires font download)
- Czech
- Danish
- Dutch
- English
- Finnish
- French
- German
- Greek
- Hebrew (requires activation by the call server)
- Hungarian
- Italian
- Japanese – Katakana
- Japanese – Kanji (requires font download)

- Korean (requires font download)
- Latvian
- Norwegian
- Polish
- Portuguese
- Russian
- Spanish
- Swedish
- Turkish

The IP phone and call server synchronize the language choice regardless of whether the language selection is made by the call server or locally at the phone. If the Call Server initiates a language change, the IP Phone changes its local prompts to match the specified language on the Call Server. If the IP Phone user initiates a language change using the Local Tools menu, the Call Server changes its local prompts to match the specified language on the IP Phone. If the Call Server selects a language which the IP Phone does not support, the local prompts default to English.

For information about downloading and configuring fonts see *Nortel Communication Server 1000 IP Phones Fundamentals (NN43001-368)*.

The font files are available on www.nortel.com/support web site under the *Software Downloads* link. The file "ASIAN FONT FILES (C4X FIRMWARE COMPATIBLE ONLY - EXCEPT IP PHONE 1110)" is compressed file of all the downloadable fonts as well as example TFTP configuration files for each of the IP Phone models.

Special Note: Adding Asian languages to an IP Phone 2007 that has firmware version 0621C3N or earlier requires a 2 step process since the configuration file format has changed to support the new font downloads.

1. One must first upgrade the IP Phone 2007 firmware to 0621C4J using TFPT with the former configuration files ("BasicConfig" folder) – or upgrade the firmware from the call server.
2. Once the IP Phone 2007 is running the new 0621C4J firmware one must update the TFTP server to the new configuration files ("AsianConfig" folder) to download the Asian font files.

More flexible network connectivity control

The 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads introduce greater low level network control available through the phones configuration menus. The greater control includes:

1) Allowing 802.1q extended frame format to be disabled permitting the phone to connect to network infrastructure that does not support the 802.1Q extended frame format. As well, the new firmware allows for the provisioning of the 802.1Q priority settings for the voice traffic, both control and bearer, and the data traffic from the PC port.

   The configuration menu has been expanded to include the additional content. The following new menu items have been added to the configuration menu:

   Disable Voice 802.1Q: []
   Ctrl Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]
   Media Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]

   Disable Data 802.1Q: []
   Data Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]

2) allowing the link speed and the duplex mode on the IP phones to be provisioned independently for both the network port and the PC port

   The configuration menu has been expanded to include the additional content. The following new menu items have been added to the configuration menu:

   Ntwk Port Speed: [Auto, 10BT, 100BT]
   Ntwk Port Duplex: [Auto, Force Full, Force Half]

   PC Port Speed: [Auto, 10BT, 100BT]
   PC Port Duplex: [Auto, Force Full, Force Half]

The PC Port menu items are not available on the IP Phone 2001 since this phone does not have a PC port.

Additional Timer Values Added to Backlight Control (Applies to IP Phone 2007, 1110, 1120E, 1140E and 1150E)

The 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads deliver two new backlight timer durations on the IP Phone 2007, 1110, 1120E, 1140E and 1150E respectively.

The Contrast and Brightness Tools are used to alter the physical settings of the display. The Backlight setting determines the time before the display sleeps (goes black) or dims.

Two new short duration intervals of 5 seconds and 1 minute have been added to the existing duration choices.

Because of the addition of the two new intervals, a previously selected preference may be adjusted when the new firmware is loaded onto the phone. This one time adjustment can be reset by entering the Contrast and Brightness Tools and selecting a new preference. Once the new preference is selected the selection will be persistent across future resets and upgrades.

Quality Improvements

The 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads also continue to improve the overall quality of the Phase II IP Phones (2001, 2002, 2004), IP Phone 2007 and Next Generation IP Phones (1110, 1120E, 1140E and 1150E) through the delivery of ongoing resolution of CRs and closed cases. In total, approximately 70 resolved issues have been closed, and 14 customer cases have been closed in these new firmware loads since the last suite of GA firmware loads. The list of resolved critical issues and the list of closed cases since the last suite of generally available (GA) firmware loads are listed below.

The 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware releases fix many minor issues and the following critical issues since the last suite of GA firmware loads:

Slight chance firmware C4B may become unresponsive when attached to CS1K 4.00 and 4.50
Slight chance that IP Phone's internal switch may become unresponsive
IP Phone may sometimes go offline and not recover
Remote chance that DHCP may suspend
Slight chance that IP Phone may lock on Active Call
Difficulty connecting to server if network cable unplugged and then restored
Errors sometimes occurring during DHCP option handling
IP Phone sometimes not re-registering after server maintenance
Difficulty downloading firmware if link speed set to 100BT Full Duplex
Sound quality may be impaired after network disruption
IP Phone may not respond to Zone Pages
Issues with EAP if Password or Device ID are input incorrectly
In "Enter Admin. Password" menu, using an USB mouse may freeze the phone

The 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware releases close the following cases:

Case #	Title
070104-91739	CRC errors occurring during large file transfer when using auto negotiation
070326-78016	Set cannot be muted with “AnswerBack” on a BCM platform
070412-96011	DHCP Release sometimes not being sent
070606-51244	XAS IP address may change to 1.1.0.0 after upgrading firmware
060726-18008 060911-74038	Etherset QoS Statistics may be reported incorrectly
061019-18728	IP Phone might respond to ARP with wrong IP address
061020-20102 061027-27675 070226-47774 070313-65095	Connection to XAS may resets resulting in loss of IP Zone Paging
070330-83922	1-way speech sometimes occurring with SRTP PSK
070417-00508	IP Phone did not reset after upgrading firmware
070510-24253	DHCP lease sometimes not released in the default VLAN

Product Advisements

2-Step Upgrade May Be Required (Applies to IP Phone 1120E and 1140E)

One important note when upgrading the IP Phone 1120E to 0624C4D or the IP Phone 1140E to 0625C4D from any load previous to 0624C1B or 0625C1B respectively, is that a 2-step upgrade will be required. The IP Phone 1120E and 1140E cannot be upgraded directly to the newly released firmware if they are currently running firmware previous to 0624C1B and 0625C1B respectively. Instead, the phones must first be upgraded to 0624C1B and 0625C1B or newer (recommend 0624C3C and 0625C3C). Once the phones are running at least 0624C1B and 0625C1B firmware, they will accept being upgraded to 0624C4D and 0625C4D respectively.

Running SRTP PSK with Communication Server Release 5.0 requires a Patch (Applies to IP Phone 2001, 2002, 2004, 2007, 1110, 1120E, 1140E, 1150E)

In association with Communication Server 1000 release 5.0, the 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware loads deliver media stream protection using SRTP UNIStim Keys (USK). However, as stated above, running SRTP using PreShared Keys (PSK) is still a valid option in the IP Phones. But, if one wishes to run SRTP PSK with Communication Server Release 5.0 patch **MPLR23760** is required on the Communication Server 1000 Release 5.0. The Communication Server 1000 patch is located in the Meridian PEP library at the www.nortel.com/support web site.

Current release of SRTP PSK is not backward compatible with older version of SRTP PSK (Applies to IP Phone 2001, 2002, 2004, 2007, 1110, 1120E, 1140E, 1150E)

As stated above, running SRTP using PreShared Keys (PSK) is still a valid option in the IP Phones. But one important note when upgrading the IP Phones to the current releases of firmware is to realize that the current releases of SRTP PSK is not compatible with older versions of SRTP PSK. The minimum firmware releases for which the current release of SRTP PSK is backward compatible is firmware version **0604DAX** for the Phase II IP Phone 2001, Phase II IP Phone 2002, and Phase II IP Phone 2004, firmware version **0621C3N** for the IP Phone 2007 and firmware **0623C3F, 0624C3F, 0625C3F** and **0627C3F** for the IP Phone 1110, 1120E, 1140E and IP Phone 1150E respectively.

Network Loop (Applies to IP Phone 2002, 2004, 2007, 1120E, 1140E)

These firmware releases include a fix to help prevent network loop scenarios from being introduced into the network, and the resultant network outages that can occur. The network loop avoidance fix was first introduced in 0604D9H, 0621C2B, 0624C1E and 0625C1E. One important note when upgrading to 0604DBG, 0621C4J, 0624C4D or 0625C4D from any load previous to 0604D9H, 0621C2B, 0624C1E or 0625C1E respectively, is that IP Phones that were inadvertently mis-wired during initial installation will not be allowed to work until the cabling problem is corrected. This fix is only an issue if the installer, when installing the Nortel IP Phone 2002, 2004, 2007, 1120E or 1140E, inadvertently connected the network Ethernet cable to the PC Ethernet port on the back of the phone, instead of connecting it to the network Ethernet port on the back of the phone. Phase II IP Phones (2002 and 2004) running firmware previous to 0604D9H, IP Phones 2007 running firmware previous to 0621C2B and IP Phone 1120E and 1140E running firmware previous to 0624C1C and 0625C1C respectively will work when incorrectly connected, but this does introduce the potential for network degradation. These new firmware loads will try and safe guard the network by trying to prevent phones that are mis-cabled to function. **This means that the IP Phones that are working on a previous release of firmware may stop working if they are not correctly wired.**

But realize that a mis-cabled phone may still work, even with the new firmware, if the network infrastructure supports Auto MDIX. If the network infrastructure supports Auto MDIX, network loop can still occur if the network is not running the Spanning Tree Protocol (STP) or a similar loop avoidance protocol.

As a preventative measure to reduce the potential for network degradation, and to prevent mis-cabled phones from ceasing to work when their firmware is upgraded, please consider taking the necessary steps to ensure your Nortel IP phones network cables are plugged into the correct ports on the back of the phone – network cable into the network Ethernet port,

and the PC Ethernet cable (if connecting a PC) to the PC Ethernet port (little computer icon) on the back of the phone.

Correction to VLAN Access Process (Applies to IP Phone 2002, 2004, 2007, 1120E, 1140E) – ***may impact current network configurations***

The 0604DBG, 0621C4J, 0624C4D and 0625C4D firmware releases continue to support the changes to the VLAN Access Process that were first introduced in 0604D9H, 0621C2B, 0624C1E or 0625C1E firmware.

When upgrading to 0604DBG, 0621C4J, 0624C4D or 0625C4D from any load previous to 0604D9H, 0621C2B, 0624C1E or 0625C1E respectively, the corrections to the VLAN access process, might impact current customer network configurations, especially if something special was done to compensate for the former operation of the phone.

1) Voice VLAN enabled with the Automatic VLAN Discovery feature – initial DHCP request is forwarded based on the Data VLAN policy (i.e. untagged if Data VLAN is disabled or tagged with the Data VLAN ID if Data VLAN is enabled). Subsequent DHCP requests and the resolution of a Voice VLAN will be as per existing automatic operation.

The potential impact of this change to an installed customer network is:

- If they have a Data VLAN configured on the phone, and
- they have the auto configure VLAN feature enabled, and
- they DO NOT have their DHCP server on the Data VLAN

then the phone running these new firmware images will not register to the call server. Customers should check that the DHCP server is on the Data VLAN if they've configured a Data VLAN on their phones.

2) Stripping of egress Data VLAN tag is configurable – VLAN tag stripping can be enabled or disabled in addition to enabling VLAN support on the phone's PC port. If VLAN is enabled on the phone's PC port (ingress direction), the **default will be to strip** the tag on the egress direction. However, this can be manually overridden to disable stripping even if VLAN tagging (ingress direction) is enabled on the phone's PC port. Likewise if VLAN is disabled on the phone's PC port, the default will be to NOT to strip the tag on the egress direction. But this again can be overridden to enable stripping even if VLAN is disabled on the phone's PC port (ingress direction).

If stripping is disabled, the packet is sent to the phone's PC port unmodified. If stripping is enabled, the 802.1q header is removed (assuming one exists) from the packet before forwarding it out the phone's PC port

Important Note: While these changes corrects the VLAN access process, the change might impact current customer network configurations, especially if something special was done to handle the prior operation of the phone.

For more information on VLAN support in the IP Phones, please refer to the IP Phones Description, Installation and Operation Document, NTP 553-3001-368.

One way speech path behind NAT Routers (Applies to IP Phone 2001, 2002, 2004, 2007, 1120E, 1140E, 1150E)

A problem exists that with some NAT routers that causes one way speech path. This problem is addressed by the application of patch **MPLR21030** on the Communication Server 1000 Release 4.5 and 4.0. (Note: IP Phone usage behind NAT routers is not supported with Communication Server 1000 Release 3.0). The Communication Server 1000 patch is located in the Meridian PEP library at the www.nortel.com/support web site.

Outstanding Known Issues

Although the 0604DBG, 0621C4J, 0623C4D, 0624C4D, 0625C4D and 0627C4D firmware releases greatly improve the overall quality of the IP Phones, these firmware releases still include some outstanding known issues:

Backlight Interaction with USB devices (IP Phone 2007, 1120E, 1140E and 1150E)

Some USB devices (i.e. Mice or Keyboards) send regular coordinate update messages to the phone even when the device is not being used. This can cause the sleep mode for the backlight to not be properly invoked.

Contrast Adjustments: Local & TPS contrast adjustments are not synchronized (IP Phone 1110, 1120E, 1140E and 1150E)

The IP Phone 1110, 1120E, 1140E and 1150E graphical display contrast control can be adjusted either locally (on the phone) or through the call server (TPS) control. The Communication Server 1000 TPS does not yet synchronize its contrast setting with the local control. This means if the local control is used exclusively, then whenever the phone has a power cycle, the TPS contrast setting is restored and the user may need to adjust contrast again.

The local contrast control on the IP Phone 1110, 1120E, 1140E and 1150E is accessed by a "double press" of the Services key and selecting "1. Preferences", then "1. Display Settings" in the menu. The TPS contrast control is accessed with a "single press" of the Services key, then selecting "Telephone Options", then "Contrast Adjustment".

IP Phone Compatibility

These firmware releases are compatible with the following IP Phones:

PEC	Description	Firmware file
NTDU90AA16	IP Phone 2001 (Ethergray) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU90BA16	IP Phone 2001 (Ethergray) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU90AA70	IP Phone 2001 (Charcoal) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU90BA70	IP Phone 2001 (Charcoal) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU90AB70	IP Phone 2001 (Charcoal with Bezel) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU90BB70	IP Phone 2001 (Charcoal with Bezel) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU90AC70E6	IP Phone 2001 (Charcoal with Bezel) with Icon keycaps (RoHS)	0604DBG.bin
NTDU90BC70E6	IP Phone 2001 (Charcoal with Bezel) with English Text label keycaps (RoHS)	0604DBG.bin
NTDU90BBGS	IP Phone 2001 GSA	0604DBG.bin
NTDU91AA16	IP Phone 2002 (Ethergray) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU91BA16	IP Phone 2002 (Ethergray) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU91AA70	IP Phone 2002 (Charcoal) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU91BA70	IP Phone 2002 (Charcoal) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU91AB70	IP Phone 2002 (Charcoal with Bezel) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU91BB70	IP Phone 2002 (Charcoal with Bezel) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU91AC70E6	IP Phone 2002 (Charcoal with Bezel) with Icon keycaps (RoHS)	0604DBG.bin
NTDU91BC70E6	IP Phone 2002 (Charcoal with Bezel) with English Text label keycaps (RoHS)	0604DBG.bin
NTDU91BBGS	IP Phone 2002 GSA	0604DBG.bin

NTDU92AA16	IP Phone 2004 (Ethergray) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU92BA16	IP Phone 2004 (Ethergray) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU92AA70	IP Phone 2004 (Charcoal) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU92BA70	IP Phone 2004 (Charcoal) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU92AB70	IP Phone 2004 (Charcoal with Bezel) with Icon keycaps – Manufacture Discontinued	0604DBG.bin
NTDU92BB70	IP Phone 2004 (Charcoal with Bezel) with English Text label keycaps – Manufacture Discontinued	0604DBG.bin
NTDU92AC70E6	IP Phone 2004 (Charcoal with Bezel) with Icon keycaps (RoHS)	0604DBG.bin
NTDU92BC70E6	IP Phone 2004 (Charcoal with Bezel) with English Text label keycaps (RoHS)	0604DBG.bin
NTDU91BBGS	IP Phone 2004 GSA	0604DBG.bin
NTDU96AB70	IP Phone 2007 (Charcoal with Bezel) – Manufacture Discontinued	0621C4J.bin
NTDU96AC70E6	IP Phone 2007 (Charcoal with Bezel) (RoHS)	0621C4J.bin
NTYS02AAE6	IP Phone 1110 Graphite with Icon keycaps	0623C4D.bin
NTYS02BAE6	IP Phone 1110 Graphite with English keycaps	0623C4D.bin
NTYS03AA	IP Phone 1120E Graphite with Icon Keycaps – Manufacture Discontinued	0624C4D.bin
NTYS03BA	IP Phone 1120E Graphite with English keycaps – Manufacture Discontinued	0624C4D.bin
NTYS03AC	IP Phone 1120E Graphite with Icon Keycaps	0624C4D.bin
NTYS03BC	IP Phone 1120E Graphite with English keycaps	0624C4D.bin
NTYS03ABE6	IP Phone 1120E Graphite with Icon Keycaps (RoHS) – Manufacture Discontinued	0624C4D.bin
NTYS03BBE6	IP Phone 1120E Graphite with English Keycaps (RoHS) – Manufacture Discontinued	0624C4D.bin
NTYS03BBGSE6	IP Phone 1120E GSA (RoHS) – Manufacture Discontinued	0624C4D.bin
NTYS03ACE6	IP Phone 1120E Graphite with Icon Keycaps (RoHS)	0624C4D.bin
NTYS03BCE6	IP Phone 1120E Graphite with English keycaps (RoHS)	0624C4D.bin
NTYS03BCGSE6	IP Phone 1120E GSA (RoHS)	0624C4D.bin
NTYS05AA	IP Phone 1140E Graphite with Icon Keycaps – Manufacture Discontinued	0625C4D.bin

NTYS05BA	IP Phone 1140E Graphite with English keycaps – Manufacture Discontinued	0625C4D.bin
NTYS05AC	IP Phone 1140E Graphite with Icon Keycaps	0625C4D.bin
NTYS05BC	IP Phone 1140E Graphite with English keycaps	0625C4D.bin
NTYS05ABE6	IP Phone 1140E Graphite with Icon Keycaps (RoHS) – Manufacture Discontinued	0625C4D.bin
NTYS05BBE6	IP Phone 1140E Graphite with English Keycaps (RoHS) – Manufacture Discontinued	0625C4D.bin
NTYS05BBGSE6	IP Phone 1140E GSA (RoHS) – Manufacture Discontinued	0625C4D.bin
NTYS05ACE6	IP Phone 1140E Graphite with Icon Keycaps (RoHS)	0625C4D.bin
NTYS05BCE6	IP Phone 1140E Graphite with English Keycaps (RoHS)	0625C4D.bin
NTYS05BCGSE6	IP Phone 1140E GSA (RoHS)	0625C4D.bin
NTYS06AAE6	IP Phone 1150E Graphite with Icon Keycaps (RoHS)	0627C4D.bin
NTYS06BAE6	IP Phone 1150E Graphite with English Keycaps (RoHS)	0627C4D.bin

IP Phone 2004 (NTEX00), Phase 1 IP Phone 2002 (NTDU76), and Phase 1 IP Phone 2004 (NTDU82) cannot load these releases.

Call Server Compatibility and Requirements

These firmware releases are compatible with the below Nortel Call Servers. Note that in order to utilize the SRTP USK and the extended language support available in the firmware the IP Phones must be connected to Communication Server 1000 release 5.0

Call Server	Notes / Advisements
CS 1000 5.00W - IP Line 5.00.31 - SS 5.00.31	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.*
CS 1000 4.5 - X21 4.50W - IP Line 4.50.88 or later - SS 4.50.88 or later	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.*
CS 1000 4.0 - X21 4.00T - IP Line 4.00.55 or later - SS 4.00.55 or later	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.* For Phase II IP Phones, details on using OTM or Element Manager to upgrade the phones can be found in NTP 553-3001-365. For IP Phone 2007, 1110, 1120E and 1140E a Trivial File Transfer Protocol (TFTP) Server is required to distribute firmware to IP Phones. The TFTP Upgrade menu on the IP Phone is used to upgrade the firmware. The IP Phone 1150E is not supported on this platform.
CS1000 3.0 - X21 3.00 - IP Line 3.10.81 or later - SS 2.11.03 or later	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.* For Phase II IP Phones, details on using OTM or Element Manager to upgrade the phones can be found in NTP 553-3001-365. For IP Phone 2007, 1120E and 1140E a Trivial File Transfer Protocol (TFTP) Server is required to distribute firmware to IP Phones. The TFTP Upgrade menu on the IP Phone is used to upgrade the firmware. The IP Phone 1110 and 1150E are not supported on this platform.

SRG 200/400 1.0 (BCM 3.7 based)	It is **mandatory** that SRG 1.0 customers **upgrade** to SRG200/400 Rls1.5 to ensure official support for the latest feature and software application support across the IP Phone portfolio.
SRG 200/400 1.5 (BCM 4.0 based)	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.* No SRG patches are required to support the Enhanced Firmware Download feature that allows the IP Phone firmware supported on the SRG 200/400 1.5 to remain in synch with the Communication Server 1000 Main office. SRG 200/400 1.5 officially extends support for the following set types: IP Phone 2000 Series Key Expansion Module (KEM)* (in Normal Mode only), IP Phone 1120E, and IP Phone 1140E. In addition, if the "Main" is Communication Server 1000 release 4.5, no patch is necessary on the Communication Server 1000 to upgrade the IP Phone. But if the "Main" is Communication Server 1000 release 3.0 or 4.0, a CS1000 patch is required on the "Main" to allow the SRG 50 to upgrade the IP Phone firmware. The patch is MPLR21148 and is available from the Meridian PEP library at the www.nortel.com/support web site. The IP Phone 1110 and 1150E are not supported on SRG200/400 Rls1.5
SRG 50 1.0	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.* The SRG 50 Enhanced Firmware download patch (BCM050.090-SRG) is required to keep the IP Phone firmware supported on the SRG 50 in synch with the Communication Server 1000 Main office. This patch will work for all versions of IP client firmware. The patch will allow you to upgrade the IP Phone firmware. The SRG patch is entitled BCM050.090-SRG. This patch is available at the www.nortel.com/support web site in the SRG 50 1.0 section. To officially support the IP Phone 1120E and 1140E a SRG Interim Release Patch (BCM050.099_BCM50_1.0: BCM050.099-SRG) is required for SRG 50 Rls 1.0 systems. The Interim Release Patch is available on the www.nortel.com/support web site in the SRG 50 section. In addition, if the "Main" is Communication Server 1000 release 4.5, no Communication Server 1000 patch is necessary on the Communication Server 1000 to upgrade the IP Phones. But if the "Main" is Communication Server 1000 release 3.0 or 4.0, a Communication Server 1000 patch is required on the "Main" to allow the SRG 50 to upgrade the IP Phone firmware. The patch is MPLR21148 and is available from the Meridian PEP library at the www.nortel.com/support web site.

	The IP Phone 1110 and 1150E are not supported on SRG 50 Rls1.0. Although not required, it is **strongly recommended** that SRG 50 1.0 customers upgrade to 2.0 to ensure the latest feature and software application support across the IP Phone portfolio
SRG 50 2.0	*Nortel recommends an upgrade to these firmware releases at the earliest opportunity.* No SRG 50 patches are required to support the Enhanced Firmware Download feature that allows the IP Phone firmware supported on the SRG 50 to remain in synch with the Communication Server 1000 Main office. SRG50 2.0 officially extends support for the following set types: IP Phone 2000 Series Key Expansion Module (KEM)* (in Normal Mode only), IP Phone 1120E, and IP Phone 1140E. In addition, if the "Main" is Communication Server 1000 release 4.5, no patch is necessary on the Communication Server 1000 to upgrade the IP Phone. But if the "Main" is Communication Server 1000 release 3.0 or 4.0, a Communication Server 1000 patch is required on the "Main" to allow the SRG 50 to upgrade the IP Phone firmware. The patch is MPLR21148 and is available from the Meridian PEP library at the www.nortel.com/support web site. The IP Phone 1110 and 1150E are not officially supported on SRG 50 2.0 and is therefore supported in normal mode only.

System Compatibility and Requirements

System	Notes / Advisements
Nortel Application Gateway 1000	*These firmware releases continue to provide support to interwork with Nortel Application Gateway 1000.* The Application Gateway 1000 delivers business applications to the IP Phones. It is an open, standards-based network platform that supports simultaneous voice and data services. The Nortel Application Gateway 1000 is used by organizations to deploy and manage multiple applications across the range of Nortel IP Phones including the 2001, 2002, 2004, 2007, 1120E, 1140E and 1150E. For more information on the capabilities introduced with Nortel Application Gateway 1000 please refer to the Product Bulletin P-2006-0034-Global-REV1 and Product Bulletin P-2007-0006-Global The IP Phone 1110 and 1150E is not supported by the Application Gateway 1000.
Nortel Secure Multimedia Controller (SMC) 1.0	*These firmware releases continue to provide support to interwork with Nortel Secure Multimedia Controller (SMC) 2450.* The SMC 2450 is a purpose-built application firewall, delivering an integrated inside threat security solution to protect Nortel's IP phones and multimedia communication servers. The SMC 2450 creates a "Secure Multimedia Zone" around the converged infrastructure to protect against Denial of Service attacks and other security threats, while pre-configured policy settings simplify deployment and ensure the integrity and availability of the business critical converged, multimedia infrastructure. For more information on the capabilities introduced with Nortel SMC 2450 please refer to the SMC 2450 Product bulletin P-2006-0131-Global and the SMC 2450 Sales and Marketing bulletin SM-2006-0132-Global.

IP Phone Firmware Upgrade Method (Communication Server Dependent)

Communication Server 1000

The IP Phone 2007, 1110, 1120E, 1140E and 1150E supports remote firmware upgrades through both a TFTP process and a more automated UFTP process direct from the Communication Server 1000 Release 4.5 or later. The method to upgrade the IP Phone 2007, 1110, 1120E and 1140E firmware depends on the call server software.

- Communication Server 1000 Release **4.0** and Succession 1000 Release **3.0** systems must use TFTP
- Communication Server 1000 Release **4.5** or later systems can use UFTP or TFTP

The IP Phone 1150E firmware can use UFTP or TFTP since it is only supported on Communication Server 1000 Release **4.5** or later.

For more information on TFTP and UFTP firmware upgrade processes, please refer to the IP Phones Description, Installation and Operation Document, NTP 553-3001-368.

Survivable Remote Gateway (SRG) 200/400 and SRG 50

For information on firmware upgrade processes for the SRG200/400, please refer to the Main Office Configuration Guide for SRG200/400 Rls1.5, NTP 553-3001-207

For information on firmware upgrade processes for the SRG50, please refer to the Main Office Configuration Guide for SRG50 Rls 2.0, NTP 553-3001-207.

IP Phone Configuration Menu

The text-based configuration menu has been expanded with the 0623C4D and 0604DBG firmware release on the Phase II IP Phone and IP Phone 1110 respectively. The text-based menu structure below presents the complete configuration menu now available:

EAP Enable?[0-N,1-Y]:0
if "1"
DeviceID[ ]
Password:[*******]
LLDP Enable? [0-N,1-Y]:1
DHCP? [0-N,1-Y]:1
if "0"
SET IP: xxx.xxx.xxx.xxx
NETMSK: xxx.xxx.xxx.xxx
DEF GW: xxx.xxx.xxx.xxx
S1 IP: xxx.xxx.xxx.xxx
S1 PORT:
S1 ACTION:
S1 RETRY COUNT:
S1 PK: FFFFFFFFFFFFFFFF
S2 IP: xxx.xxx.xxx.xxx
S2 PORT:
S2 ACTION:
S2 RETRY COUNT:
S2 PK: FFFFFFFFFFFFFFFF
else if "1"
DHCP:0-Full,1-Partial:1
if "1"
S1 IP: xxx.xxx.xxx.xxx
S1 PORT:
S1 ACTION:
S1 RETRY COUNT:
S1 PK: FFFFFFFFFFFFFFFF
S2 IP: xxx.xxx.xxx.xxx
S2 PORT:
S2 ACTION:
S2 RETRY COUNT:
S2 PK: FFFFFFFFFFFFFFFF
Speed[0-A,1-10,2-100]:0
if "1" or "2"

Duplex[0-A,1-F,2-H]:0

Cfg XAS?[0-N, 1-Y]:1

if "1"

XAS IP: xxx.xxx.xxx.xxx

Voice 802.1Q[0-N,1-Y]:1

if "1"

VOICE VLAN?[0-N,1-Y]:0

if "1"

VLAN Cfg ?0-Auto,1-Man :1

if "0"

LLDP MED ? [0-N, 1-Y] :0

if "0"

LLDP VLAN ? [0-N,1-Y] :0

if "0"

DHCP ? [0-N, 1-Y] :0

else if "1"

VOICE VLAN ID :

VLANFILTER ?[0-N,1-Y] :0

Ctrl pBits[0-7,8-Au] :8

Media pBits[0-7,8-Au] :8

PC Port ? [0-OFF,1-ON] :1 *This menu item, and submenus, are not applicable on IP Phone 2001*

if "1"

Speed[0-A,1-10,2-100]:0

if "1" or "2"

Duplex[0-A,1-F,2-H]:0

Data 802.1Q[0-N,1-Y]:1

if "1"

DATA VLAN?[0-N,1-Y]:0

if "1"

DATA VLAN Cfg ?0-A,1-M :0

if "1"

DATA VLAN ID :

Data pBits[0-7,8-Au] :8

PCUntagAll ?[0-N,1-Y]:0

Cached IP? [0-N, 1-Y]:0

GARP Ignore?[0-N,1-Y]:0

PSK SRTP?[0-N, 1-Y]:1

The IP Phone 2007, 1120E, 1140E and 1150E configuration menu has been expanded with the 0621C4J, 0624C4D, 0625C4D and 0627C4D firmware releases. The graphic menu structure below presents the complete configuration menu now available:

Enable 802.1x (EAP): []
DeviceID:
Password:
Enable 802.1ab (LLDP): []
DHCP: [No, Partial, Full]
Set IP: xxx.xxx.xxx.xxx
Net Mask: xxx.xxx.xxx.xxx
Gateway: xxx.xxx.xxx.xxx
S1 IP: xxx.xxx.xxx.xxx
Port:
S1 Action:
Retry:
S1 PK: FFFFFFFFFFFFFFFF
S2 IP: xxx.xxx.xxx.xxx
Port:
S2 Action:
Retry:
S2 PK: FFFFFFFFFFFFFFFF
Ntwk Port Speed: [Auto, 10BT, 100BT]
Ntwk Port Duplex: [Auto, Force Full, Force Half]
Disable Voice 802.1Q: []
VoiceVLAN: [No VLAN, LLDP MED, LLDP VLAN Name, DHCP, Enter VLAN ID]
VLAN Filter : []
Ctrl Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]
Media Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]
Disable PC Port: []
PC Port Speed: [Auto, 10BT, 100BT]
PC Port Duplex: [Auto, Force Full, Force Half]
Disable Data 802.1Q: []
DataVLAN: [No VLAN, LLDP VLAN Name, Enter VLAN ID]
Data Priority Bits: [Auto, 1, 2, 3, 4, 5, 6, 7]
PC-Port Untag All: []
Cached IP: []
Ignore GARP: []
Enable PSK SRTP: []
XAS IP: xxx.xxx.xxx.xxx
Graphical XAS: []
Port
TFTP IP: xxx.xxx.xxx.xxx
Enable Bluetooth: [Auto, yes, No] *This menu item on IP Phone 1140E and 1150E only*

The IP Phone 2007, 1110, 1120E, 1140E and 1150E contain a password protection mechanism to lock out access to the Network Configuration menu. If **enabled**, access to the Network Configuration menu is password protected and the password is prompted by a pop up window. One must type the password 26567*738 (color*set) from the dial pad and press the Down arrow or mouse click “OK” to enter the Network Configuration menu.

When an incorrect password is entered, the Network Configuration Menu is not opened.

To thwart password guessing, only 3 incorrect password entries in a row are allowed. After the 3rd incorrect entry, the password entry is ignored for 5 minutes. During this period of time, the password prompt is displayed and the entered digits accepted; however, the phone will not process the incoming digits. The password prompt window simply closes and the behavior is identical to that of an incorrect password entry. The user will assume the incorrect password has been entered and try again. Thus even if the correct password is guessed during the 5 minute period, it will be ignored. This effectively reduces the guess entry rate to 3 guesses every 5 minutes.

Once the password has been entered, access to the Network Configuration menu remains active for 5 minutes. During the 5 minutes, the menu can be freely navigated, exited and entered without being prompted again for the password. When the 5 minutes expires, the menu is closed. The password must be reentered to access the Menu.

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