

Cisco Unity Connection

VOICEMAIL TO EMAIL OPTIONS

Five Major Design Choices

1. Microsoft Exchange Integration
2. SMTP Forwarding
3. IMAP Integration
4. 3rd Party Cloud Integration
5. HTML Notifications

Microsoft Exchange Integration

This is a fully supported integration between Cisco Unity Connection (voicemail system) and Microsoft Exchange (commercial email system).

Allows for full synchronization between voicemail system and email system. Message status (read, unread, deleted, etc.) is fully synchronized between both platforms.

Requires voicemail to be stored on BOTH Exchange and Unity Connection. Requires user to manage voice mailbox size to meet quota limitations.

More complex design and features system interdependencies between Unity Connection and Exchange.

Exchange Integration Pro's & Con's

PRO'S

Allows full synchronization of messages and status of messages between voicemail and email systems.

Very easy for users to manage both email and voicemail with a single email system.

Provides easy remote access of voicemail. If Exchange is publically available, so are voicemail messages.

Does not require public exposure of the voicemail system, and thus is easier on security requirements.

CON'S

Requires user to manage mailbox usage. A full mailbox is harder to manage because voicemail storage limitations/quotas are also tied to available voicemail storage.

If an email is marked as read, but the actual message not listened to, it's easily "forgotten" later because the user's message waiting light is turned off.

Requires intercompatibility. Exchange version support is tied to Unity Connection support and vice versa. Upgrade decisions must run in tandem. Results in higher than expected costs to upgrade both systems.

Significantly increases email storage requirements for the storage of voicemail audio. (~1MB per minute)

More expensive up front and more difficult to maintain.

SMTP Forwarding

This permits Unity Connection to forward any voicemails received into any mailbox. User will see a WAV file attachment, which can be played with any media player and is highly device agnostic. SMTP forwarding is available today, without further investment.

Messages are stored separately in mailbox and Unity Connection. Messages can exist in either system or both systems, however, message status (read/unread) is not synchronized between voicemail and email systems.

Message aging policies can eliminate need to manage actual voicemail box and eliminate user interaction. For example, voicemail messages can be marked as read or deleted automatically after specified intervals. Emailed messages are still retained within the email system upon deletion from voicemail.

Email and voicemail system utilization are disconnected in this model. Email messages can be kept indefinitely without requiring storage on voicemail system. In cloud email models like Google mail, this can mean perpetual voicemail storage.

Very easy and fast to configure. Requires an SMTP forwarder that is accessible by Unity Connection and an email address to be populated within the configuration.

SMTP Forwarding Pro's & Con's

PRO'S

Available today without additional purchases.

Users can archive email copies of voicemail messages “forever” with no impact to voicemail box utilization or quota requirements.

Easier for users to maintain because they can delete messages from voicemail and still retain email based copies.

Can forward to non-UA addresses if needed.

Message aging policies can eliminate user interaction with voicemail box and retain easier storage quota adherence.

Very easy to configure for users and features minimal requirements.

CON'S

No message synchronization between voicemail and email systems.

Requires the user to maintain both voicemail box and email message copies unless message aging policies are implemented.

Message aging policies are static and not adjustable “on the fly” for specific messages.

Requires slightly more user time to manage voicemail box.

More difficult to troubleshoot when delivery problems arise due to no synchronization and multi-system dependencies.

IMAP Integration

Unity Connection functions as an email server and permits email client applications (e.g. Microsoft Outlook) to access voicemail messages via a local voicemail account. Most client applications present the voicemail box as a separate “inbox” within the client application.

IMAP integration is available as a default option in Unity Connection, therefore is available today without further investment.

Voicemail messages are only stored on Unity Connection and on client machine when configured for local caching. Voicemail message status is fully synchronized between email and voicemail systems.

Unable to interact with most cloud based email solutions and is also incompatible with users that choose not to use an email client application. Any theoretical cloud integration would require IMAP client-like interaction and also public access to the internal voicemail system to be established via standard IMAP ports.

Very easy and fast to set up. Requires user to manage mailbox utilization.

IMAP Integration Pro's and Con's

PRO'S

User will see full synchronization between voicemail messages and email client.

User can archive messages to a different email folder, allowing perpetual saving of messages without impacting user mailbox usage.

Provides a native and familiar interface for users that utilize an email client currently.

Works with most email clients out there that support IMAP client connectivity.

CON'S

Requires users to have mail client for compatibility. No easy cloud based integration with most current cloud email providers.

More difficult to retain as a “universal” solution in a cloud based email environment. Not all users may want to use an email client in cloud email models.

Requires user to manage voicemail box utilization due to messages being stored on voicemail system. More complex for users to understand that archiving messages requires them to move it to a different folder.

If Unity Connection is not directory integrated, account integration is an “island” where password changes will not be synchronized.

Requires public IMAP access if access is expected outside of the network. VPN or LAN requirements can also be established.

3rd Party Cloud Integration

Non Cisco supported solution that allows a 3rd party client to provide synchronization services between cloud email solutions and Unity Connection. Most similar to Exchange integration.

Provides full message synchronization between voicemail and email platforms, which is handled entirely by the third party software.

Requires voicemail to be stored on BOTH email system and Unity Connection. User must maintain mailbox utilization due to voicemail quotas.

The currently recommended 3rd party solution requires perpetual payments or feature will cease to function. No ROI opportunity and cost to operate the feature is continual.

Support will be provided by 3rd party company.

When considering 3rd party integrations, the relationship to Cisco is vital. Certified partners will ensure integrity and operational success with the integration.

3rd Party Integration Pro's and Con's

PRO'S

Fully synchronized voicemail messages between cloud email provider and Unity Connection. Synchronization is provided through separate integration tool.

Mimics Exchange based voicemail to email functionality with UA's current mail provider.

Easy for users to manage voicemail through either voicemail or email boxes.

CON'S

More expensive to implement. Requires perpetual payments or feature will cease to function with current solutions.

API updates by email provider can instantly break functionality. Will likely require updates to system to retain functionality in this case.

No native Cisco level support. Problems may be more difficult to pinpoint and finger pointing is probable.

Still requires user to manage mailbox utilization to prevent full mailbox due to message quotas enforced by Unity Connection.

High operational costs.

HTML Notifications

HTML notification is an HTML enabled email notification that can be configured per user. This relies on an external SMTP relay which is accessible via Unity Connection. HTML notifications are available now, without further investment.

Users receive an email with links to play, forward, reply or delete the email message. Optionally, a WAV file of the message can be attached to the notification. The system also supports customization of the HTML template used for branding or extension as desired. Image attachments are also supported if desired.

Allows single click access to a mini-web inbox and playback of messages, providing a native web based access experience for cloud email users. Message status will be synchronized to the phone device when messages are listened to via web inbox. When optionally attaching WAV file, similar to SMTP forwarding, listening to message attachment will not synchronize to mailbox.

Good integration option for cloud mail users. Versions 10.5 and newer permit email attachment of the message to the notification, meaning it is no longer necessary to send two emails per message for notification and voicemail to email purposes. Can also provide “missed call” notification if a caller entered the user’s voicemail box, but did not leave an actual message.

For the best experience, public access to the voicemail system is desirable in order to permit access to messaging from anywhere a user is located. Otherwise, LAN or VPN access limitations may be applied or voicemail WAV attachment used for external listening.

HTML Notification Pro's and Con's

PRO'S

Provides for a native web-based access to voicemail and single click access to voicemail via email.

Allows combination of both SMTP forwarding and web-inbox functionality, providing users choices of how they want to interface with messaging. Message attachment can be disabled, if desired.

Familiar “one click” messaging experience, allowing both mailbox synchronization and indefinite email based message retention when desired.

Can permit branding and alteration of the user experience based on technical needs or user expectations.

Allows more comprehensive mailbox control than any other solution.

CON'S

Can be confusing to users in that they still need to manage their mailbox, but emailed attachments can be retained independently. Also, listening via attachments will not synchronize across both email and voicemail, but listening via the linked web inbox will.

For best results, Unity Connections must be accessible from the public internet which enhances security requirements. Alternatively, requirements for VPN or LAN access could be established.

More difficult to set up, but still not extremely complex in most environments.

Requires directory synchronization so user accounts can be the same as other UA accounts. Separate mailboxes not directory synchronized will present user access and support issues as they will have different credentials.

Web Portal Integration

Unity Connection features a web portal that users can access and manage their voicemail boxes. The web portal is available today, without further investment.

This portal works with ALL of the aforementioned email based integrations, but HTML notifications provides for the best general user experience as it is fully integrated. Portal also allows adjustment to user's notification profiles, allowing the user to control what they receive.

Users can manage all aspects of the mailbox through the portal including drafting new voicemail messages. The portal also provides robust voicemail box management including updating notification preferences, greeting recording & management and many other features.

If public access is desirable for off-site use, it is strongly advised to secure all accounts with secure passwords. All administrator level accounts should have robust passwords and enhanced security rules applied. It is generally advised to enforce secure password policies in public environments including complexity requirements, aging policies and more aggressive failed sign on limitations/lockouts.

When Unity Connection is directory synchronized via LDAP, web portal is single sign on compliant for users including enhanced SAML based SSO's. If the system is not directory synchronized via LDAP, the user's credentials can not be synchronized and therefore will be controlled separately.

Custom Development

Cisco Unity Connection features an API called CUMI or Cisco Unity Connection Messaging Interface.

CUMI is a REST based, XML interface that permits custom control over messages, Comet based notifications and other manipulation of the Cisco Unity Connection environment. Custom integration and interface options could be developed via the platform.

Cisco will only provide limited support of the CUMI interface, similar to how they differentiate support for UCCX scripting and EEM/TCL in the IOS world. This boils down to “feature works/doesn’t work as expected” and provides no support for application level issues.

The CUMI interfaces opens options to custom functionality, but development and maintenance would be entirely up to the organization. Compatibility between software version changes will be dependent on the application and may require future updates to maintain compatibility.

Recommendation

The most feature robust and integrated solution will be found with HTML notifications.

HTML notifications allow higher degrees of flexibility and will be universally available to email users that choose to leverage mail client applications such as Microsoft Outlook or the native Google Mail client.

HTML notification provides single click listening to voicemail from email and full synchronization back to the device and mailbox when the web inbox is utilized. Web interface provides users with direct control over their mailbox and greater features than found in other solutions.

Messages can optionally be attached to user's notification, allowing permanent archival of the messages and independent storage outside of the voicemail system. This can also eliminate the need to establish public entry into the voicemail system.

Requires no further investment other than technical implementation time. This is a native feature provided within Unity Connection. Depending on current LDAP integration of Unity Connection, development of the feature may be more or less difficult.