Product Bulletin

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Nortel SIP Firmware for IP Phone 1120E and IP Phone 1140E General Availability – Global

REVISION HISTORY

Date	Revision #	Summary of Changes
21st March 2007	Original Bulletin	This is the original publication

Introduction

The purpose of this bulletin is to introduce the General Availability (GA) of the SIP Firmware for the IP Phone 1120E and IP Phone 1140E effective as of March 21, 2007.

The SIP Firmware for IP Phone 1120E and 1140E is supported on Nortel Multimedia Communication Server 5100 Release 3.5 and Release 4.0. Additional support of the SIP Firmware for the IP Phone 1120E and 1140E on other Nortel Communication Servers remains under formulation at this time. Please consult your Nortel representative for further timeline updates on the specific server of interest.

This bulletin provides useful information related to the release of the SIP Firmware for IP Phone 1120E and 1140E for the globally including solution overview, firmware management and ordering information. It also references Product Advisements as well as where to find related documentation and product information.

Contents

INTRODUCTION 1

SIP FIRMWARE FOR IP PHONE 1120E AND 1140E OVERVIEW 3

ADMINISTRATION AND PROVISIONING 10

FIRMWARE CONTENT AND UPDATE INFORMATION 10

REFERENCES AND RELATED DOCUMENTS 11

ORDERING GUIDELINES AND PROCEDURES 12
- Order Codes – IP Phone 1120E and 1140E (shipped preloaded with SIP Firmware) 12
- Order Codes – IP Phone 1120E and 1140E (shipped preloaded with UNIStim Firmware) 12
- MCS 5100 Port License 13

TRAINING 13

TECHNICAL ADVISEMENTS 14
- Minimum Hardware for SIP Firmware on the IP Phone 1120E and 1140E 14
- Security - NAT Traversal & STUN protocol 14
- Secure Real-Time Transport Protocol (SRTP) and Transport Layer Security (TLS) 14
- 802.1X and Extensible Authentication Protocol (EAP) 15
- Single User Login 15

SIP Firmware for IP Phone 1120E and 1140E Overview

The Nortel IP Phone 1100 Series portfolio is Nortel's new generation of desktop IP Clients which builds upon Nortel's standard for ease-of-use, reliability and robustness. The IP Phone 1100 Series hardware incorporates high-resolution, back-lit, pixel-based displays and a sleek, cutting-edge ergonomic design on all models along with support for standards-based USB, Gigabit Ethernet and Bluetooth wireless technology integration on selected portfolio models.

The IP Phone 1120E and IP Phone 1140E models are currently generally available to the global market. The new enhancements deliver standards-based SIP Firmware for the IP Phone 1120E and IP Phone 1140E models with initial support on Multimedia Communication Server 5100 Release 3.5 & Release 4.0. The initial release of the SIP Firmware does not support the IP Phone 1110, IP Phone 1150E, or the Expansion Module for IP Phone 1100 Series. A high level view of the physical model of IP Phone 1120E and 1140E is shown in Diagrams 1-3 below followed by technical details of the SIP Firmware.

Diagram 1: Front View of IP Phone 1120E

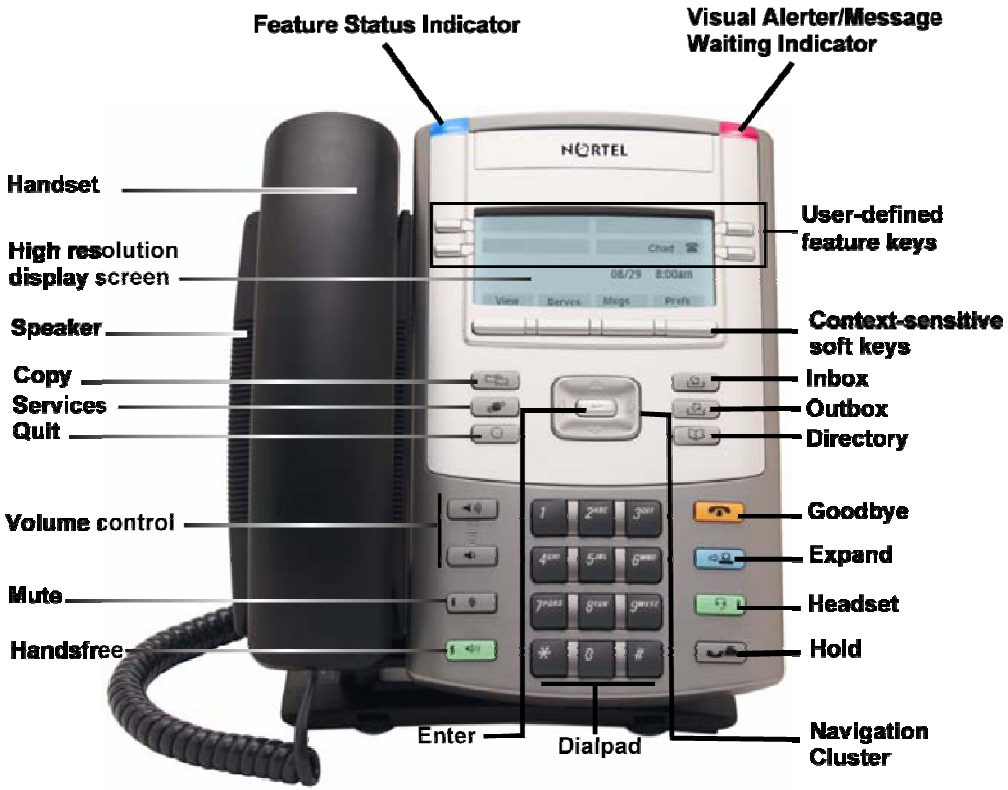


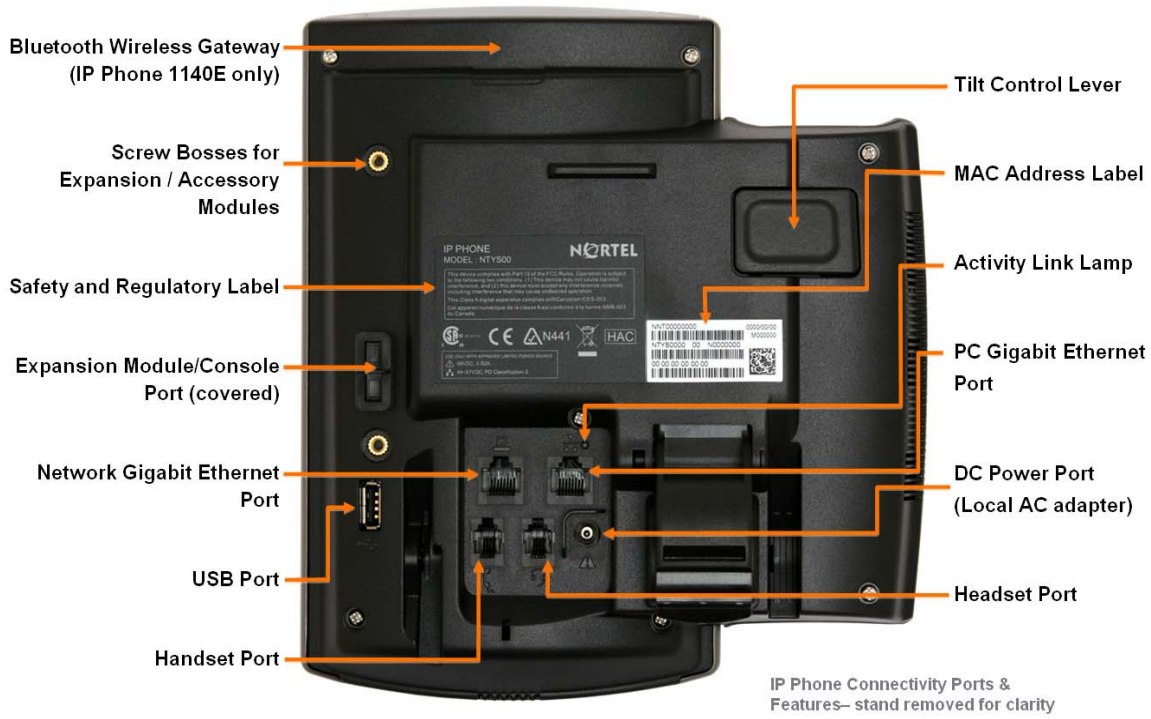
Diagram 2: Front View of IP Phone 1140E

The rear view of the IP Phone 1120E & 1140E connections are shown in Diagram 3.

The tilt-lever is used to adjust the angle position of the IP Phone 1100 Series deskset. Five positions are supported which provide a total angle range of 60 degrees (-5 to +55 degrees). The adjustable tilt-stand, in combination with the high-resolution graphical displays, provides superior viewing experience for users of the phones.

IP Phones 1120E and 1140E integrate an industry standard USB port, which elevates user experience and boosts personal productivity, by providing support for standard mouse or keyboards that allow very intuitive navigation of SIP telephony and SIP-based Instant Messaging (IM) applications.

Diagram 3: Rear View of IP Phone 1120E & IP Phone 1140E



For more details on IP Phones 1120E and 1140E hardware capabilities, please refer to the IP Phone 1100 Series KTK materials located on the Nortel Partner Information Center: http://www.nortel.com/pic

Technical Description

The Nortel IP Phone 1120E and IP Phone 1140E were designed to be flexible and deliver the memory and processing capacity required to support a native SIP User Agent, upon its firmware availability. The SIP Firmware for IP Phone 1120E and 1140E supports advanced IP Telephony applications such as presence selection and notification along with secure instant messaging.

Combined with the high-resolution, pixel based, fully-backlit displays of the IP Phone 1120E and IP Phone 1140E, the SIP Firmware delivers a robust set of capabilities designed to enhance the communications experience across both enterprise and carrier Nortel Communication Servers[1].

Business-grade Telephony Features

Business-grade telephony features in the SIP Firmware offering include:

- Call initiation / Call answer
  - Supported from handsfree, headset, handset, and the primary line key
- Call Forward (local to the phone)
- Call Transfer (Blind)
  - Where called party is not engaged prior to call being transferred
- Call Transfer (Consultative)
  - Called party is engaged prior to call being transferred
- Last Number Redial
- Call Ignore (Local or Network)
- Call Decline (With reason)
- Call Waiting
- Three-way Calling (Local to the phone)
- Call Join via Conferencing Server
- Call Hold (Manual and Automatic),
- Call Hold Retrieve
- Call Park
- Call Park Retrieve
- Calling Party Name
- Calling Party Number Display

[1] The SIP Firmware for IP Phone 1120E and 1140E is supported on Nortel Multimedia Communication Server 5100 Release 3.5 and Release 4.0. Additional support of the SIP Firmware for the IP Phone 1120E and 1140E on other Nortel Communication Servers remains under formulation at this time. Please consult your Nortel representative for further timeline updates on the specific server of interest.

- Calling Party ID Restriction (Privacy)
- Do Not Disturb
- On-hook / Off-hook dialing,
- Pre-dialing (E.164 and SIP URI)
- Speed dialing via User-defined Feature Keys
- Call Initiation from Call Logs
  - Inbox, Outbox, Friends, Address Book
- Support for Special Prefix Code dialing (SPRE) - Nortel Communication Server dependent

Advanced Applications

The SIP Firmware provides support for innovative delivery of advanced applications such as:

- Management of Friends list
- Filtering and Search of Friends and Address Book entries
- User and Friends Presence Notification
- Graphical icons for Presence Status of User and Friends
- Send/receive/reply to Text-based Secure Instant Messages (Security provided by Tiny Encryption Algorithm)
- Filtering of Call logs (Inbox, Outbox) and IM Log
- Copy contact information from Address Book, Inbox, Outbox, or IM Log, to Address Book or user-defined feature key (fixed or soft-key)
- USB mouse and keyboard for Dialing, Instant Messaging

SIP Firmware User Interface Enhancements

The new user interface that is available with this release of SIP firmware offers graphical-based menus for enhanced user experience including:

- User-defined feature keys for Speed Dial, Voice Mail, Call Forward, Instant Messaging, Presence Selection, and Do Not Disturb features
- Integrated message access to Voicemail login and Instant Messaging
- Special character support for meaningful text entry
- Use of the fixed Expand key to access the IM Log
- Graphical Icons indicating status of each IM (Unread, Read, Replied to)
- Feature Status Indicator (Blue LED) indicates the receipt of new unread Instant Messages (IM)s
- Access to Voice Inbox and Outbox (via Fixed or Soft keys)
- Graphical icons indicating status of received calls (number missed, received per each user)

SIP Firmware User Preference Enhancements

Configurable user preferences supported with the intial release of the SIP Firmware include:

- Handset/headset/handsfree Volume Adjustment
- Alerting Volume Adjustment
- Display Contrast Adjustment
- Ring Pattern Selection
- Voicemail Settings (Number and Mailbox ID)
- User location (from server-provided list)
- Time, Date, Zone, Format
- Idle Screen Display Text
- Backlight Screensaver Settings
- Call Subjects
- Call Decline Reasons
- Instant Messaging (On/off setting of pop-up display/audible tone for new messages)
- Default Dialing (Alpha/Numeric)
- Call Ignore Action (local/network)
- Search Method (Name, First character, Index)
- Incoming & Outgoing Privacy settings
- User Presence Selection
- Dialing Pattern Default (Alpha/Numeric)
- Ring tones (pre-provisioned files)
- User Selection of Localized Display Language
  - English is default with up to four additional language options presented at one time (Additional languages are available for download)
  - Changeable without requiring a phone reset
- Multiple user profile support to ensure user data security when logged in/out (i.e. separate Inbox, Outbox, IM log, Address Book, user-defined feature key, user preferences, etc.)
- Selection of Wired Headset
- Selection of Wireless Bluetooth Headset (IP Phone 1140E only)

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Configurable Administration Options

Configurable administrative functions with the SIP Firmware include:

- Downloadable Global Language Options (17 languages)
- Flexible and Downloadable Dialing Plan
- Regional and Localized Call Progress Tones and Cadences

- Multiple SIP proxies and Domains/Sub-domains
  - Configurable by the system administrator or end user
- Multiple Protocols for Firmware and File Downloads (TFTP, FTP, HTTP)
- New Problem Determination Tools (via Telnet / Password Protected)
  - Error diagnostics and recovery
  - Remote debugging

Standards, Codecs and QoS Settings

The SIP Firmware is designed to support the following standards, codec and QoS settings:

- DTMF payload via RFC2833 and G.711 in-band signaling;
- G.711 and G.729a codecs;
- DNS for Domain Name Resolution;
- Layer 2 802.1 p/Q packet priority;
- Layer 3 ToS and IP precedence bit tagging;
- QoS metrics monitoring and reporting;
- Firewall and NAT traversal (via STUN).

Security

The SIP Firmware supports the following security features:

- Firmware/file integrity and authentication (code signing) for Nortel-generated files via PKI or shared secret mechanism;
- Secured access to the phone's configuration and diagnostic menus;
- Secured user login/logout options
- RFC 3261 compliant, robust SIP stack which offers protection against security vulnerabilities and DoS attacks.

For detailed product and feature information, please refer to the information on the IP Phones and Clients product page of the Partner Information Center (PIC) or on www.nortel.com. The PIC can be accessed at: http://www.nortel.com/pic . Once logged into the PIC, click on **Products**, then **VoIP, Voice & Multimedia Communications** and finally **IP Phones & Clients**.

Administration and Provisioning

The SIP Firmware for the IP Phone 1120E and 1140E must be provisioned using TFTP, HTTP or FTP. The required TFTP, HTTP or FTP server are provided by the customer. The SIP user must be provisioned on the MCS 5100 Rls 3.5 or Rls 4.0 system. It is essential that both the SIP username and a corresponding DN alias be configured on the MCS 5100.

Firmware Content and Update Information

The SIP Firmware for IP Phone 1120E and 1140E supports remote firmware changes and updates through both a manual and automated process using the TFTP, HTTP or FTP protocol. Updates, including firmware, language files, and configuration files, may be obtained when the phone is powered up, at specific times pre-configured by the system administrator, or at any time upon manual request of the user. Firmware updates are done via the SIP Firmware update/provisioning mechanism. Customers will need to make arrangements for the TFTP/FTP/HTTP servers. A free copy of Win32 version of TFTP server application can be obtained from http://tftpd32.jounin.net/[2]. The SIP Firmware update process involves two steps.

1) First update the IP Phone1120E/1140E to minimum required UNIStim Firmware version 0624C1B/0625C1B. The IP Phone 1120E or 1140E may be shipped with default UNIStim version lower than the minimum required version.
2) Once the IP Phone 1120E/1140E is at 0624C1B/0625C1B version, the IP Phone can be updated to SIP Firmware 06A4C39d14/06A5C39d14 version. UNIStim Firmware supports the TFTP or UFTP protocols. Updating UNIStim firmware and switching from UNIStim firmware to SIP firmware will require a TFTP server (UFTP is not supported).

   IMPORTANT NOTE: The SIP Firmware for IP Phone 1120E and 1140E is a migration to the SIP protocol for these IP Phones. Loading the SIP Firmware will overwrite the existing firmware such as UNIStim (i.e., note that it will not be possible to run both the SIP and UNIStim Firmware concurrently).

For details on firmware updates, provisioning and configuration, please refer to the Administration Guides (NTPs) in the next section

[2] Nortel may provide references to non-Nortel products as well as hyperlinks or pointers to other web sites maintained by third parties. The links to any such third party web sites are provided for your convenience and information only. The content in any linked web site is not under our control and if you decide to access any such web site, you do so entirely at your own risk. The fact that we provide a link to a third party web site does not mean that we endorse, authorize or sponsor any such site or that we are affiliated with such third party. Under no circumstances shall Nortel be liable to any person for any direct, special, incidental, punitive, indirect or consequential damages, loss of profits or revenues or costs of replacement goods resulting from use of or reliance on the information presented in or through this Web Site, even if informed in advance of the possibility of such damages.

References and Related Documents

Additional information is available in the *Knowledge Transfer Kit* (KTK) which can be downloaded from the Partner Information Center (PIC) at the following location: http://www.nortel.com/pic. Navigate to "***Products and Solutions***", then select "***Channel Readiness***" and finally select "***SIP Firmware for IP Phone 1120E and 1140E***" from the drop-down list.

SIP Firmware for IP Phone 1120E and 1140E related documents are available on www.nortel.com/helmsman using the following product path:

Multimedia Communications Portfolio >
Multimedia Communication Server 3.5/4.0 >
SIP Firmware for IP Phone 1120E and 1140E
SIP Firmware for IP Phone 1120E and 1140E

SIP Firmware for IP Phone 1120E and 1140E documentation includes the following materials:

- NN43112-101 SIP Firmware for IP Phone 1120E User Guide for MCS 5100
- NN43112-102 SIP Firmware for IP Phone 1120E Quick Reference for MCS 5100
- NN43112-300 SIP Firmware for IP Phone 1120E Administration Guide for MCS 5100

- NN43113-101 SIP Firmware for IP Phone 1140E User Guide for MCS 5100
- NN43113-102 SIP Firmware for IP Phone 1140E Quick Reference for MCS 5100
- NN43113-300 SIP Firmware for IP Phone 1140E Administration Guide for MCS 5100

Additional technical information on the SIP Firmware for IP Phone 1120E and 1140E can be found on the Nortel Technical Support Portal at the following link:
http://www.nortel.com/support or
http://www130.nortelnetworks.com/go/main.jsp?cscat=SOFTWARE&resetFilter=1&poid=15741
http://www130.nortelnetworks.com/go/main.jsp?cscat=SOFTWARE&resetFilter=1&poid=15721

Other related materials for SIP Firmware for IP Phone 1120E and 1140E include:

- *SM-2007-0083-GLOBAL – Introducing the SIP Firmware for IP Phone 1120E and 1140E* - Sales & Marketing Bulletin
- SIP Firmware for IP Phone 1120E and 1140E Technical Specifications (planned for 2Q 2007)

Ordering Guidelines and Procedures

In 2Q07, Nortel plans to make available the IP Phone 1120E and 1140E preloaded with SIP Firmware from the factory. The order codes for IP Phone 1120E and 1140E with SIP Firmware are provided below for reference. Note that Nortel Order Management will not accept any orders for these codes until they are released into the Nortel Enterprise Configuration tool (Current view is these new codes will be no earlier than EC release 7.0.2). Consult your Nortel representative for actual timeline when Nortel Order management can accept orders.

Order Codes – IP Phone 1120E and 1140E (shipped preloaded with SIP Firmware)

PEC	CPC	DESCRIPTION
NTYS03CAE6	N0142351	IP Phone 1120E Graphite w/ Icon Keys w/o PS (SIP) (RoHS)
NTYS03DAE6	N0142352	IP Phone 1120E Graphite w/ Eng Keys w/o PS (SIP) (RoHS)
NTYS05CAE6	N0142353	IP Phone 1140E Graphite w/ Icon Keys w/o PS (SIP) (RoHS)
NTYS05DAE6	N0142354	IP Phone 1140E Graphite w/ Eng Keys w/o PS (SIP) (RoHS)

Alternatively, the SIP Firmware for IP Phone 1120E and 1140E will be available for download from a secure Nortel website for registered MCS5100 customers. MCS5100 Customers are required to purchase/have the IP Phone 1120E and IP Phone 1140E hardware available for loading the SIP Firmware.

The current Generally Available product codes for the IP Phone 1120E and 1140E that ship with UNIStim Firmware are listed below. As these part for the IP Phone 1120E and 1140E are shipped with UNIStim Firmware, they must be updated with the SIP Firmware per procedures outlined in the “Firmware Content and Update” section of this bulletin.

Order Codes – IP Phone 1120E and 1140E (shipped preloaded with UNIStim Firmware)

PEC	CPC	DESCRIPTION
NTYS03AC	N0132697	IP Phone 1120E Graphite w/Icon Keys w/o PS
NTYS03ACE6	N0132699	IP Phone 1120E Graphite w/Icon Keys w/o PS (RoHS)
NTYS03BC	N0132698	IP Phone 1120E Graphite w/Eng Keys w/o PS
NTYS03BCE6	N0132700	IP Phone 1120E Graphite w/Eng Keys w/o PS (RoHS)
NTYS05AC	N0132702	IP Phone 1140E Graphite w/Icon Keys w/o PS
NTYS05ACE6	N0132704	IP Phone 1140E Graphite w/Icon Keys w/o PS (RoHS)
NTYS05BC	N0132703	IP Phone 1140E Graphite w/Eng Keys w/o PS
NTYS05BCE6	N0132705	IP Phone 1140E Graphite w/Eng Keys w/o PS (RoHS)
NTYS03BCGSE6	N0132701	IP Phone 1120E Graphite w/Eng Keys w/o PS GSA (RoHS)
NTYS05BCGSE6	N0132706	IP Phone 1140E Graphite w/Eng Keys w/o PS GSA (RoHS)

MCS 5100 Port License

The SIP Firmware for IP Phone 1120E and 1140E works with the Nortel Multimedia Communication Server 5100 (MCS 5100) Release 3.5 and 4.0 systems. As such, a SIP port license is required for each IP Phone 1120E and 1140E to connect to the MCS 5100 system. When placing an order for the IP Phone 1120E and 1140E, please ensure appropriate number of MCS 5100 SIP port licenses have been ordered.

Training

Global Knowledge is the official training partner for Nortel for North America. The following training courses have been updated to include the ***SIP Firmware for IP Phone 1120E and 1140E***:

Course Title	Format	Number
Multimedia Communication Server 5100 Release 4.0 Administration	Classroom Learning	6316C
Multimedia Communication Server 5100 Release 4.0 Installation and Commissioning	Classroom Learning	6313C
Multimedia Communication Server 5100 Release 4.0 Planning and Engineering	Classroom Learning	6314C
Multimedia Communication Server 5100 Release 4.0 Tutorial	eLearning	6304W
Multimedia Communication Server 5100 Release 4.0 Overview	eLearning	6306W

Further details on course offerings and schedules can be obtained from the Global Knowledge website at www.globalknowledge.com/nortel/training.

Technical Advisements

Minimum Hardware for SIP Firmware on the IP Phone 1120E and 1140E

The SIP Firmware for IP Phone 1120E and 1140E is only supported on the GA hardware release of the respective IP Phone model.

Security - NAT Traversal & STUN protocol

The SIP Firmware for IP Phone 1120E and 1140E supports two methods for NAT traversal of the signaling path:

- SIP_PING
- Simple Traversal of User Datagram Protocol through Network Address Translators (STUN)

SIP PING is a Nortel protocol for NAT traversal for SIP signaling only.

The STUN protocol lets a client discover the presence and type of NATs between the client and the public Internet. In addition, a client can discover the mapping between the private IP address and port number and the public IP address and port number. Typically, an Enterprise or a service provider operates a STUN server in the public Internet or internet domain. A STUN server can be located using DNS SRV records using the domain as the lookup. STUN typically uses the well-known port number 3478. The NAT traversal method can be selected manually through the Device Settings menu or configured through the device configuration file.

SIP Firmware for IP Phone 1120E and 1140E also supports NAT traversal for the Media path. However, STUN protocol cannot coexist with Application Layer Gateway (ALG), Media Portals or RTP Proxy servers. If STUN is configured on the SIP firmware, ensure none of these devices are configured in the SIP proxy server.

Secure Real-Time Transport Protocol (SRTP) and Transport Layer Security (TLS)

SIP-based Secure RTP and TLS are a planned enhancement for a future SIP Firmware release.

802.1X and Extensible Authentication Protocol (EAP)

The SIP Firmware for IP Phone 1120E and 1140E supports 802.1 X/EAP device authentications. The authentication protocol currently supported is EAP-MD5. Customers need to procure appropriate RADIUS/authentication servers (both HW/SW). Certificate based authentication is planned for a future release.

Single User Login

The SIP Firmware for IP Phone 1120E and 1140E only supports a single user logged in per phone. Other Nortel IP Phones or firmware may allow for more than one user (or directory number) to be logged in or displayed at a time.