



esnatech®  
**Office-LinX™**  
cloud connect edition  
for cisco unity

# Technical Engineering Guidelines

Doc. Version: 8.5 (f)  
Date: Jan 2012



**Unify & Simplify**  
all your daily communications

# Office-LinX™ Cloud Connect Edition for Cisco Unity

This guide covers the guidelines to be followed when deploying Office-LinX Cloud Connect Edition as a bridge between Cisco Unity / UCM servers and Google Apps in the cloud.

## Contacting ESNA Technologies

Esna Technologies Inc.  
30 West Beaver Creek Rd., Suite 101  
Richmond Hill, ON L4B 3K1

**Tel:** +1 905-707-9700

**Fax:** +1 905-707-9170

**Website:** [www.esnatech.com](http://www.esnatech.com)

For hardware and software support, contact:

**Tel:** +1 905-707-1234

**E-mail:** [techsupp@esna.com](mailto:techsupp@esna.com)

For documentation request and feedback, contact:

**E-mail:** [documentation@esna.com](mailto:documentation@esna.com)

## Copyright & Trademarks

**ESNA® Technologies Inc.**  
*30 West Beaver Creek Rd., Suite 101  
Richmond Hill, ON L4B 3K1*

Copyright © 1992-2012 by Esna Technologies. All rights reserved.

Office-LinX Unified Communications Server is made available under the terms of the Esna Technologies Inc. (E.T.I.) license agreement without express or implied warranties of any sort, including, specifically, any warranties relating to the performance or maintenance of the program.

While every effort has been made to ensure accuracy, Esna Technologies Inc. will not be liable for technical or editorial errors or omissions contained within the documentation. The information contained in this documentation is subject to change without notice.

Esna software and related documentation may be used only in accordance with the terms of the Esna Technologies Inc. license Agreement and copied only to provide adequate backup protection.

Other brands and their products are trademarks or registered trademarks of their respective holders and should be noted as such.

# Table of Contents

Introduction to Cloud Connect .....	1
Cisco Unity Connection to Google Gmail .....	1
Unified Messaging .....	1
eFax Services .....	1
UC Mobility Services .....	1
Installing Office-LinX Cloud Connect Edition .....	3
Server Messaging Type Characteristics And Deployment Scenarios .....	10
E-mail Server Synchronization (IMAP TSE) .....	10
Unified Messaging Deployment Email Requirements .....	10
Unified Messaging Capacity .....	12
Deployment: .....	13
Office-LinX Cloud Connect Edition in a Hosted Environment .....	14
Office-LinX Cloud Connect Edition Housed On Site .....	14
Messaging Configuration (IMAP) .....	15
Server Specifications .....	18
General Requirements .....	18
Maximum System Capacity .....	18
Network Requirements and Specifications .....	19
TCP/IP ports used by the application .....	20
Software Requirements .....	21
Media Support Requirements .....	21
ANTI-VIRUS Software Installation .....	21
Disk Fragmentation Management .....	22
IMAP TSE Gateway Requirements .....	23
Server Network Requirements .....	24
Server Email Integration Requirements .....	25
General System Configuration .....	26
Message Compression and Storage .....	26
Server Configurations .....	28
Configurations .....	30
Supported Servers .....	31
Current Models .....	31
Server Requirement Q & A .....	33
What is a RAID 10 system? .....	33
How about RAID 6 or RAID 5? .....	33
What speed Hard Drives should we use? .....	33
What can I do to increase the effectiveness of the RAID system? .....	33
What is the total storage of a RAID system? .....	33
Is there a numerical restriction on the RAID system? .....	33
Can I install Office-LinX on an existing server that is already in use? .....	33
Virtual Machine Support .....	36
Requirements .....	36
Virtual Environment Limitations .....	36
VMware Technology Guidelines .....	36
VM Environment Feature Comparison Chart .....	37
Virtual Environment Deployment Example .....	38
CPU Usage .....	38
Datastore Latency .....	39
Disk Usage Rate .....	39
Network Usage Rate .....	40



Conclusion ..... 40

Virtual Machine Environment Specification Example ..... 41

**Dealer Certification ..... 44**

    Pre-Installation Preparation ..... 45

    Dealer Obligations ..... 45

    Esnatech's Commitment ..... 45

        What T2C engineers WILL do for you: ..... 45

        What T2C engineers will NOT do for you: ..... 45

    Certification Process ..... 46

# Introduction to Cloud Connect

Office-LinX is a SIP-based software solution that generates communication and collaboration revenue from organizations that want to migrate core business solutions, such as email and sales force automation, to the cloud. Its cloud-based integration provides competitive differentiation on new greenfield UC opportunities, specifically with customers using cloud-based applications, such as Google™ Apps email and collaboration platforms.

The Esnatech Office-LinX platform offers new integrated services for the Cisco Unity Connection and Cisco Unified Communications Manager. Esnatech's Office-LinX Cloud Connect Edition seamlessly integrates Cisco Unity Connection with Google Gmail for integrated unified messaging and communication services. Office-LinX is a software application that enables Cisco Unity Connection to seamlessly provide integrated voice and fax services with these market leading platforms that are becoming essential alternatives for organizations looking to leverage the cloud to reduce costs and increase efficiencies with email and collaboration.

## Cisco Unity Connection to Google Gmail

### Unified Messaging

- ◆ Cisco Unity Connection voicemail integrated with Google Gmail and message waiting light support with an existing Cisco PBX.
- ◆ Cisco Unity Connection users can integrate their existing voicemail with Google Gmail for native email access to read, respond, and manage right from the web based and embedded email platforms or web-services.
- ◆ Office-LinX Cloud Connect Edition delivers the core unified messaging functionality users are accustomed to from traditional email solutions, such as phone or PC playback, live reply, and more through integrated web services.

### eFax Services

- ◆ Fax messaging integrated with Google Gmail and Google Docs.
- ◆ Fax-on-Demand.
- ◆ Email-to-Fax (fax printing from the desktop).
- ◆ Google web fax gadget that can be published in Google Apps for sending fax documents through corporate phone systems.

### UC Mobility Services

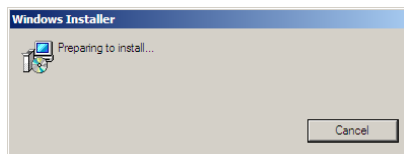
- ◆ Provides all the services that are included in the Office-LinX Cloud Connect Edition and with the eFax license, plus integrated presence and dialing from the Google Apps web framework.
- ◆ Offers rich phone status and phone presence integrated with Google Talk.
- ◆ Phone status enables click-to-dial from Google Talk Contacts using the corporate phone system.
- ◆ Ability to have Google Talk phone presence integrated with a user's Google Calendar.
- ◆ Live screen pops and call control—live calls will get integrated with Google Contacts to provide live status of incoming calls native in Google Apps.
- ◆ Google Apps' users can manage live calls in real-time and decide which calls to take and which calls to send to Google Gmail in order to leave a message.
- ◆ Knowledge screen pops—provides Google contact resolution on incoming calls; Office-LinX UC service will execute Google desktop searches based upon the incoming caller ID information for live call control and intelligent call management.
- ◆ Fixed-mobile Convergence Server enables find-me/follow-me, call blasting, and call hand-off with users' existing enterprise phone system—provides Google Voice functionality with users' existing extension and DID numbers.



## Installing Office-LinX Cloud Connect Edition

- ✓ **Note:** Make sure that the **IIS** and **FTP** Services are available on the server before you proceed with the installation. Also please make sure that **Windows Firewall** is disabled and **Windows Automatic Update** is turned off.
- ✓ **Note:** If you have Autorun disabled on your system, please browse into the DVD and double-click the **InstallUC.bat** file to begin the installation process.
- ⊘ **Warning:** The installation / upgrade process **must be performed on the server computer console**. You **cannot** install / upgrade the system through a remote desktop connection.

1. Insert the Office-LinX 8.5 installation DVD into the DVD drive. The following screens will appear.



2. Once the Windows components have been verified, the following screen will appear.

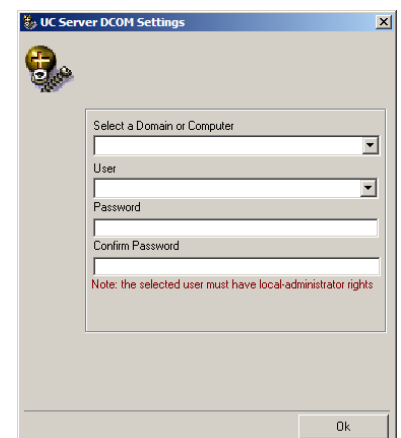
Click **Next** to begin the installation procedure.

- ✓ **Note:** The installer will automatically install the necessary packages at the beginning of the installation if they do not already exist on the system. These packages may include **Sentinel Protection**, **Microsoft Visual C++ Redistributable** and **Microsoft .Net Framework 3.5**. This process may take a while depending on the required components.
- ✓ **Note:** Clicking on the **Documentation** button will provide you with the default set of PDF documents which comprehensively cover most aspects of Office-LinX.



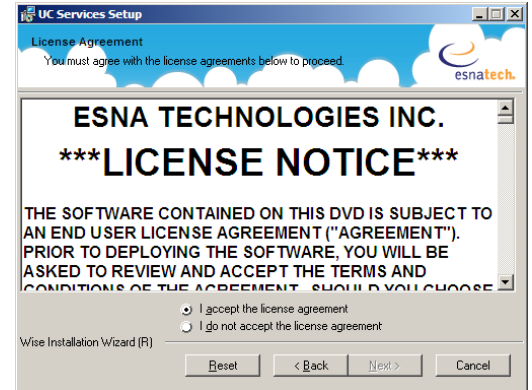
3. Enter the DCOM settings (local machine administrator login information). This is required by services which use local administrator rights.

Click **OK** after entering the necessary credentials.



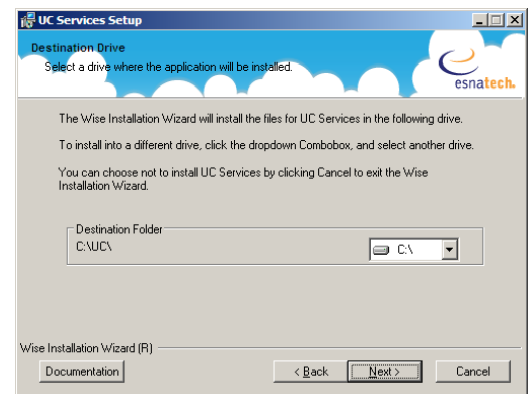
- Review all the license agreements and select the **I accept** button for all entries to continue.

Click **Next** when ready.



- You will be asked to select the destination of the installation. You may change the hard drive destination through the drop down menu. By default, the installation will be made on the C drive.

Click **Next** to continue.



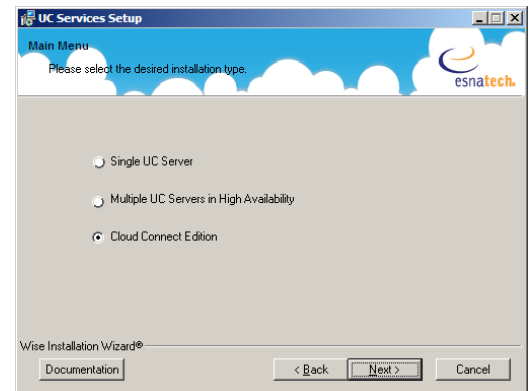
- Enable **Cloud Connect Edition**.

Click **Next**.

**Single UC Server:** When operating Office-LinX on a single server computer.

**Multiple UC Servers in High Availability:** When running Office-LinX in High Availability mode for redundancy.

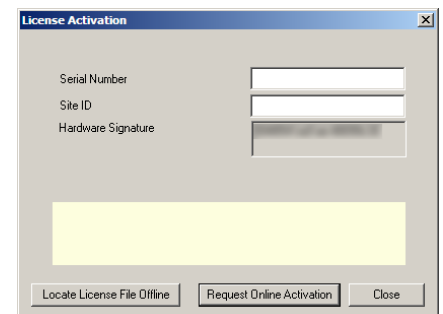
**Cloud Connect Edition:** Enable this option if you are installing the Office-LinX Cloud Connect Edition.



- Once the process is complete the licensing screen will appear. It is recommended that you use Online Activation whenever possible. To do so, simply enter the **Serial Number** and **Site ID** which has been provided to you.

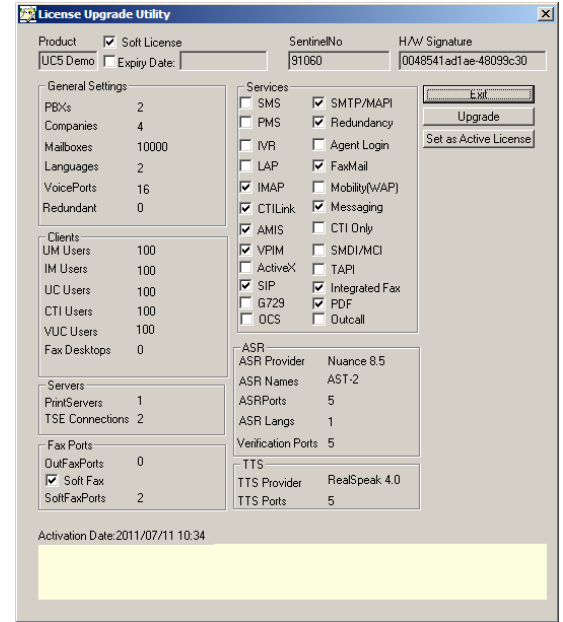
Click **Request Online Activation** when finished.

- Warning:** It is essential that the system/PC clock be properly set **before** activating the license. Any subsequent changes to the clock can adversely affect or terminate the license.



8. Confirm the contents of your license then click on the **Set as Active License** button.

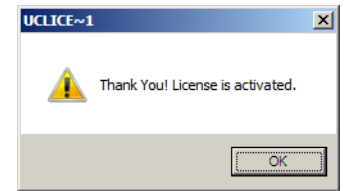
**Note:** Whenever your license is updated (e.g. addition of new features, extension, etc.) please restart the server after activating the license so that the new parameters can become active.



9. If the process was successful the following confirmation screen will appear.

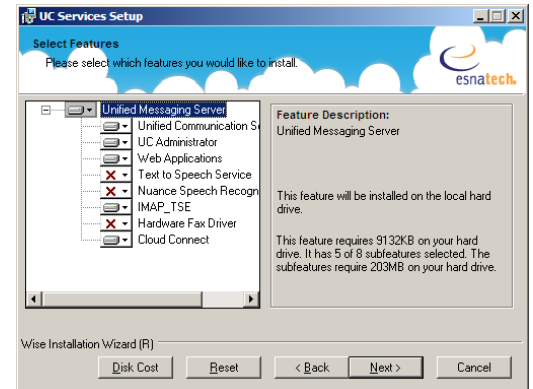
Click **OK**.

10. Click **Exit** to close the license window and continue with the installation.



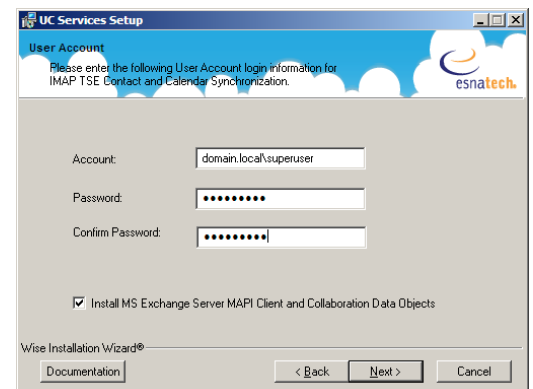
11. Select the **Components** required at your site.

Click **Next**.



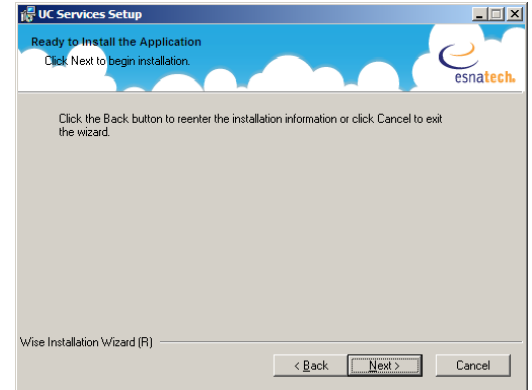
12. Enter the **Account Information** for the mail server which will be used during **IMAP TSE synchronization**. This will usually be the Superuser account from the Exchange server but may vary depending on your site's mail server. Please leave the entry blank if you are not synchronizing calendar and contact data.

Click **Next** to continue.

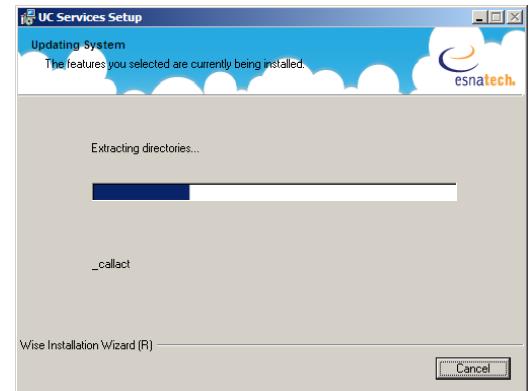


13. The preliminary information required for installation is now complete.

Click **Next**.



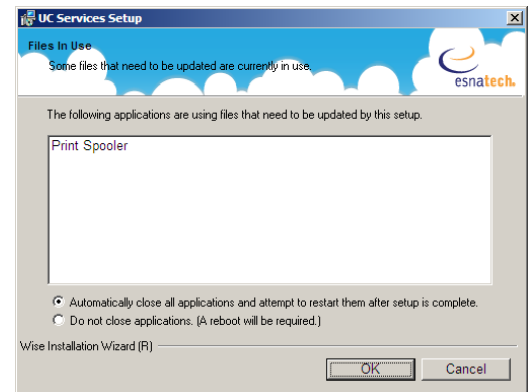
14. The selected components will now be installed. This process may take a while.



15. If you are warned about components being in use, either use the automatic option or manually close the process which is interfering with the installation.

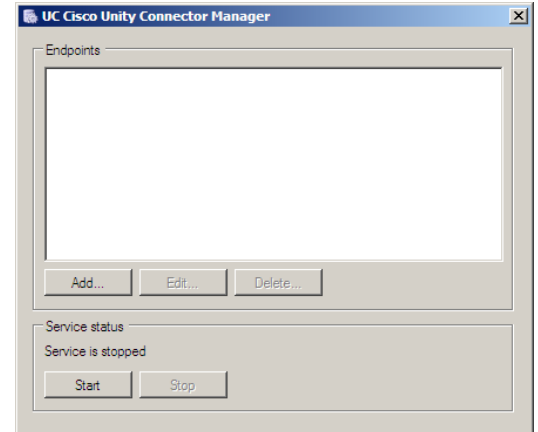
Click **OK** when ready.

16. After all the components are copied, you may be asked to provide the settings for the **PBX** that you have chosen. Since this process varies greatly from system to system, please ensure that you configure your site's PBX exactly as required.



17. The Cisco Unity Connection Manager starts.

Click **Add** to create a new connection.



18. Enter the required information.

**Name:** Give the connection a descriptive name.

Cisco Unity Connection

**Server:** Enter the URL/IP Address of the Unity server.

**Account:** Enter the user account login name.

**Password:** Enter the password for the login account.

- ⚠ Important:** You must ensure that the specified account possesses the **Mailbox Access Delegate Account Role** on the Unity Connection server.

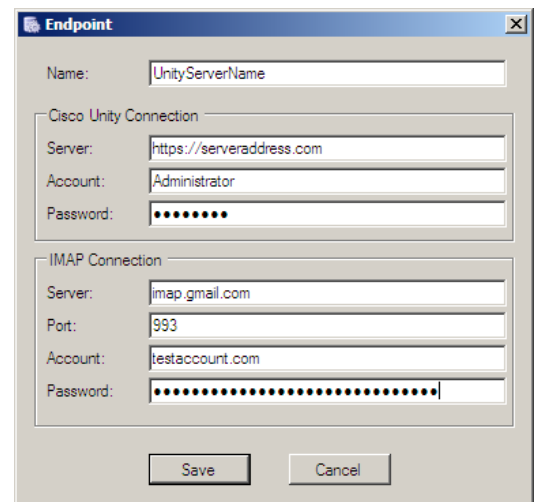
IMAP Connection

**Server:** Enter the URL/IP Address of the IMAP server.

**Port:** Enter the port number the IMAP server will use.

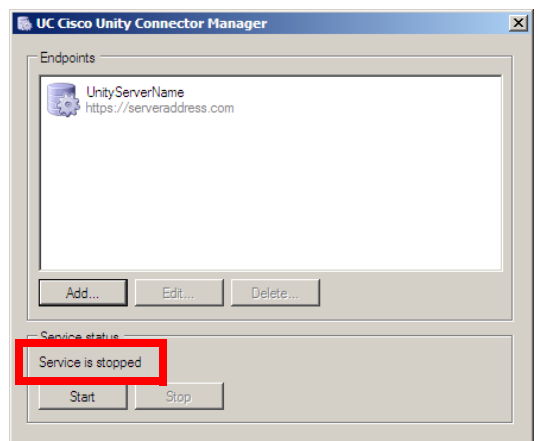
**Account:** Enter the user account login name.

**Password:** Enter the password for the login account.

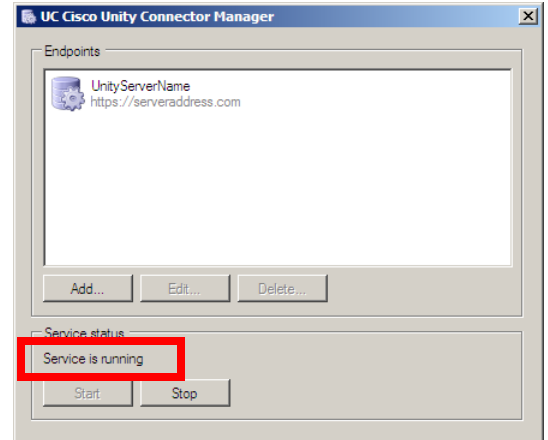


19. The new connection has been created. The service is currently stopped.

Highlight the connection, then click **Start**.



20. The connection is now running.



21. Click **Finish** to restart the server.

If you wish to restart your computer at a later time, disable the **Restart** check box then click **Finish**.

22.



## 3

# Server Messaging Type Characteristics And Deployment Scenarios



## Chapter Summary

E-mail Server Synchronization (IMAP TSE) .....	10
Unified Messaging Deployment Email Requirements .....	10
Unified Messaging Capacity .....	12
Deployment: .....	13
Office-LinX Cloud Connect Edition in a Hosted Environment .....	14
Office-LinX Cloud Connect Edition Housed On Site .....	14
Messaging Configuration (IMAP) .....	15

# Server Messaging Type Characteristics And Deployment Scenarios

## E-mail Server Synchronization (IMAP TSE)

### Unified Messaging Deployment Email Requirements

Deployment of Unified Messaging into an email system is limited to tested and verified email server environments. Please refer to the chart below to determine if a site is compatible for UM deployment.

Email Server	Requirements	Contact Sync	Calendar Sync	Comments
Google Apps Gmail	Configure to be compatible with Office-LinX, enable IMAP4	Y	Y	OAuth performs Super User function

**Note:** IMAP TSE is based on IMAP4 standards. Other email servers with this same capability may function correctly but take note that they have not been validated by Esna.

**Warning:** Use of the IMAP protocol is required to access all of the synchronization functions of Cloud Connect. If IMAP is not used, any messages that are read or deleted by the Cloud Connect user will not have that status reflected on the Unity Server.

When a voicemail message is received by the Office-LinX Server, the MWI on the user's telephone is extinguished. When the message from the phone or Web Client is read the MWI is no longer lit.

Unified users with access to all their phone and email messages may notice a slight delay before their MWI is extinguished when accessing their messages via their email client (Outlook, Lotus Notes, etc). This delay is very short and can be modified based on individual user priorities and on how many users are in the feature group.

The following tables indicate MWI behavior in a **controlled** environment. The following data reflects traffic with inbox-only synchronization with a maximum message count of 250 messages in the inbox. All data provided were tested in version 7.1 of Office-LinX.

→ **100 UC User Scenario**

Total Number of Users in Each Feature Group	Priority Assigned	Time to Extinguish MWI after VM message read in Email Client
		<i>Average Time</i>
100	Maximum	16 sec

Max No. of Mailboxes synchronized per cycle = 5

Number of Messages Sent Per Sync Cycle = 10

→ **250 UC User Scenario**

Total Number of Users in Each Feature Group	Priority Assigned	Time to Extinguish MWI after VM message read in Email Client
		<i>Average Time</i>
100	Maximum	24 sec
100	Medium	44 sec
50	Minimum	24 sec

Max No. of Mailboxes synchronized per cycle = 10

Number of Messages Sent Per Sync Cycle = 50

→ **500 UC User Scenario**

Total Number of Users in Each Feature Group	Priority Assigned	Time to Extinguish MWI after VM message read in Email Client
		<i>Average Time</i>
100	Maximum	24 sec
200	Medium	85 sec
200	Minimum	252 sec

Max No. of Mailboxes synchronized per cycle = 10

Number of Messages Sent Per Sync Cycle = 50

→ **1,000 UC User Scenario**

Total Number of Users in Each Feature Group	Priority Assigned	Time to Extinguish MWI after VM message read in Email Client
		<i>Average Time</i>
100	Maximum	24 sec
200	Medium	85 sec
700	Minimum	339 sec

Max No. of Mailboxes synchronized per cycle = 10

Number of Messages Sent Per Sync Cycle = 50

→ **5,000 UC User Scenario**

Total Number of Users in Each Feature Group	Priority Assigned	<i>Time to Extinguish MWI after VM message read in Email Client</i>
		<i>Average Time</i>
150	Maximum	TBD
250	Medium	TBD
4600	Minimum	TBD

Max No. of Mailboxes synchronized per cycle = 10

Number of Messages Sent Per Sync Cycle = 50

→ **10,000 UC User Scenario**

Total Number of Users in Each Feature Group	Priority Assigned	<i>Time to Extinguish MWI after VM message read in Email Client</i>
		<i>Average Time</i>
200	Maximum	TBD
400	Medium	TBD
9400	Minimum	TBD

Max No. of Mailboxes synchronized per cycle = 10

Number of Messages Sent Per Sync Cycle = 50

**Note:** When synchronizing (mailbox) inboxes containing more than 10,000 items, the system performance will be adversely affected until all such items are synchronized.

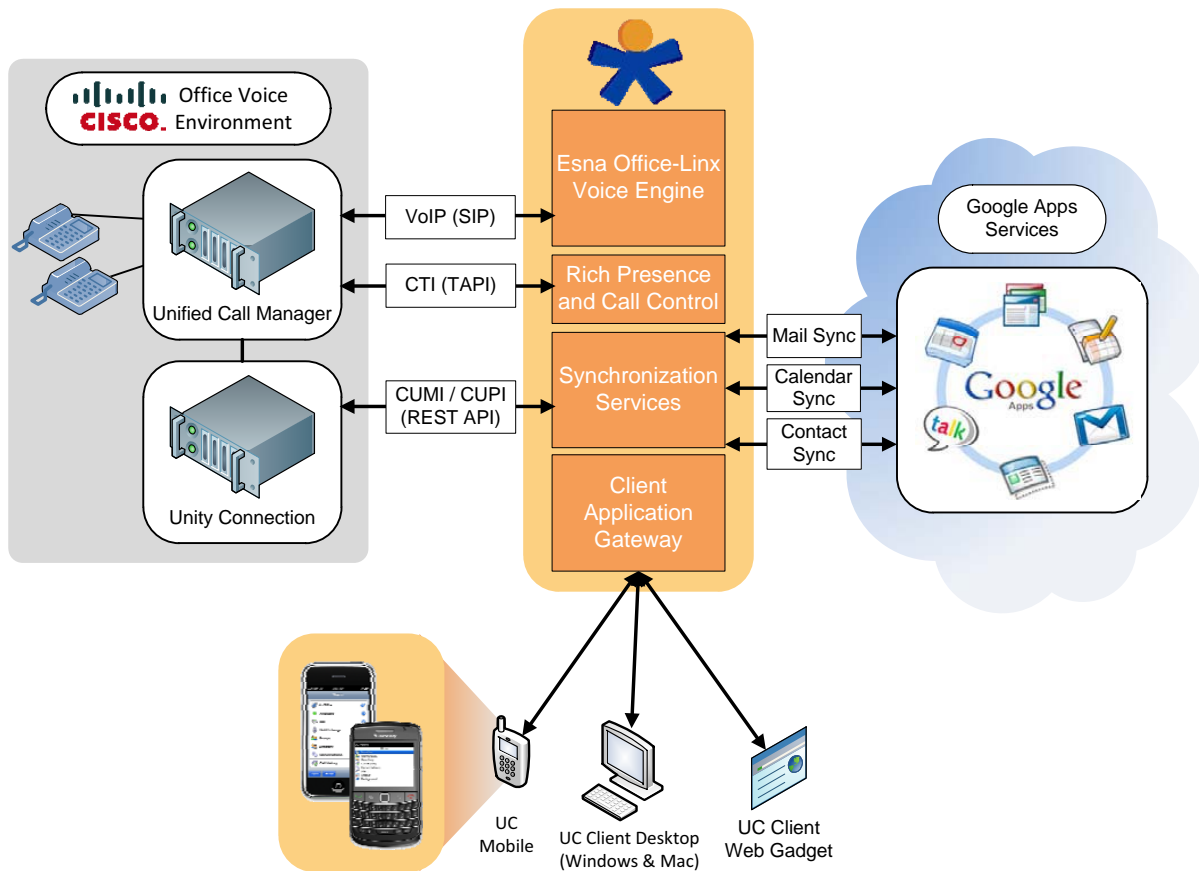
**Note:** User Scenario for 5,000 and 10,000 users will be provided in the near future.

## Unified Messaging Capacity

The following chart illustrates the capacity of TSE server on a UM environment.

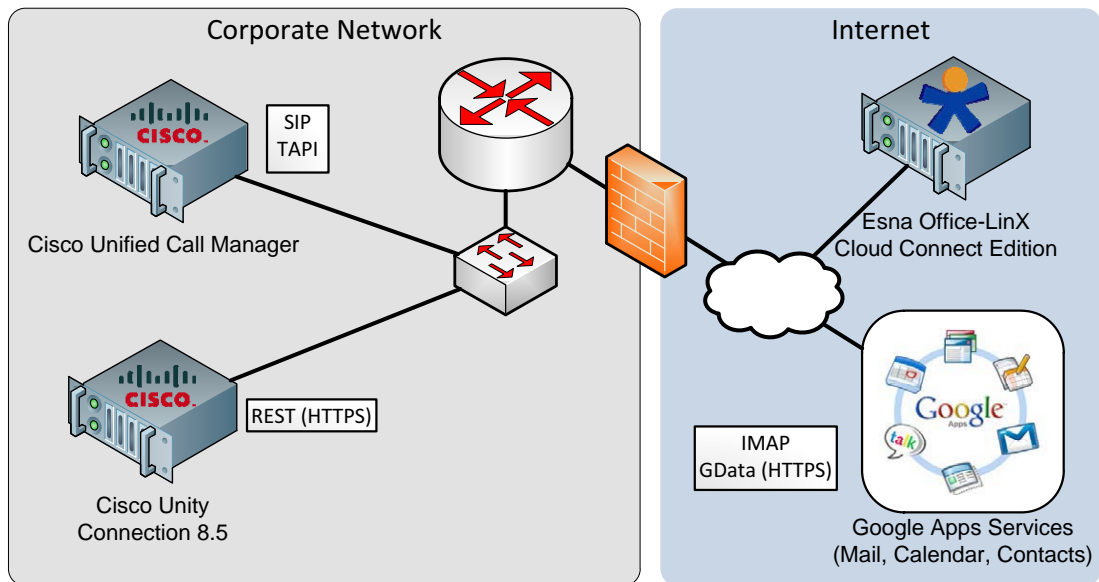
	Capacity
Maximum number of total users on system	20,000
Maximum number of UC users on system	10,000
Maximum Number of users for 1 TSE Server	5,000
Maximum Number of users for 2 TSE Servers	10,000
Maximum Number of users for 3 TSE Servers	15,000
Maximum Number of users for 4 TSE Servers	20,000

# Deployment:



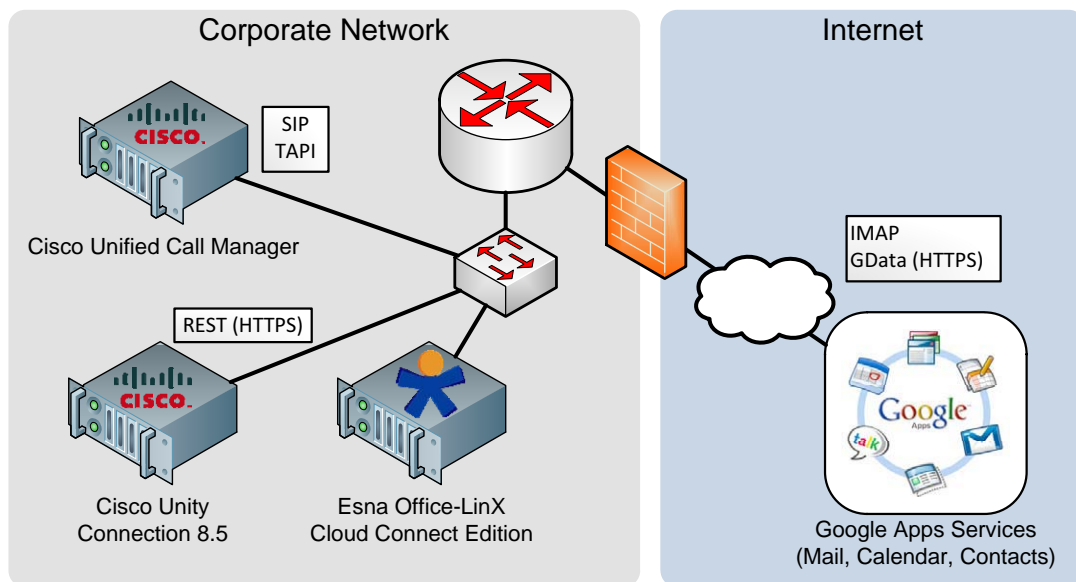
Office-LinX Cloud Connect Edition bridges Cisco's Unified Call Manager and Unity Connection servers with Google Apps in the Cloud, providing enhanced and globalized connectivity to your users. Access your corporate mailbox, read messages, and compose new ones to send to contacts. Update your contacts list and calendar through Google Apps, and Cloud Connect will mirror those changes on the Unity Server.

## Office-LinX Cloud Connect Edition in a Hosted Environment



Office-LinX Cloud Connect Edition can be hosted remotely from the Cloud, freeing up corporate resources and guaranteeing global access and permanent availability. The hosting services provider manages the hardware and software, keeping all systems running at peak performance and availability, leaving your staff free to handle existing infrastructure.

## Office-LinX Cloud Connect Edition Housed On Site



Office-LinX Cloud Connect Edition can also be housed at your site, providing you with the ability to instantly maintain and manage all aspects of the service for your corporation, as well as offering better data security. On site hosting gives you immediate access to the system so that any problems can be dealt with swiftly. Any required changes can be made as the need arises. All data for the system is kept on your own computers, providing the benefit of added security for your sensitive information.

## Messaging Configuration (IMAP)

This section helps you construct a configuration of an Esna Office-LinX Messaging solution when using IMAP as the protocol to retrieve messages from the mail server. The material presented here is applicable to the following email servers:

- ◆ Gmail (Google Apps)

→ **This section uses the following criteria:**

- ◆ number of users
- ◆ email traffic
- ◆ voice mail traffic

**Note:** The ratio of voicemail users to UC users is NOT considered relevant to this configuration.

Software	Minium Specifications
IMAP TSE Server OS	Windows XP
	Windows Server 2003 SP1/R2
	Windows Server 2008, Windows Server 2008 R2
	Windows 7

- ◆ IMAP4 compatible mail server
- ◆ IMAP services enabled on the email server
- ◆ The IMAP TSE Gateway acts as a group of IMAP4 clients to connect to the messaging storage server to perform synchronization activities for Office-LinX.
- ◆ User name and password (with permission) so that UC can access user accounts on existing mail server
- ◆ The Email Server must be IP-addressable from Office-LinX
- ◆ It is recommended that the email environment is fully operational before Office-LinX Server is implemented
- ◆ It is recommended that IMAP services are installed and fully operational before deploying Office-LinX with the IMAP TSE Gateway
- ◆ In cases of +500 UC users the IMAP TSE should be installed on a server separate from the Office-LinX Server (Distributed model)
- ◆ There must be a free IMAP port available between the Office-LinX and Email servers. In addition, a TCP/IP connection must be available between the LDAP, Office-LinX, and Email servers.
- ◆ IMAP TSE supports a maximum of **5,000** users per server.



# 4

## Server Specifications



### Chapter Summary

Network Requirements and Specifications .....	19
Software Requirements .....	21
IMAP TSE Gateway Requirements .....	23
Server Network Requirements .....	24
Server Email Integration Requirements .....	25
General System Configuration .....	26
General System Configuration .....	26
Supported Servers .....	31
Server Requirement Q & A .....	33

# Server Specifications

## General Requirements

### Maximum System Capacity

Feature	Capacity
Company Directory	40, 000 entries
Voice Mailboxes	40, 000 - on Distributed Server 20, 000 - on Standalone Server
Unified Messaging Users	10, 000 - on Distributed Server 1,000 - on Standalone Server

- Note:** Depending of the level of functionality desired, the appropriate license has to be purchased. Purchase of Office-LinX itself is insufficient.
- Note:** Office-LinX is a dedicated application which should only be installed as a primary application on any server. Sharing system resources with other application may prohibit proper functionality of Office-LinX.

## Network Requirements and Specifications

Office-LinX can exist as a standalone server on a local area network which allows for network-based user and system administration.

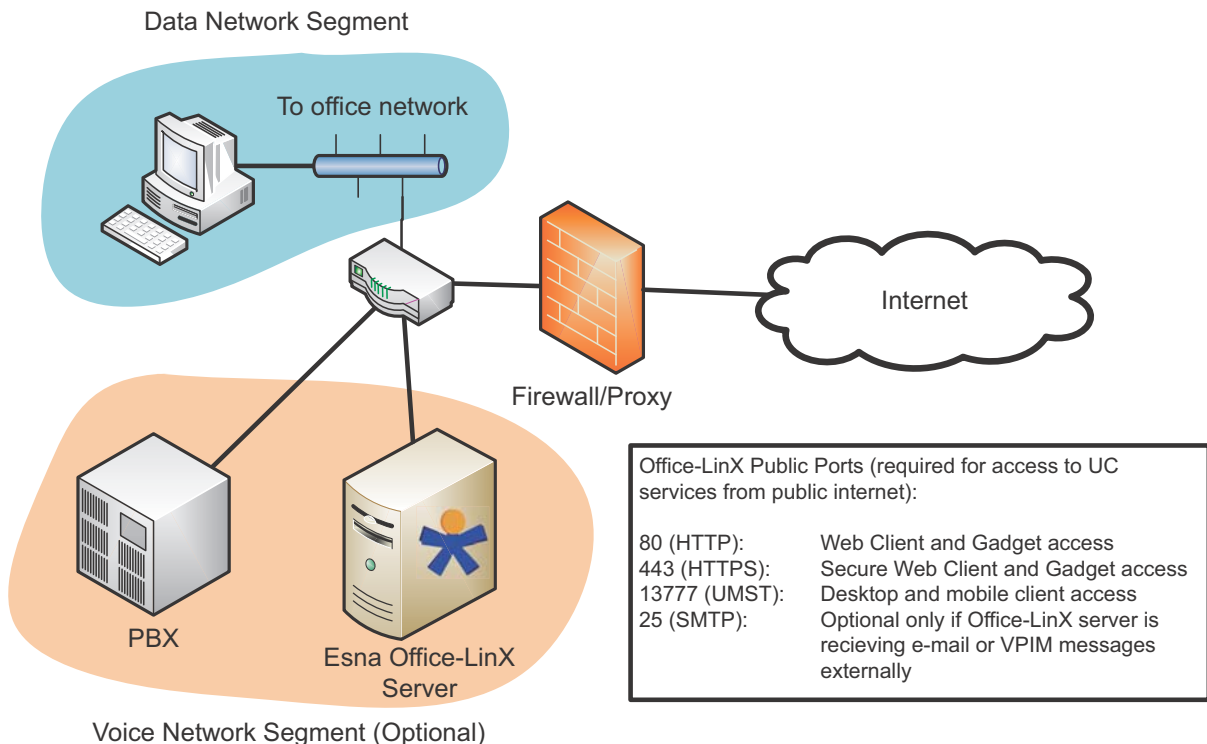
For proper deployment, connect the Office-LinX server to your network via the 100 baseT NIC interface and then boot up the server.

**Warning:** You can only have maximum of **2** network cards installed in a single server computer.

**Note:** The Office-LinX server must be provided with sufficient administrative rights to the network so it can co-exist as another workstation on your local area network. For more information contact your LAN Administrator.

**Note:** Office-LinX server does not support IPv6 and is only compatible with IPv4. If the server is to access the internet, a secondary source (e.g. router, hub, etc.) which utilizes IPv6 may be used. For internal traffic, everything must be configured through IPv4.

The following is an example of how Office-LinX can be configured within an organization's network. By having a network infrastructure as shown here, you can ensure the functionality of Office-LinX server within the organization while protecting all assets through the necessary security measures (e.g. firewall) from internet or other external connections.



→ **Before installing the Office-LinX system you must have the following software installed:**

- ◆ Supported OS:
  - Windows XP (SP2+)
  - Windows Server 2003 R2 Enterprise Edition, SP1 Standard Edition
  - Windows 7 Ultimate, Professional, Enterprise (32 and 64-bit)
  - Windows Server 2008 (32 and 64-bit)
  - Windows Server 2008 R2 (64-bit)

## TCP/IP ports used by the application

Port Required	Application/Component	Comments
21	Integrated Fax FTP File Uploading	port used for file transfers
25	VPIM SMTP	port used for simple mail transfer
80	Web Client SRM	
110	POP3	
143	IMAPTSE Email/Contact/Calendar Synchronization	
389	LDAP Connector	
443	Web Client (SSL connection) SRM (SSL connection)	
993	IMAPTSE Email/Contact/Calendar Synchronization (SSL connection)	
2439	Sybase Mobilink	
2638	Sybase	
11000	UM Monitor	
13777	UC Client Manager UMST UC Mobile	
20202	PEX Server	

## Software Requirements

- Refer to the following table for the minimum software requirements to run the Office-LinX server:

Software	Version
OS	Microsoft XP Professional SP2 32-bit Windows Server 2003 Standard SP1 32-bit Windows Server 2003 R2 SP2 32-bit Windows 7 Ultimate 32-bit and 64-bit Windows 7 Professional 32-bit and 64-bit Windows 7 Enterprise 32-bit and 64-bit Windows Server 2008 32-bit and 64-bit Windows Server 2008 R2

- Note:** Each version of Microsoft Windows requires different features and/or services to be activated before installing Office-LinX. Please refer to the **Server Install Guide** for details on each OS's requirements.

## Media Support Requirements

If you wish to utilize additional media support within the Office-LinX server (e.g. MP3 support for voice mail, PDF support for fax), you must install the necessary components on the server so that the file formats can be recognized. Please refer to the chart below for requirement examples.

File Format	Application Required	Comments
PDF	Adobe Acrobat Reader	Requirement is the free version of Acrobat Reader, not the paid version of publishing application.
DOC, DOCX	Microsoft Office	

- Note:** The Remote Printer feature of Office-LinX can be used to redirect printer/fax traffic to another computer that already has the necessary licenses installed. Please refer to chapter 25 of the Feature Guide.

## ANTI-VIRUS Software Installation

Office-LinX has only been validated with Norton Anti-virus Corporate Edition. Other anti-virus software applications that have been installed with Office-LinX are:

- ◆ McAfee VirusScan
- ◆ BitDefender

- Note:** Please ensure that, after installing your antivirus program, the UC folder and all of its subfolders are excluded from the scan. Scanning the UC folder can significantly decrease the performance of Office-LinX.

## Disk Fragmentation Management

Sites with significant amount of traffic and messages may be prone to fragmentation of the hard disk which can lead to reduced performance. In order to prevent this, you must install and configure fragmentation management software such as **Diskeeper** which can be scheduled to run primarily during off hours.

## IMAP TSE Gateway Requirements

In order to use IMAP TSE, the IMAP mail server must support the following standards:

- ◆ IMAP4Rev1 (RFC2060) - IMAP4 standard.
- ◆ IMAP4 UIDPLUS extensions (RFC2359) - extensions to IMAP4 standard for handling message IDs.
- ◆ Office-LinX Cloud Connect Edition integrates with Google Apps.
- ◆ IMAP services enabled on the email server.
- ◆ IMAP services must be installed and fully operational prior to deploying Office-LinX with the IMAP Gateway.
- ◆ User name and password (with permission) so UC can access user mailboxes on existing mail server.
- ◆ Free IMAP TCP/IP port available between the Office-LinX and email server.

## Server Network Requirements

Networking requirements depend on what configuration and traffic load the system will bear. In most cases 100 Mbps (minimum 100BaseT) will suffice between the Office-LinX, IMAP TSE and the Email servers. In larger (500+ UC user) configurations a 1 GB network connection between the Office-LinX and Email servers is required. In such cases a 1GB layer 2-switch between all servers is also required.

The Office-LinX Server can exist as a network-connected server on a LAN allowing for network-based user and system administration.

## Server Email Integration Requirements

Office-LinX Server can be a voicemail-only system although most deployments will involve some degree of email functionality.

Refer to **Server Messaging Type Characteristics And Deployment Scenarios on page 9** in this document for more information on the possible system deployment scenarios.

# General System Configuration

## Message Compression and Storage

Depending on which deployment scenario you select, messages may be stored on the Office-LinX Server, on the Email Server or both.

For more information on deployment scenarios visit Deployment: on page 13.

It is very important that you know the message storage requirements of your particular environment. The following factors will affect this calculation:

- ♦ days to keep read messages
- ♦ days to keep unread messages
- ♦ message format used
- ♦ maximum message length
- ♦ maximum number of messages allotted for per user (inbox only)
- ♦ number of Unified Messaging users (must account for email on the Office-LinX Server)

The message format is the factor used to calculate storage capacity as the format determines the size of the actual messages.

**ADPCM32** and **WAVGSM** are the two most commonly used message formats. Normally, voicemail-only users are configured to use ADPCM32, while Integrated and Unified Messaging users typically use WAVGSM.

File Format	kbytes/sec	kbytes/min	MB/hour
ADPCM OKI 32 (4bit)	32	1920	115200
G.726 ADPCM 4 bit	32	1920	115200
MPEG-1 Audio Layer 3 (MP3)	8	480	28800
Wave ALAW 8kHz (G711)	64	3840	230400
Wave MS ADPCM	32	1920	115200
Wave MS GSM 6.10	13	780	46800
Wave IMA ADPCM	128	7680	460800
Wave MuLAW 8kHz (G711)	64	3840	230400
Wave PCM 16bit 8kHz	128	7680	460800
Wave PCM 8bit 8kHz	64	3840	230400

In certain deployments where copies of voicemail messages are stored on the Email Server, storage capacities per email mailbox remain the same. Use WAVGSM format sizing when calculating storage requirements for the Email Server.

Additional coding algorithms (i.e. G.726) are available providing voice formats in WAVE while enabling compression at 1.6 kb/sec.

→ **System Configuration Sample**  
**(Base License - Office-LinX 8.5 Enterprise Edition, Part # TOL8-0404-01SW)**

- ◆ 20 000 voice mailboxes
- ◆ Unified Messaging services (or IMAP Gateway)
- ◆ 50 UC licenses
- ◆ SMTP services (VPIM not enabled)
- ◆ POP3/IMAP services
- ◆ Web Client / Web Reporting
- ◆ Third-party Collaboration services
- ◆ Fax services (Inbound fax, Fax messaging (Fax mail), Fax On Demand, soft fax (1 soft fax port included))

## Server Configurations

The following PC configurations have been created to address different system sizes:

### → **CONFIGURATION 'A' (Port/Channel Capacity: 16)**

- ◆ Single Server Configuration
  - Office-LinX Server (*IMAPTSE on same machine if used*)
  - Intel® Dual Core Processor (2.7 GHz) or higher
  - 2 GB RAM
  - 40 GB SATA HD, *7,200 RPM* minimum
  - 100 MB NIC or higher

### → **CONFIGURATION 'B' (Port/Channel Capacity: 24)**

- ◆ Single Server Configuration
  - Office-LinX Server (*IMAPTSE on same machine if used*)
  - Intel® Dual Core Processor (2.7 GHz) or higher
  - 2 GB RAM
  - RAID 1+0 *4X146 GB SCSI/SATA/SAS HD, 10,000 RPM* minimum
  - 1 GB NIC
  - Storage available 292 GB
  - Diskeeper installed to minimize fragmentation

### → **CONFIGURATION 'C' (Port/Channel Capacity: 80)**

- ◆ Single Server Configuration
  - Office-LinX Server
  - Intel® Quad-Core Xeon 5600 series CPU or higher
  - 2 GB RAM
  - RAID 1+0 *4X146 GB SCSI/SATA/SAS HD, 10,000 RPM* minimum
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC or higher
  - Storage available 292 GB

### → **CONFIGURATION 'D' (Port/Channel Capacity: 100)**

- ◆ Multiple Server Configuration
  - Office-LinX Server & Sybase Mobilink Server
  - Intel® Quad-Core Xeon 5600 series CPU or higher
  - 4 GB RAM
  - RAID 1+0 *4X146 GB SCSI/SATA/SAS HD, 10,000 RPM* minimum
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC
  - Storage available 292 GB
- ◆ IMAP TSE Server
  - Intel® Quad-Core Xeon 5600 series CPU or higher
  - 1GB RAM
  - RAID 1 *2x40 GB SCSI/SATA/SAS HD, 10,000 RPM* minimum
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC

→ **CONFIGURATION 'E' (Port/Channel Capacity: 100)**

- ◆ Multiple Server Configuration
  - Office-LinX Server & Sybase Mobilink Server
  - Dual Intel® Quad-Core Xeon 5600 series CPU or higher
  - 4GB RAM
  - RAID 1+0 *4X146GB SCSI/SATA/SAS HD, 10,000 RPM minimum*
  - Diskeeper installed to minimize fragmentation
  - 1GB NIC
  - Storage available 292 GB
- ◆ IMAP TSE Server (Min Quantity 2)
  - Intel® Quad-Core Xeon 5500 series CPU or higher
  - 1GB RAM
  - RAID 1 *2x40 GB SCSI/SATA/SAS HD, 10,000 RPM minimum*
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC
- ◆ Additional Applications Server (Used for IIS)
  - Intel® Quad-Core Xeon 5500 series CPU or higher
  - 2GB RAM
  - RAID 1+0 *4x40 GB SCSI/SATA/SAS HD, 10,000 RPM minimum*
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC

→ **CONFIGURATION 'F' (Port/Channel Capacity: 100)**

- ◆ Multiple Server Configuration
  - Office-LinX Server & Sybase Mobilink Server
  - Dual Intel® Quad-Core Xeon 5600 series CPU or higher
  - 4 GB RAM
  - RAID 1+0 *4X146 GB SCSI/SATA/SAS HD, 10,000 RPM minimum*
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC
  - Storage available 292 GB
- ◆ IMAP TSE Server (min Quantity 3)
  - Intel® Quad-Core Xeon 5500 series CPU or higher
  - 1GB RAM
  - RAID 1 *2x40 GB SCSI/SATA/SAS HD, 10,000 RPM minimum*
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC
- ◆ Additional Applications Server (used for IIS)
  - Intel® Quad-Core Xeon 5500 series CPU or higher
  - 2GB RAM
  - RAID 1+0 *4x40 GB SCSI/SATA/SAS HD, 10,000 RPM minimum*
  - Diskeeper installed to minimize fragmentation
  - 1 GB NIC

## Configurations

### → Email

Email traffic is broken down into the following three (3) measurable categories

Mailbox Profile	Daily Message Profile
Low	5 sent / 20 received
Medium	10 sent / 40 received
Heavy	20 sent / 80 received

### → Voice Mail

Assuming the average message length is 30 seconds the voice mail traffic is broken down into the following three (3) measurable categories:

Mailbox Profile	Daily Message Profile
Low	3 received
Medium	7 received
Heavy	15 received

- Note:** IMAP TSE performance is directly proportional to the performance of the site's email server. The higher the performance on the email server the higher the performance and speed on the Office-LinX server. Failure to maintain an adequate email server may result in slower than necessary message updates.
- Note:** System performance can be drastically affected on environments where individuals or groups of users receive messages that are considered greater than those of a heavy mailbox profile. Esna Technologies accepts no liability from any customers whose daily email usage is greater than the those outlined above.

## Supported Servers

### Current Models

#### → **CIARA ([www.ciaratech.com](http://www.ciaratech.com)) 2U 080310 Nehalem Server**

- **Esnatech Certified**
- Chassis: 2U Chassis, Redundant PSU 700 Watts
- Processor: Intel® Xeon CPU Quad E5530, 2.4 GHz
- Memory: 3GB RAM
- Storage: 4 X 146GB SAS Drive (RAID 10)
- Platform: Windows 2003 Standard SP1/Windows 2003 R2
  
- To order, contact Roberto Lavoie at 877-242-7272 Ext. 6403 or [rlavoie@ciaratech.com](mailto:rlavoie@ciaratech.com)

For 3 Year Warranty, 4 hours same day on site service, use the part number **ESNA2474**

For 3 Year Warranty, next business day on site service, use the part number **ESNA247**

For 1 Year Warranty, return to depot for service, use the part number **ESNARTD**

#### → **Dell PowerEdge T410**

- **Esnatech Certified**
- Processor: Intel® Xeon E5620 2.4Ghz, 8M Cache
- Memory: 4GB RAM, 1333MHz UDIMM
- Storage: 4 X 146GB 15K RPM SCSI (RAID 10)
- Server OS: Windows 2008
- For IP integrated systems only. Dialogic cards not supported.

#### → **Dell PowerEdge R710**

- **Validated through customer installation**
- Processor: Intel® Xeon E5520 2.4Ghz, 8M Cache
- Memory: 4GB RAM, 1333MHz UDIMM
- Storage: 4 X 146GB 15K RPM SCSI (RAID 10)
- Server OS: Windows 2003 R2 SP2
- For IP integrated systems only. Dialogic cards not supported.

#### → **Dell PowerEdge R510**

- **Validated through customer installation**
- Processor: Intel® Xeon E5520 2.4Ghz, 8M Cache
- Memory: 4GB RAM, 1333MHz UDIMM
- Storage: 4 X 146GB 15K RPM SCSI (RAID 10)
- Server OS: Windows 2003 R2 SP2
- For IP integrated systems only. Dialogic cards not supported.

→ **HP ProLiant DL380 G6**

- **Validated through customer installation**
- Processor: Intel® Xeon 5500 series processor, 8MB L3 Cache
- Memory: 4GB RAM, 1333MHz UDIMM
- Storage: 4 X 146 GB SAS 10K RPM HD (RAID 10)
- Server OS: Windows 2003 R2 SP2
- For IP integrated systems only. Dialogic cards not supported.
-

## Server Requirement Q & A

Please refer to the below Q&A article for a general understanding of the hardware requirement of the Office-LinX system.

### What is a RAID 10 system?

RAID 10, also known as RAID 1+0 or RAID 0+1, is a RAID system where 2 drives are mirrored and then spanned with 2 other mirrored drives. This gives you the ability to lose 1 of each in the set in each mirror (1/2 of the drives) and still work at full speed. This is the recommended setup for the Office-LinX system and the RAID 0+1 is the preferred choice.

### How about RAID 6 or RAID 5?

RAID 5 and 6 would be an optimal choice if the Office-LinX system were to be a read only system. Unfortunately the act of writing burdens the RAID system since every log entry requires the entire span to be updated (parity needs to be updated with every change). If a RAID 5 or RAID 6 becomes fragmented there is a problem since small pieces of info will still take the entire stripe and parity needs to be calculated for every change once again.

### What speed Hard Drives should we use?

Most typical server Hard Drives will be either 10,000 RPM or 15,000 RPM. Either one will suffice for the Office-LinX system. The 15,000 RPM drives are much hotter but are also 50% faster. The trade off is the electric consumption over performance. If it is a huge install base that has lots of UM with IP voice ports we suggest the 15,000 RPM but this is not a requirement.

### What can I do to increase the effectiveness of the RAID system?

An extra drive (one or more) may be configured as a hot swap spare. This is generally a good practice since it will automatically start rebuilding the RAID if one of the drives fail, removing the need for human interaction.

### What is the total storage of a RAID system?

Total storage would be ½ of the combined storage of all the drives.

### Is there a numerical restriction on the RAID system?

The number of drives that can be used in the RAID system must be even, with 4 being the minimum (4, 6, 8 etc).

### Can I install Office-LinX on an existing server that is already in use?

Office-LinX is a dedicated application which should only be installed as a **primary application** on any server. Sharing system resources with other applications may keep Office-LinX from working correctly.

4

Office-LinX™ Cloud Connect Edition for Cisco Unity

## 5

# Virtual Machine Support



## Chapter Summary

Virtual Machine Support.....	36
Requirements.....	36
Virtual Environment Limitations .....	36
VMware Technology Guidelines .....	36
VM Environment Feature Comparison Chart .....	37
Virtual Environment Deployment Example .....	38
CPU Usage .....	38
Datastore Latency.....	39
Disk Usage Rate .....	39
Network Usage Rate.....	40
Conclusion .....	40
Virtual Machine Environment Specification Example .....	41

## Virtual Machine Support

Many organizations are now turning to virtual environments for their server needs due to their cost and efficiency. Rather than having a room full of servers, virtual servers on hosted or in-house environments can now perform the functions of multiple computers.

Office-LinX can be installed on a virtual environment enabling you to reuse the equipment you already have. Instead of buying a new computer to host the voice server, upgrades to existing hardware may be sufficient through virtualization.

### Requirements

Software	Version
VM Software	VMware vSphere 4.x only
OS for Office-LinX	Microsoft Windows XP, 7 (32 and 64-bit), Server 2003 and 2008 (32 and 64-bit), Server 2008 R2

**Note:** vSphere has been tested up to version 4.1. Later versions, including 4.1 SU1 have not been tested.

Hardware	
CPU	Requires Intel® CPU which meets or exceeds the requirements of vSphere 4.x

### Virtual Environment Limitations

You cannot directly upgrade an existing Office-LinX server to a virtual environment. However, you can move an existing server onto a virtual machine by migrating the database using the utilities provided on the Office-LinX installation DVD. You can transfer both 7.x and 8.x systems to an 8.5 virtual environment. Office-LinX must be installed on a new virtual machine with a clean operating system.

**Warning:** Importing an existing Office-LinX environment to a virtual image is not supported.

Office-LinX installed on a virtual environment requires the same hardware resource as non-virtual machine environments. Please refer to **Server Specifications on page 79** for more information on resource requirements.

### VMware Technology Guidelines

VMware offers wide range of technologies which may be implemented on a virtual machine for greater redundancy and ease of maintenance. This section explains which features are compatible with the Office-LinX server application and how to utilize VMware solutions with Office-LinX in mind.

- ◆ **vMotion:** vMotion allows for the migration of an active Server without affecting its operational status. This means you can move a virtual machine that is currently active from one ESXi host to another without having to shut it down. For Office-LinX, this means that you will be able to move the voice server without having to turn it off first. This allows system administrators to migrate the system at any time during the day without down time. Depending on timing and available resources, you may or may not see a disruption in service during the transfer. For example, if the voice server has an active call when you start the migration, the call may be dropped or it may stay connected after a short pause depending on how quickly the migration can finalize. vMotion is a manual process.
- ◆ **High Availability:** VMware also offers its own High Availability solution, which should not be confused with Office-LinX HA. VMware's HA model is initiated in 2 ways: one is hardware (machine) failure and the other is software (Operating System) failure. When the ESXi hardware fails on a system monitored by HA, VMware will automatically restart the Virtual Machine image on another ESXi host. If the OS becomes unresponsive, VMware HA will start the virtual machine on another ESXi host and bring the server back online. This will lead to down time while VMware moves operations onto another host. Office-LinX will be down during the recovery period and will not be able to answer calls until the secondary virtual image is fully up and running. The recovery occurs automatically, but it must be 'hard coded' to a specific recovery ESXi server. If there are no available resources on the recovery server, Office-LinX may fail to restart.

- ♦ **Distributed Resource Scheduler:** Distributed Resource Scheduler is intended for sites with multiple physical ESXi servers available. DRS keeps track of hardware resources, and is able to see the current availability of CPUs, RAM, etc. on all servers. When the main server crashes, DRS will automatically allocate the necessary resources and restart the virtual machine in a suitable environment. This means that Office-LinX will be guaranteed a minimum level of resources upon recovery to ensure there is no reduction in service. This is an advantage offered by DRS when compared to HA alone since HA does not consider hardware requirements when allocating space for a new virtual machine to replace the crashed server.
- ♦ **Fault Tolerance:** Fault Tolerance offers a higher level of protection than HA by eliminating of downtime. A virtual machine being monitored by an FT system will have a shadow image created that is identical to the monitored virtual machine. When the main server becomes unavailable for any reason, the shadow image which has been reproducing all activity on the main server will become active, instantly replacing the crashed server. This reduces the chance of an interruption or data loss in most active environments. However, due to the extensive nature of FT's monitoring, FT can only support virtual machines with a single core CPU. This does not meet Office-LinX Voice Server's minimum hardware requirements, so Office-LinX will remain incompatible with FT until the algorithm is changed to support the resources required.

## VM Environment Feature Comparison Chart

	vMotion	HA	DRS	FT
Active Migration	Y	N	N	N
Recovery from Hardware Crash	N	Y	Y	Y
Recovery from Software Crash	N	Y	Y	Y
0 Down Time during Crash	N	N	N	Y
Smart Allocation of Hardware Resources	N	N	Y	N
Office-LinX Support	Y	Y	Y	N*
<b>known Behaviors:</b>				
Voice Traffic	Potential loss of ongoing calls during migration. (Tested with registered SIP extensions)	Interrupted until HA recovers	Interrupted until HA recovers	N/A*
Client Manager	Potential for disconnect during migration	Interrupted until HA recovers	Interrupted until HA recovers	N/A*
Unified Messaging	No interruption	Interrupted until HA recovers	Interrupted until HA recovers	N/A*
CTI	No interruption	Interrupted until HA recovers	Interrupted until HA recovers	N/A*

\* Due to the way in which Fault Tolerance is designed, Office-LinX cannot function within the FT model. FT is limited with regard to computer resources (e.g. single core processor) while Office-LinX has specific minimum resource requirements to function properly. Until VMware upgrades the FT system to support higher amounts of resources, Office-LinX cannot be deployed under the FT model.

# Virtual Environment Deployment Example

The following are performance results from a virtualized Office-LinX system running 100 active voice ports with 1,000 users registered under the system. Please keep in mind that this is a limited test run to showcase how a typical operation may perform under a virtual environment. This example does not guarantee an identical level of performance on every virtual environment, but rather serves as a guideline with regards to Office-LinX's behavior under virtual environments.

## CPU Usage



Office-LinX used an average of 58.945% of the CPU capacity, which equates to 5,643.95 MHz. When considering the Maximum requirement, providing at least 6.8 GHz of CPU resources to Office-LinX will guarantee a consistent level of performance.

## Datastore Latency



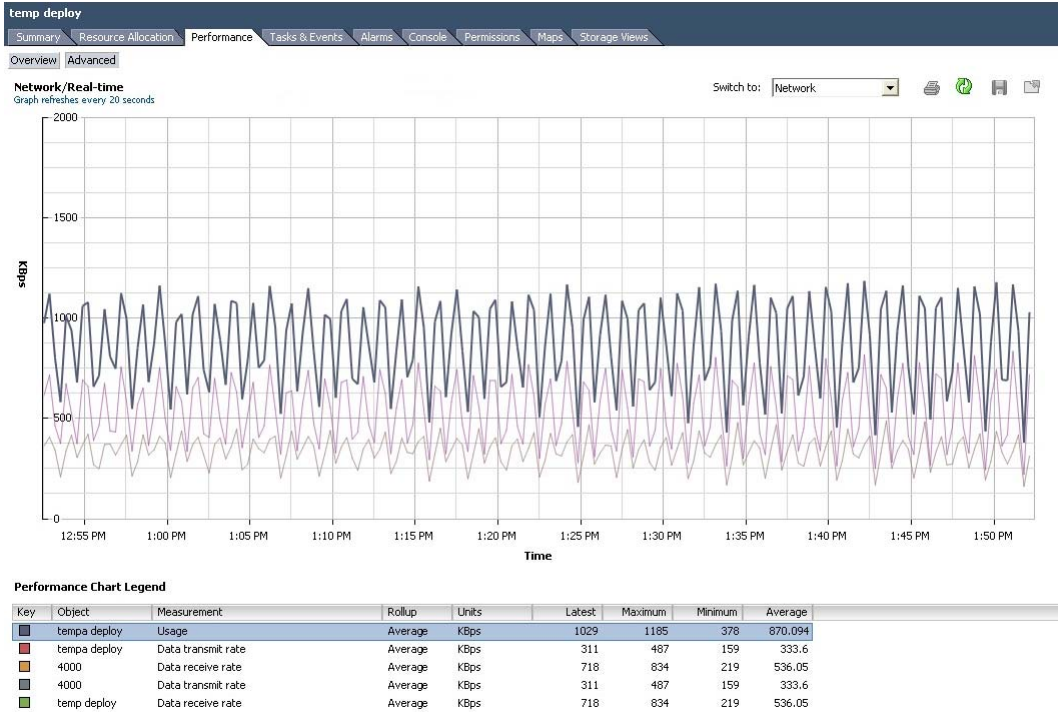
Office-LinX achieved a low average latency of 5.356ms for reading and 2.378ms for writing.

## Disk Usage Rate



Office-LinX had an average disk usage rate of 1,106.344 KBps with a peak of 1,767 KBps. Ensuring a data transfer rate of 1,800 KBps to Office-LinX will guarantee a consistent level of performance.

## Network Usage Rate



Office-LinX had an average network usage rate of 870.094 Kbps with a peak of 1,185 Kbps. Providing 1,200 Kbps of network bandwidth to Office-LinX will guarantee a consistent level of performance.

## Conclusion

Since Office-LinX is designed to be the sole application running on a given Virtual Machine, it is easy to assign the necessary resources for Office-LinX. By ensuring that Office-LinX always has access to the required resources, you will be able to guarantee the level of performance required by your site.

## Virtual Machine Environment Specification Example

The following configurations are taken from Server Configurations on page 28. Also, please keep in mind that Office-LinX is sensitive to storage read/write speed and network bandwidth speed/availability when using these configuration examples.

### → **CONFIGURATION 'A' (Port/Channel Capacity: 16)**

- ◆ Single Server Configuration
  - Office-LinX Server (*IMAPTSE on same machine if used*)
  - 2 Intel® vCPUs
  - 2 GB RAM
  - 40 GB Storage
  - Virtual NIC

### → **CONFIGURATION 'B' (Port/Channel Capacity: 24)**

- ◆ Single Server Configuration
  - Office-LinX Server (*IMAPTSE on same machine if used*)
  - 2 Intel® vCPUs
  - 2 GB RAM
  - 292 GB Storage
  - Virtual NIC
  - Diskkeeper installed to minimize fragmentation

### → **CONFIGURATION 'C' (Port/Channel Capacity: 80)**

- ◆ Single Server Configuration
  - Office-LinX Server
  - 4 Intel® vCPUs
  - 2 GB RAM
  - 292 GB Storage
  - Diskkeeper installed to minimize fragmentation
  - Virtual NIC

### → **CONFIGURATION 'D' (Port/Channel Capacity: 100)**

- ◆ Multiple Server Configuration
  - Office-LinX Server & Sybase Mobilink Server
  - 4 Intel® vCPUs
  - 4 GB RAM
  - 292 GB Storage
  - Diskkeeper installed to minimize fragmentation
  - Virtual NIC
- ◆ IMAP TSE Server
  - 4 Intel® vCPUs
  - 1 GB RAM
  - 40 GB Storage
  - Diskkeeper installed to minimize fragmentation
  - Virtual NIC

→ **CONFIGURATION 'E' (Port/Channel Capacity: 100)**

- ◆ Multiple Server Configuration
  - Office-LinX Server & Sybase Mobilink Server
  - 4 Intel® vCPUs
  - 4 GB RAM
  - 292 GB Storage
  - Diskeeper installed to minimize fragmentation
  - Virtual NIC
- ◆ IMAP TSE Server (Min Quantity 2)
  - 4 Intel® vCPUs
  - 1 GB RAM
  - 40 GB Storage
  - Diskeeper installed to minimize fragmentation
  - Virtual NIC
- ◆ Additional Applications Server (Used for IIS)
  - 4 Intel® vCPUs
  - 2 GB RAM
  - 40 GB Storage
  - Diskeeper installed to minimize fragmentation
  - Virtual NIC

→ **CONFIGURATION 'F' (Port/Channel Capacity: 100)**

- ◆ Multiple Server Configuration
  - Office-LinX Server & Sybase Mobilink Server
  - 4 Intel® vCPUs
  - 4 GB RAM
  - 292 GB Storage
  - Diskeeper installed to minimize fragmentation
  - Virtual NIC
- ◆ IMAP TSE Server (min Quantity 3)
  - 4 Intel® vCPUs
  - 1 GB RAM
  - 40 GB Storage
  - Diskeeper installed to minimize fragmentation
  - Virtual NIC
- ◆ Additional Applications Server (used for IIS)
  - 4 Intel® vCPUs
  - 2 GB RAM
  - 40 GB Storage
  - Diskeeper installed to minimize fragmentation
  - Virtual NIC

# 6

## Dealer Certification



### Chapter Summary

Dealer Certification ..... 44

Pre-Installation Preparation ..... 45

    Dealer Obligations ..... 45

    Esnatech's Commitment ..... 45

        What T2C engineers WILL do for you: ..... 45

        What T2C engineers will NOT do for you: ..... 45

Certification Process ..... 46

## Dealer Certification

Esnatech's Professional Services (ESNA) team is dedicated to providing quality training for its customers. As a result, the TOUCH 2 CUT (T2C) program has been created with the intent to provide dealers with the best possible remote training options to increase productivity, resulting in higher overall profitability for every installation. Esnatech Certification for Office-LinX Cloud Connect Edition is conducted using T2C online training.

## Pre-Installation Preparation

The dealer is required to ensure that all necessary pre-installation work has been completed before the scheduled T2C session. Failure to provide any of the basic requirements detailed herein may result in delays to the contracted work and hold-up project completion. Extra charges may be levied for any additional time required.

### Dealer Obligations

For the initial T2C training session, and the subsequent evaluation installation, the dealer is required to:

- ♦ Provide one weeks notice prior to the installation date
- ♦ Complete the initial Information Gathering Form
- ♦ Ensure that the necessary cloud based accounts (i.e. Google Apps, Gmail) have been created, and provide the login names and passwords needed for access
- ♦ Provide contact information to ESNA, including name, telephone, number and e-mail of individuals responsible for providing site access and the personnel to be trained
- ♦ Provide timely and proper access to the Work Site
- ♦ The dealer will ensure the software is on-site and ready for the contracted work
- ♦ The dealer will ensure that the site has Internet access prior to the engagement of the ESNA team
- ♦ The PBX with which Cloud Connect will be integrating will be operational and properly configured

**Note:** Once the necessary pre-installation information has been submitted and processed, the Esnatech engineer will contact the dealer to schedule an installation and training session.

### Esnatech's Commitment

#### What T2C engineers WILL do for you:


- ♦ Recommend the best practices for installation preparation
- ♦ Recommend the best practices for software deployment
- ♦ Install the Cloud Connect software on the desired server
- ♦ Configure Cloud Connect to integrate with the client's system and the cloud based applications
- ♦ Work with dealer personnel to provide a complete result and the highest level of customer satisfaction

#### What T2C engineers will NOT do for you:

- ♦ Install the operating system
- ♦ Install critical updates
- ♦ Install third party software that is not part of Cloud Connect
- ♦ Program the PBX environment
- ♦ Configure or recommend any changes to the on-site network environment
- ♦ Provide any licensing that has not been ordered as part of the final solution
- ♦ Leave any contracted work incomplete

## Certification Process

Dealer personnel become Esna certified after completing the following:

1. **Initial training**  
Through the T2C program, the dealer's first installation is conducted remotely by the assigned Esnatech Professional Services team engineer. During this installation, dealer technicians receive training from the engineer on the process, setup, and troubleshooting of the Office-LinX Cloud Connect Edition.
  2. **Graded performance**  
The second installation is performed directly by the trained technician, with the same Esnatech engineer monitoring the process remotely, providing additional advice, and correcting any errors and oversights.
  3. **Grant of certification**  
The engineer will evaluate the performance of the technician and, if satisfactory, the certification will be issued.
-  **Warning:** The second installation must be performed within 90 days of the initial training session, or the technician must repeat their training.

Certified dealer personnel will receive a PIN which provides access to Esnatech's help desk if assistance is required with future installations.