Introduction

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Cisco Unity Connection provides a set of tools for administering, monitoring, and troubleshooting the system. The tools that enable the system administrators to provision the Unity Connection server and provide feature rich services, such as integrated voice messaging and audio text application for enterprise level businesses.

Administrative Tools

Following are the administrative tools supported with Unity Connection:

- **Cisco Unity Connection Administration**: A tool used in most of the administrative tasks such as, customizing user settings and implementing a call management plan. Unity Connection Administration also provides access to several other tools including the Bulk Administration Tool (BAT), Custom Keypad Mapping, Task Management, and Migration Utilities. See Cisco Unity Connection Administration User Interface, on page 4 section.

- Cisco Unified Serviceability: A monitoring and troubleshooting tool for serviceability that is shared between Unity Connection and Cisco Unified Communications Manager. This tool allows you to generate reports, enable alarms, set trace information, activate or deactivate services that are generic to the platform.

- **Cisco Unity Connection Serviceability**: A monitoring and troubleshooting tool for serviceability that is used only by Unity Connection.This tool allows you to generate reports, enable alarms, set trace information, manage a Unity Connection cluster, and activate or deactivate services that are specific to Unity Connection. For more information, see the Administration Guide for Cisco Unity Connection Serviceability Release 15 at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/serv_administration/guide/b_15cucservag.html .

- **Cisco Unified Operating System Administration**: A tool used to change operating system settings (for example, IP address or NTP servers), view hardware and software configuration information (for example,

the amount of memory or the Cisco Unified Communications Operating System version), manage SSL certificates, upgrade Unity Connection and the operating system (they are upgraded together), and enable remote access to the Unity Connection server. For more information, see the Cisco Unified Communications Operating System Administration Guide for Cisco Unity Connection at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/os_administration/guide/b_ 15cucosagx.html.

- **Disaster Recovery System**: A tool that allows you to perform full data back up and restore capabilities when required. For more information, see the "Backing Up and Restoring Cisco Unity Connection Components" chapter of the Install, Upgrade, and Maintenance Guide for Cisco Unity Connection Release 15 at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/install_upgrade/guide/b_ 15cuciumg.html.

- **Real-Time Monitoring Tool (RTMT)**: A tool that runs as a client side application to monitor system performance, view system alarms and alerts and collect trace information for detailed debugging. For more information, see the Cisco Unified Real-Time Monitoring Tool Administration Guide Release 12.5 at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/service/12_5_1/rtmt/cucm_b_ cisco-unified-rtmt-administration-1251.html.

Using Single Sign-On

Unity Connection support Windows based single sign on feature that allows end users to log in once and gain access to the following Unity Connection web applications without signing on again:

- Cisco Personal Communications Assistant

- Web Inbox

- Cisco Unity Connection Administration

- Cisco Unity Connection Serviceability

Single Sign-On feature can be implemented using SAML SSO. This functionality allows you to implement SSO using SAML open industry standard protocol for providing single sign-on access to client applications. For more information on SAML SSO, see the Quick Start Guide for SAML SSO in Cisco Unity Connection Release 15 at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/quick_start/guide/b_ 15cucqssamlsso.html.

Configuring Browsers on a Unity Connection Administrator Workstation

To access all the administrative tools and web applications, you need to install the supported web browsers, such as Microsoft Internet Explorer or Mozilla Firefox on the administrator workstation depending on the operating system you are using. Confirm that the software required for correct browser configuration is installed. For information on supported web browsers for each operating system, see the "Software Requirements—Administrator Workstations" section of System Requirements for Cisco Unity Connection *Release 15*, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/requirements/ b_15cucsysreqs.html.

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Note Make sure to run the Trusted Sites and Add Exceptions when logging in to Cisco Unity Connection Administration or related web pages after a successful installation of Unity Connection.

Table 1-1 specifies the configuration steps that you need to perform on each browser before accessing the web applications.

Table 1: Configuring Browsers

Browser	Configuration
Mozilla Firefox	1. Enable Java. 2. Enable Java Script > Enable Change Images in Java Script Advanced. 3. Allow sites to set cookies. (For security purposes, you should set this to Allow Sites to Set Cookies for the Originating Web Site Only.)
Microsoft Internet Explorer	1. Enable Active scripting. 2. Download and run ActiveX controls. 3. Enable Java scripting. 4. Accept all cookies. 5. Automatically check for newer versions of temporary Internet files. 6. Enable Medium-High privacy.
Chrome	1. Accept all cookies and select the Allow local data to be set option. 2. Enable Java Script and select the Allow all sites to run JavaScript option. 3. Enable images and select the Show all images option.

Accessing and Exiting Cisco Unity Connection Administration

The first time when you sign in to Unity Connection Administration, use the default username and password of the administrator account specified during installation. Later, you can use the username and password for any additional administrator account that you create in Unity Connection Administration page.

To Login to Unity Connection Administration

Step 1 On an administrator workstation, open a browser session.

Step 2 Go to https://<Unity Connection server hostname>/cuadmin.

Step 3 Enter the applicable username and password. Select Login.

By default, a Unity Connection Administration session is set to time out after twenty minutes. You can change the Administration Session Timeout settings on the System Settings > Advanced > Connection Administration page.

To Exit Cisco Unity Connection Administration

Step 1 In the Cisco Unity Connection Administration title pane, select **Sign Out**.
**Step 2** Exit the web browser.

Note Unity Connection Administration supports both the IPv4 and IPv6 addresses. However, the IPv6 address works only when Unity Connection platform is configured in Dual (IPv4/IPv6) mode.

Cisco Unity Connection Administration User Interface

The Unity Connection Administration interface is divided into four areas as mentioned in the followinf table.

Navigation pane	Located along the left side of the interface, contains links to the Unity Connection Administration pages. Select the name of the page to display it.
Title Pane	Located across top of the interface, contains an About link and the Sign Out link. The title pane also offers a Navigation menu that you can use to browse to other Unity Connection applications. Select the name of the application from the Navigation list, and then select Go. Depending on the application, you may be required to sign in again.
Title Bar	Displays the name of the page and, if applicable, the name of the record displayed on the page. For example, on the Edit User Basics page for a user with the alias John, the title bar reads "Edit User Basics (John)." The right side of the title bar also shows the navigation path of the page, as it relates to other pages in the category. You can select a page in the navigation path to go that page.
Page Frame	Area in which the Unity Connection data is entered and displayed, page name appears in the title bar at the top of the page. For example, while adding new user template, the title bar reads "New User Template".

Figure 1: Cisco Unity Connection Administration Interface
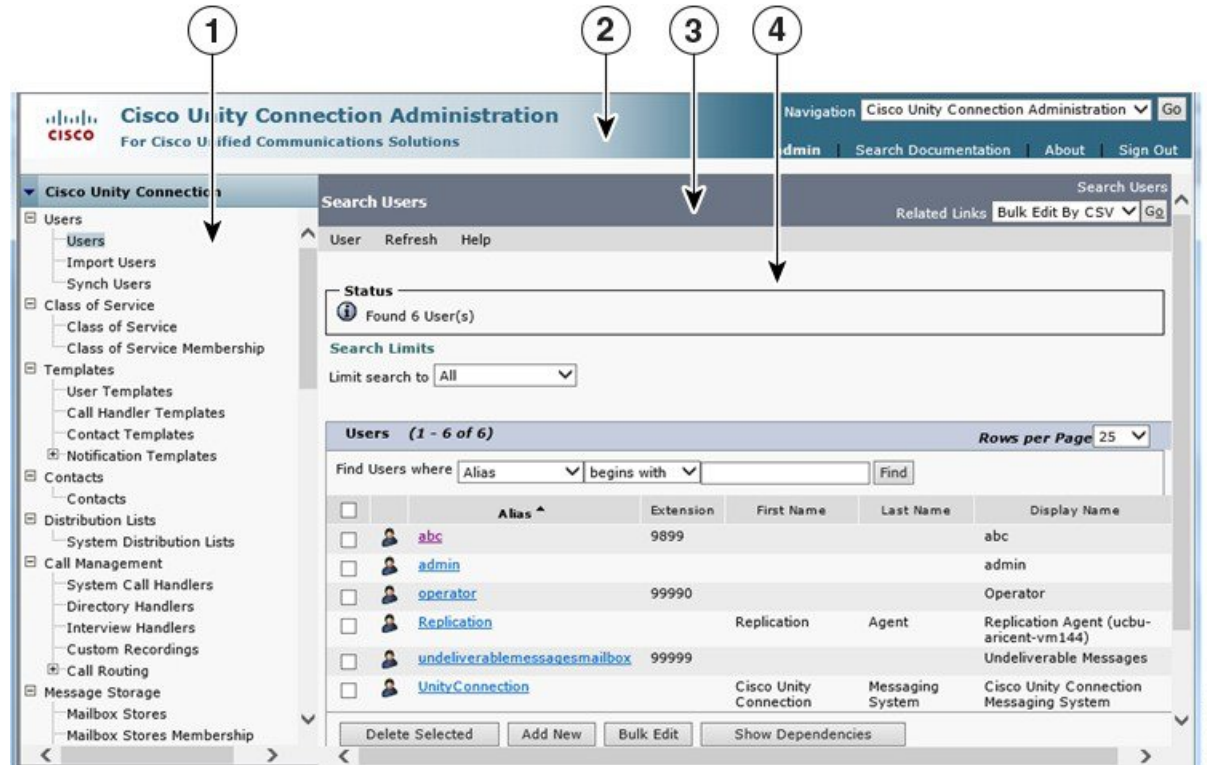
1	Navigation Pane
2	Title Pane
3	Title Bar
4	Page Frame

Note   Unity Connection provides a means to access Unity Connection Administration and other web applications using accessibility shortcut keys. For more information, see the Accessibility chapter.

Cisco Unity Connection Configuration Scenarios

Following table lists some of the scenarios that can be used by the System Administrator for configuring various tasks in Unity Connection depending on the organizational needs.

Table 2: Unity Connection Configuration Scenarios

Scenarios	Description
Configuring voice messaging for each user	The first group of information to be gathered is users requirements that includes total number of users in the company, location of the users, current voice messaging solution adopted by the users, and the expectation from Unity Connection as a unified messaging product.This enables the administrators to configure users as per the messaging needs. For more information, see the Configuring Voice Messaging for Each User, on page 6 section.
Configuring telephony in Unity Connection	A successful deployment requires you to make careful analysis of your existing telephony infrastructure and perform the correct planning steps to deploy and manage voicemail in a unified messaging environment. For more information, see the Configuring Telephony in Unity Connection, on page 8 section.
Connecting various locations in a network	Depending on the messaging needs of the organization, more than one Unity Connection servers located in different locations can be networked together. Being a highly scalable solution, the user configuration can be extended up to 10, 0000 users per server. For more information, see the Connecting Various Locations in a Network, on page 9 section.
Configuring mailbox storage and an email account for each user	Users voice messages are stored, retrieved, and synchronized from the voice mailboxes that are created during the server installation. The administrators can integrate Unity Connection to synchronize voice messages in user voice mailbox with the user exchange mailbox configured on Microsoft Business Productivity Online Suite (BPOS-Dedicated) environments or other third party hosted Exchange environments. For more information, see the Configuring Mailbox Storage and Email Account for Each User, on page 10 section.
Advanced configuration	Unity Connection provides the system administrators to configure the additional parameters for enhanced messaging experience. For more information, see the Advanced Configuration, on page 11 section.

Follow the tasks specified in the table to provide the organizations with an enriched voicemail solution.

Configuring Voice Messaging for Each User

In Unity Connection, two users, Application Administrator and Platform Administrator are created at the time of installation. Both the user accounts enable the administration of different web pages in Unity Connection.

- **Application Administrator** is a user without a mailbox that provides access to Cisco Unity Connection Administration, Cisco Unified Serviceability, and Cisco Unity Connection Serviceability web pages.

- **Platform Administrator** provides access to Command Line Interface (CLI), Cisco Unified Operating System Administration, and Disaster Recovery System (DRS).

Do the following steps to configure voice messaging in an organization:

1. Customizing the user templates for personalized user accounts.

2. Importing users through LDAP and Cisco Unified CM.

3. Synchronizing the Cisco Unified CM imported end users.

4. Defining the class of service for users with or without mailboxes.

5. Enabling HTML Notification for users

See the following sections to understand the importance of voice messaging components:

- User Templates and User Accounts: A user template is a way to apply configurations to a new user. The user template consists of the authentication rules, class of services, schedules, and a number of other configuration options and settings. If you change the template in any way, the users already created based on this template are not affected. However, new users that are created based on this template adopt all new changes that were made to the template. By default, you have two user templates, Administrator Template and Voicemail User Template. You can also create your own customized user templates.

With Unity Connection, the administrator can configure the users with mailboxes and without mailboxes. The default application administrator user that cannot send, receive, or forward voice message is an example of user without mailbox, and is created using the administrator template. While the users with mailbox that can send, receive, and forward messages to other users using phones or web clients are based on voicemail user template. Users can also send video greetings to other voicemail users. For more information on user templates and settings, see the Call Management chapter.

- Creating Users: You can either manually add users or import them from the LDAP directory or Cisco Unified CM configured AXL server on the Cisco Unity Connection Administration page.You can also use Bulk Administration Tool (BAT) to create users with and without mailbox. For more information on creating users, see the Users chapter.

- Class of Service and Membership status: Class of service (COS) is a parameter that defines the limits and permissions for using Unity Connection. COS can be configured for users with mailbox and controls the user access to various features and applications such as, message length and using IMAP capability. You can customize the way COS handles the various options by editing or creating a new COS depending on your business needs. For more information on class of service, see the Class of Service section.

You can modify class of service membership status for individual user accounts to restrict access for various features using default COS defined during installation. For more information on class of service and class of service membership, see the User Attributes chapter.

- Distribution List: A distribution list is a systematic way to group multiple users in Unity Connection that allows to send and receive voice messages to users that need the same type of information. For more information on distribution lists, see the System Distribution List chapter.

- Contacts: Contacts are the users that frequently communicate with Unity Connection users. The contacts are part of voice messaging system with voice mailbox account other than the Unity Connection server. Contacts can be configured as part of VPIM messaging and are accessible using directory access, name

dialing access and Personal Call Transfer Rules. For more information on contacts, see the Contacts chapter.

- Notification Templates: The notification feature allows alerting the user outside the context of a web page of an occurrence, such as the delivery of email or voice message. User accounts in Unity Connection can be configured for HTML notification on desired email addresses. The default notification templates or the ones customized by administrators provides an easy access to subscriber messages by enabling the HTML notification device. For example, the administrators can configure the HTML templates to include header, footer, logos, images, MWI status, and hyperlink to the Mini Web Inbox. For more information on notification templates, see the Notifications chapter.

Configuring Telephony in Unity Connection

Unity Connection integrations are built using a phone system configuration that includes one or more port groups. Each port group contain one or more ports that you can use to support connectivity between the phone system and Unity Connection.

You can follow the below procedure to configure telephony integration in your organization.

- Identifying the call agent for integrating Unity Connection.

- Determining the integration type (SCCP/SIP/PIMG/TIMG/Secure SIP).

- Configuring the phone system and adding ports as per the supported OVA and hardware requirements.

- Defining the search space and partitions.

- Mapping the routing rules with the call handlers as per your requirements.

- Telephony Integration: It allows you to manage and integrate phone system in Unity Connection with a call agent for call processing functions, such as sending and receiving telephone calls. For more information on telephony integration, see the Telephony Integration chapter.

- Phone System: A phone system in Unity Connection describes a single integration with a PBX or Cisco Unified CM system for call processing redundancy. The phone system contains global configurations that apply to the integrations, such as SIP and SCCP affecting all the port groups. For more information on phone system, see the Telephony Integration chapter.

- Ports: Ports are endpoints in Unity Connection that answer calls (inbound) to record, retrieve messages, and handle call transfers.They can also initiate calls (outbound), as in the case of MWI and message notification. For example, if users use the clients (Cisco ViewMail for Microsoft Outlook) to retrieve voicemails, ports are not used for this operation, as long as they download the messages and listen using the workstation speakers. However, if users select IP phones to send or retrieve messages, a port is used. This operation requires a port to be configured for telephony record and playback (TRAP). Ports are associated to only one port group. For more information on ports, see the Telephony Integration chapter.

- Port Groups: Port groups include one or more ports. Port groups contain most of the configuration settings for the integration, including the Message Waiting Indicator (MWI), IP address or hostname of the phone system, port numbers, advertised codecs, and other settings that apply to the ports within the port group. Multiple port groups can be configured depending on the type of integration method used for communication, such as SCCP or PIMG/TIMG. The multiple port groups are added under one phone system. For more information on port groups, see theTelephony Integration chapter.

- Dial Plan: The dial plan in Unity Connection provides flexibility and access to resources, users, and features through the use of partitions and calling search spaces. Partitions enable an organization to

segment resources in Unity Connection for the purpose of dialing, transfers, messaging, addressing, or multi-tenant functionality. The dial plan is an addressing method defined by the network administrator. Partitions are logical groupings of devices with similar reachability and a Search Space is an ordered list of partitions. Extensions must be unique within a partition, but not necessary in case of search spaces. For more information on dial plan, see the Call Management chapter.

- Call Routing: Call routing provides a method to route calls from a call agent to Unity Connection. Routing rules influence the call routing as an incoming call is presented to Unity Connection on a voicemail port. The direct routing rule and forwarded routing rules are the two routing rules that can be applied on the calls placed directly to a voicemail number or the calls forwarded when a user is busy. User experience varies depending on the type of caller (internal or outside caller). For more information on call routing, see the Call Management chapter.

- Call Management Handlers: Unity Connection offers various handlers as part of call management plan that includes System Call Handlers, Directory Handlers, and Interview Handlers.

- A System Call Handler can serve multiple functions in Unity Connection, such as answering calls and playing a recorded announcement to other users or other call handlers. The call handlers are based on pre-defined call handler templates and the functions vary depending on the current call routing rule. The Directory Handlers provide an easy access method to reach the subscribers with recorded names. Interview Handlers offers a way to gather information from callers by playing a series of questions and recording the answers. You can customize the handlers over the phone to offer better user experience. For more information on call management handlers, see the Call Management chapter.

Connecting Various Locations in a Network

Networking in Unity Connection clusters enables the system administrators to inter-network with other voice messaging systems to achieve inter-interoperability and high scalability. Depending on the messaging needs of the organization, multiple Unity Connection directories (Unity Connection servers or clusters) can be combined to form a site (and to interlink multiple Unity Connection sites to form a voicemail organization.

Unity Connection allows you to meet your expanding business needs by providing various networking options:

- VPIM: Unity Connection as a unified messaging system provides VPIM gateways with on ramps (gateways that connects from another voicemail networking protocol to VPIM) and off ramp (gateways that connect from VPIM to another voicemail networking protocol) to allow integration of similar and dissimilar messaging systems, such as Avaya Solutions and Unity Connection.

Voice Profile for Internet Mail (VPIM) protocol is an industry standard that allows different voice messaging systems to exchange voice and text messages over the Internet or any TCP/IP network. It is based on the Simple Mail Transfer Protocol (SMTP) and the Multi-Purpose Internet Mail Extension (MIME) protocol. For more information on VPIM, see the Networking chapter.

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Note   Unity Connection supports up to 10 VPIM locations and 100,000 VPIM contacts in the Unity Connection directory.

- Legacy Networking: Unity Connection supports intrasite and intersite networking between various Unity Connection clusters.

  - Intrasite Networking: If your organization has users that are more than what a single Unity Connection server or cluster pair can support, you can join two or more Unity Connection servers or clusters

(up to a maximum of ten) to form a well-connected network, referred to as a Unity Connection site. The servers that are joined to the site are referred to as Locations. (When a Unity Connection cluster is configured, the cluster counts as one location in the site.) Each location is said to be linked to every other location in the site via an intrasite link. The Unity Connection site concept was known as a digital network in Unity Connection 7.x. You can join Unity Connection 7.x locations, 8.x locations, 9.x locations, 10.x locations, 11.x, and 12.x locations in the same Unity Connection site, as long as you do not link the site to any other site. Users, system distribution lists, partitions, search spaces, and Unity Connection locations are replicated between sites.

- Intersite Networking: An intersite link can be used to connect either one Unity Connection site to another Unity Connection site or to inter-network Unity Connection with the Unity servers. Intersite link can be configured for 20 locations. For more information on legacy networking, see the Networking chapter.

Note To support inter-networking between Cisco Unity and Unity Connection sites, all servers in the site must be running Unity Connection version 10.x or later.

- HTTPS: With Unity Connection 10.0(1), a new concept of networking, HTTPS networking, has been introduced to connect different Unity Connection servers and clusters in a network. You should deploy a new network as an HTTPS network. You can connect maximum 25 Unity Connection locations in an HTTPS network. Within a network, each location uses HTTP or HTTPS to exchange directory information and SMTP to exchange voice messages with each other. For more information on HTTPS, see the Networking chapter.

- SRSV: Cisco Unity Connection Survivable Remote Site Voicemail (Unity Connection SRSV) is a backup voicemail solution that works in conjunction with Cisco Unified Survivable Remote Site Telephony (SRST) for providing voicemail service to central and all remote locations during WAN outages. For more information on SRSV, see Complete Reference Guide for Cisco Unity Connection Survivable Remote Site Voicemail (SRSV) for Release 15, available at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/srsv/guide/b_15cucsrsvx.html.

Note SRSV deployment is supported with Unity Connection 9.1.2 and later.

Configuring Mailbox Storage and Email Account for Each User

Unity Connection has an installed mailbox store. Unity Connection handles user properties, such as user mailbox accounts and voice messages by creating a directory configuration database. You need to configure your mailbox store as per your messaging needs.

- Mailbox Store: Mailbox store is a repository that is used to store messages and Unity Connection directory information. A single mailbox store is created at the time of installation and is named as UnityMbxDb1. You can add additional message storage for better performance.For more information on message storage, see the Message Storage chapter.

- Mailbox Quotas: Mailbox Quotas allows you to define the size limits of user voice mailboxes in Unity Connection. Unity Connection is configured with system-wide mailbox size quotas that can be

customized to set restrictions on the send or receive of user voice messages. For more information on mailbox quotas, see the Message Storage chapter.

- Message Aging Policy: When a mailbox store is created, maximum amount of disk space is created for the user voice messages. To maintain the allocated disk space within the specified mailbox quota, Unity Connection provides message aging policies. The rules apply on users mailbox and ensure that disk space for where voice messages are stored do not fill up. The state of the messages is changed when the aging policy is active. For example, new message moves to saved state and saved to deleted in the specified period of time. For more information on message aging policy, see the Message Storage chapter.

- Unified Messaging Service: Unity Connection supports Unified Messaging Service (UMS) that integrates voice messaging with your email account, allowing you to store voice messages in your mailbox along with your email. With UMS, you can access your voice messages using an email client or a Telephone User Interface (TUI).

To enable communication between Unity Connection and Exchange, unified messaging service can be configured depending on the Exchange type, Exchange 2010, Exchange 2013 or Exchange 20016, Office365. UMS provides features that enables you to hear your exchange emails using TTS (text-to-speech) functionality in Unity Connection, enables access to exchange calendars and contacts, synchronize voice messages in Unity Connection and Exchange mailboxes for single inbox.

- Single inbox: Single inbox is one of the unified messaging features in Unity Connection that synchronizes voice messages in Unity Connection and Exchange mailboxes.When a user is enabled for single inbox, all Unity Connection voice messages that are sent to the user, including the messages sent from Cisco Unity Connection ViewMail for Microsoft Outlook (VMO), are first stored in Unity Connection and are immediately replicated to the user mailbox in Exchange.ViewMail for Outlook is an add-in that allows voice messages to be heard and composed from within Microsoft Outlook 2010, or 2016.

Advanced Configuration

Unity Connection provides many tools and options that can be enabled for enhanced user experience and system performance.Deploying and configuring a voice messaging system in your organization can also be further customized with some of the additional settings as described in the below section:

- Tools: Various tools and utilities can be used for administering Unity Connection such as, Task Management and SMTP Address Search.

Some of the Unity Connection tools are:

- Bulk Administration Tool (BAT) tool allows you to add, delete, edit object properties, such as users and distribution lists by exporting and importing the default templates.

- Custom Keypad Mapping allows you to customize phone menu key press for users. User can change the DTMF keys for Cisco IP phones for sending and receiving voice messages through Telephone User Interface (TUI).

- Task Management lists the Unity Connection services that run on a scheduled basis and can be used for various troubleshooting and system maintenance tasks.

- Real-Time Monitoring Tool is an application plugin used as extension of Unity Connection for monitoring the system performance and port usage.

For more information on tools in Unity Connection, see the Tools chapter.

- System Settings: Unity Connection allows the System Administrator to specify the system wide parameters for various object properties including cluster settings at the time of subscriber server installation, authentication rules to define the web password and voicemail PIN for user voice mailbox, licenses to view the license state of Unity Connection registered with Cisco Smart Software Manager (CSSM) or Cisco Smart Software Manager satellite, changing roles, setting the restriction table for phone extensions with larger digits, smart host settings, and many others. For more information on system settings, see the System Settings chapter.

- Advanced Settings: It provides enabling and disabling check boxes for various functionalities including conversations for call transfer settings, messaging for user mailboxes, disk capacity to determine disk size, cluster configuration for change in cluster status, unified messaging service settings related to calendaring in UMS and more. For more information on advanced settings, see the Advanced System Settings chapter.