Everything You Need To Know About

Using Microsoft Lync with Voice & snom Lync Qualified Phones

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Preface

Over the past decade, telephone usage patterns and enterprise voice communications have undergone a dramatic transformation, driven by collaborative technologies and a need to meet user's expectations of how voice is integrated with those technologies.

A key enabler of this evolution is an intelligent IP network and standards like Session Initiation Protocol (SIP), which enables voice to integrate with an all-IP network. It's a process that involves moving from standalone products, services and applications to a converged solution with VoIP, and UC platforms like Microsoft Lync, and in particular the Lync with voice component, as the foundation.

We put together this ebook, Everything You Need To Know About Using Microsoft Lync with voice & snom Lync Qualified Phones, as a guide for those thinking about Lync with voice deployments.

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Chapter One

What is a Lync Phone?

Many enterprises, particularly those that have already standardized on Microsoft technologies, will probably have Lync in its Microsoft portfolio, using it for its messaging and presence capabilities. Lync has matured enough to add the voice application to the Lync network. Although there are software clients for voice, the desktop phone is still preferred in many situations. Selecting the best Lync phone is not a trivial decision.

Why Use A Desktop Phone, Rather Than a Softphone, for Lync?

Desktop phones have several inherent advantages over softphones. For starters, a desktop phone is always on. That's not true for PCs, laptops, or tablets, which can hibernate when idled too long. From a financial viewpoint, desktop phones provide a much better ROI for businesses since they last for up to 10 years compared with 2 to 3 years for cell phones, tablets and PCs, and only up to one year for headsets. Desktop phones easily support multiline capability and have directly accessible buttons for most important functions. Desktop phones are required in schools, elevators, hotel pools, and common area in businesses. They are required to satisfy fire and safety codes.

A phone that works with Lync must be able to operate over an IP network. Lync phones are NOT designed to connect directly to a legacy analog PBXs or connect to the PSTN. They can connect via SIP to a PBX. In short, a Lync phone can best be described as:

- An IP phone
- Using the Session Initiation Protocol (SIP) for signaling
- Transmitting SIP over TCP, although Lync qualified IP phones use UDP
- Operating with the RTAudio, G.711 and other standard codecs like G.722
- Connecting to an Ethernet LAN or USB port on a PC
- Working under the control of a server running Microsoft Lync Server 2013 or 2010 Enterprise Voice edition

What is Microsoft Lync Server Enterprise Voice?

Microsoft Lync is a unified communications server software platform. Lync connects compatible devices running Windows and other operating systems including mobile devices. Lync provides a single client experience for presence, instant messaging (IM), voice, video, and web conferencing both within the organization and externally.

Enterprise Voice is the voice services offering in Lync Server used with Lync IP phones. Its primary capabilities:

- Delivers a voice option to enhance or replace traditional private branch exchange (PBX) systems
- Uses the address books maintained by Microsoft Exchange Server and integrates with Lync features including rich presence, IM, collaboration and meetings

- Federates with Skype, enabling Lync users to connect to anyone on Skype

Lync Server 2013 Enterprise Voice offers a number of new features. It is backward compatible with products qualified for Lync Server 2010 and Microsoft Office Communications Server 2007 R2, excluding the new Lync features. Most phone firmware is backward compatible with older versions.

All IP phones, including Lync phones, can connect to an Ethernet LAN. IP phones may also connect to a USB port on a computer. In either case, the IP phones are powered via Power over Ethernet (PoE) over the LAN or USB power. Another option: some IP phones can be powered by an external AC adapter.

Most modern IP phones use SIP for signaling. Most SIP phones operate over UDP. Lync signaling also uses SIP but the SIP packets are carried over TCP.

Nearly all IP phones support at least two voice codec standards, G.711 and G.729. They may also support wideband, high definition voice codecs including G.722, G.723.1, G.726, GSM 6.10, and iLBC. Lync phones can support the Microsoft codec RTAudio.

RTAudio stands for Real-time Audio. It is proprietary to Microsoft, not a standard. It is a voice codec designed for real-time two-way VoIP communications. RTAudio is the preferred Microsoft audio codec and is the default codec for Microsoft's Lync platforms.

Desktop Phones for Lync: Two Classes

Microsoft has developed two categories for Lync phones: **IP Phones *Optimized* for Lync** or **IP Phones *Qualified* for Lync**. The qualification program supports partner-developed and designed IP phones to ensure they interoperate with Lync based on publicly available Windows Protocols (WSPP) and Microsoft Office Protocols.

Optimized for Lync

Lync Optimized IP phones run the Microsoft Lync Phone Edition software on the phone and support PBX functions, access to calendar and contacts, conferencing, and extended functions when connected to the PC, and integrated security and manageability. Optimized phones are designed specifically for Lync. These phones have been firmware tested with the Lync Phone Edition software. These phones only work within a Lync environment and are limited to the functionality provided by Microsoft.

qualified for Lync

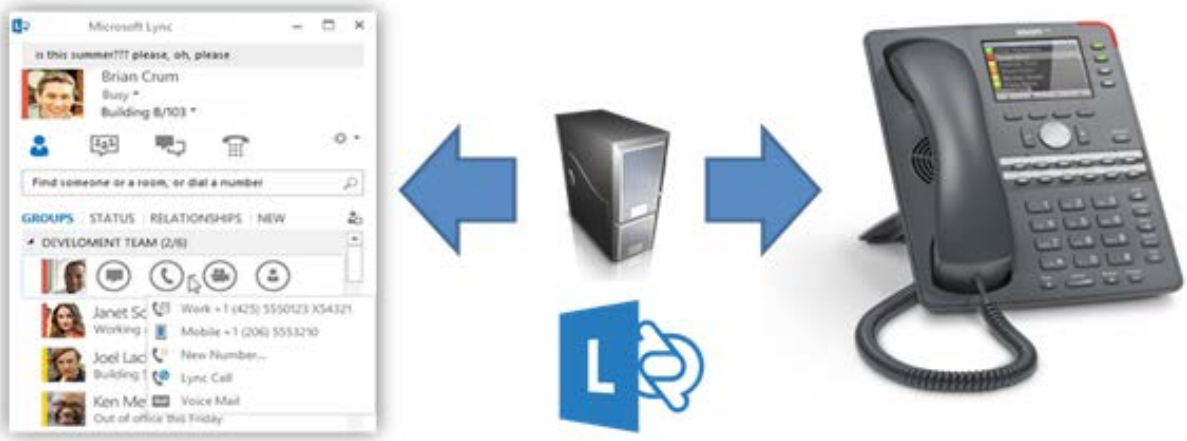
Lync Qualified phones are IP phones containing firmware tested with the phone manufacturer's software. Compatible IP phones do not require gateways for interoperability. Qualified phones support core Lync features and also allow for customized telephony features and third party voice applications. They are tested and qualified by Microsoft to provide direct connectivity, core call functionality, presence awareness, and server management and provisioning. snom Lync Qualified phones can be used in Lync and SIP environments, providing flexibility and investment protection.

Selecting the Best Lync Phone

When selecting the best Lync phones, the best choice should:

- Work with or without a PC
- Be inexpensive
- Versatile in application
- Support speed dialing and call transfers
- Have quick reference Presence indicators

Both classes of Lync phones: Optimized for Lync and Compatible and Qualified for Lync feature a range of phone models designed to meet specific business needs, including a basic desk phone, common area phone, or conference room phone.



Provisioning works with/without a PC

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Chapter Two

Provisioning Your snom Lync Phone

Once you have implemented Microsoft Lync, you next need to install and configure your Lync qualified IP phones. Provisioning a snom Lync phone is simple and straightforward.

Provisioning can be done manually or via auto provisioning. The provisioning can be standard or custom with third party tools. The snom Lync phones can work independently or in association with a PC.

First, plug in the Lync phone and wait for it to boot up. Observe that the screen is lit which verifies that the Power over Ethernet (PoE) is working.

Authentication is the first and most important step in setting up the phone because it validates the user's credentials. Personal Identification Number (PIN) authentication and extensions need to be established with the Lync server and an appropriate PIN policy must be in place.

Evaluation and Piloting

You may want to start with a small number of phones before you consider auto provisioning because you will not want all phones to be equally

configured, such a lobby phones. Special provisioning cases will probably be easier to configure manually than automatically. Further, there may be occasions when manual phone configurations will be required that do not use the standard configuration.

All snom phones are shipped with standard SIP firmware, which needs to be upgraded to the Lync UC edition to add Lync features. Adding UC edition does not affect the SIP features. This is an add-on, not a replacement. The phone will still be operational with the SIP IP-PBX, providing dual phone service on a single phone.

Updating to UC edition firmware can be done manually, which is typical in pilot tests, or via Lync Server for mass auto provisioning. For manual updates, it is best to work via the web graphical interface of snom phones. Just enter the IP address of the phone into your web browser for access (press menu key, select maintenance, view system information to get IP address). Within the GUI, you may want to click on the “software update” menu on the left side of screen and paste the UC edition firmware URL file into the box and click update. The phone must have Internet access for this to work.

When you are ready for volume provisioning, you can load the *.cab file that is located in same location as UC edition firmware and install it into the Lync server along with the UC edition firmware file you wish to install on each phone. Access to the UC edition download page will require the administrator to create an account.

Standard Provisioning or Custom Provisioning?

Using the default features of UC edition firmware is the simplest way to deploy snom phones. One can take the phone out of the box and place it

on the end user's desk for UC edition provisioning and phone deployment. This can be done via the Lync Server. Those with programmable features (snom UC edition 710, 720 and 760 models) can set up LED presence and speed dials with three clicks of the key to maximize productivity.

Standard: Out of the Box (no 3rd party tools)	Customize the phone for you
Presence status	Speed dial presence LED keys
Extension & PIN sign-in	Intercom/Paging
Music on hold	Personal directory up to 1K
Lync buddy list on phone	Custom ring tones (2 Lync Reg)
Auto provisioned via Lync server	Boss/Admin (SLA) function
Address Book (AD) search key	Transfer calls to voicemail
Dual SIP stack	OEM display with client logo
Pack Orbit	Back-up settings

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The Importance of Customizing Common Area Phones

snom 710 VoIP business phone

Most of the phones will be dedicated to a particular user but there will be phones in common areas such as lobbies, conference rooms, warehouses, and security/emergency phones, which are used by many different people. Provisioning common area phones should be performed by telecom or the help desk personnel – not by the user – to ensure security.

Before provisioning common area phones, you need to configure call control behavior such as “Are call transfers allowed?” For example, transfers may be permissible in a conference room but not in a lobby. You may want block privileges so that the common area phones can only call internally. You may also disable the integrated Ethernet switch by a simple disablement within the phone.

Auto provision or auto configuration is a timesaving approach, which offers centralized control and reduces the time and effort for administrators (and eventually the end user) to manage and use the phones.

Chapter Three

Customizing Your snom Lync Qualified Phone

Not all Lync IP phone users are equal or have the same business needs. That's why tailoring the IP phones for specific users requires customization.

Customization is the process by which an individual or a group modifies a technology (IP phone) to suit their needs and requirements and makes it their own. Customization can be viewed as a form of personalization, which involves using technology to accommodate the differences between individuals and groups of users.

Customization personalizes the IP phone for the user and yields a device that is tuned to the individual user or a specific group. It improves productivity and may improve responsiveness to emergency situations. Customization keeps track of who called whom and when. The storage of placed and received call information avoids the need to take notes on these activities. Customization allows the user to make the phone their own.

Customization enables administrators to restrict features and functions to only those with permission. Common area phones (usually located in lobbies, conference rooms, emergency calls, classrooms, etc.) should be secured and customized for their location, not allowing open access to all the features normally provided to individual users.

Important Considerations for Customization

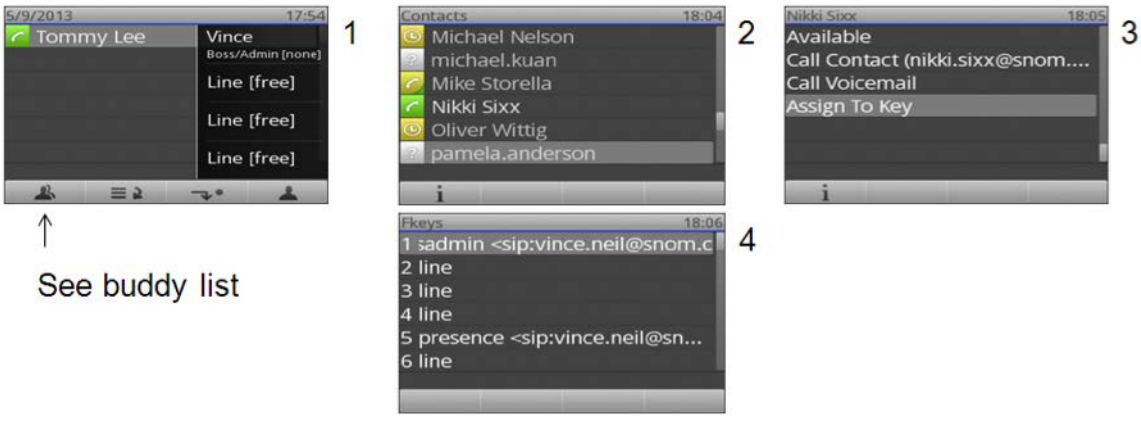
There are two classes of Lync IP phone, qualified and optimized. In most cases, Lync qualified phones are the better option for organizations that require customization, simply because the degree of customization is far greater than with Lync optimized phones.

There are several factors to consider when deciding whether and to what extent Lync qualified IP phones can and should be customized. These include:

- Who will use the phone?
- Where will the phone be located?
- What privileges or restrictions should be applied to the customized phone?

snom's Lync qualified phones can be customized in the following ways:

- Lync address book creation and search
- Boss/administrator
- Speed dial
- Multi-line appearances
- Busy lamp fields
- Transfer - 1 button, safe, direct to voicemail
- Intercom - one and two way, single or group
- 1 button call park



Customize Key w/ Speed Dial

To use these customizable features effectively, the phone must be versatile and simple to use, with the ability to add or remove features easily. That said, programmable keys are a necessity.

Very often the default configuration may not meet the needs of everyone within the company. Some organizations may want to enable a standard set of presence speed dials, intercom and paging between phones, and set up Boss/Admin configurations as custom configuration. Some or all of these settings can be used as a custom setting file for a company, department or user. This can be achieved using complementary third party tools provided by snom to back-up and manage each of these phones. It is best to understand what you need in advance so you can select the optimal phone for the task, and compile a settings template, which you can then provision in your own way.

For more information on customizing your Lync phone, download this Webinar.

Why Customize?

Schools Customize Phones to Restrict Access and Enable Intercom and Paging Features

Paging, intercom and presence features cannot be made available to students and visitors.

School principals and administrators want presence information, boss/admin features, intercom, and paging features. These phones should not be available to students or visitors and should be able to support a wide range of features. One capability allowed can be the dual Ethernet port operation, one port connected to the LAN switch and the other port to PC. If this port is not disabled, anyone can connect a device to this second port and invade the school's network.

Classroom phones are essentially extension phones.

If a phone is to be made available to office visitors, that phone should have the dual port operation disabled and the feature set limited. The visitor phone should not be capable of accessing the intercom and paging features and only the principal and administrators should have multi-line access.

Advanced Lync features made available to school administrators.

The classroom phones should essentially be an extension phone. It should have only those features necessary to communicate internally with limited intercom and paging features. The classroom phone should have the phone's second Ethernet port disabled so that malicious student behavior can be prevented.

Why Customize?

Hospitals Customize Phones to Share Connections and Tasks

Nurse's station phones and physician's phones must have multi-line capability so calls can be picked up anywhere in the hospital.

Phones for nurse's stations need features allowing the sharing of connections and tasks. The nurse's station phone must have multi-line capability so that calls can be picked up anywhere in the hospital. There needs to be a "nurses group" button on every nurse station phone throughout the hospital.

Call transfer from nurse to doctor must be one-button operation.

Doctor's phones, which may also be located in different parts of a hospital, will have the same requirements. The transfer of a call from a nurse's phone to a doctor's phone must be a simple and as fast by pressing a single button. Paging and intercom operation should be available to all the nurse and doctor phones.

Paging/intercom capability must be available to doctors and nurse, but disabled in common-area phones.

The phones in a hospital lobby, waiting area, and the patient rooms should be limited in their feature set and be unable to communicate with the nurse or doctor group multi-line phones.

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Chapter Four

PC/Phone Integration & Lync with Voice

The benefits of IP phones have by now been well established. We now know that working with a mouse and computer screen for voice communication can deliver unique capabilities that enhance flexibility and collaboration. Connecting both over Ethernet offers the best of both worlds. This deep integration of Microsoft Lync with snom desktop phones is the essence of snom's forthcoming Better Together over Ethernet (BToE) UC edition firmware.

BToE pairs snom's Lync qualified phones with a desktop PC and its Lync soft client through an Ethernet connection. This capability is offered through a new version of its snom UC edition firmware for its standards-based Lync qualified phones. The firmware, which is in beta stage and will be available in 2014, gives users the ability to utilize more Lync features from both the phone and PC, providing new levels of convenience and flexibility.

Lync qualified IP phones use endpoint firmware developed by the manufacturer and do not require gateways for interoperability. They are fully tested and qualified by Microsoft's Lync device team to provide direct connectivity, core call functionality, presence awareness, and server management and provisioning. Lync qualified phones support core Lync

features and also allow for customized telephony features and third party voice applications.

snom UC edition firmware

BToE operates over TCP/IP without any USB connection required between the snom phone and the PC running the Lync client. The user experience remains unchanged and the Lync 2010 or 2013 clients need no special update. This is achieved via a plug-in transparent for the operating system and the Lync client. Like the well-known Boss-Admin feature, the native plug-in is a result of Microsoft and snom's joint efforts in expanding the Lync device ecosystem and functionality.

Another example is placing a call on hold. This can be done from either the snom phone or through the Lync client on the PC.

There are a number of features that can be accessed using snom's BToE including click-to-dial and ad hoc conference calls.

With business deployments of Microsoft Lync with voice on the rise, the desktop phone continues to serve as the main interface for Lync-based voice communications. BToE integrates more and more unified

communications functions onto the phone and represents the next step in the desktop phone's evolution.

Microsoft Lync, together with IP networks and the SIP standard, is a breakthrough in Unified Communications, offering flexibility and collaboration on an unprecedented scale.

We hope this e-book served well as a guide to everything you need to know about using Microsoft Lync with snom phones.

For more information about snom's Lync qualified products, visit http://www.snom-uc-edition.com or go to http://www.snom.com.

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