

Cisco Unity Express—Messaging, Voicemail, Fax, Automated Attendant, and Interactive Voice Response

Cisco® Unified Communications is a comprehensive IP communications system of voice, video, data, and mobility products and applications. It enables more effective, more secure, more personal communications that directly affect both sales and profitability. It brings people together by enabling a new way of communicating—where your business moves with you, security is everywhere, and information is always available...whenever and wherever it is needed. Cisco Unified Communications is part of an integrated solution that includes network infrastructure, security, mobility, network management products, lifecycle services, flexible deployment and outsourced management options, end-user and partner financing packages, and third-party communications applications.

Organizations of all sizes share an ongoing goal of increasing employee productivity and reducing costs through technology. Businesses can cost-effectively meet their office communications needs by using Cisco Integrated Service Router platforms to deliver data, voice, security, wireless LAN, switching, and video services on a single converged network, customized to meet the needs of the business today and in the future.

One of the primary modules available on Cisco Integrated Services Router platforms is Cisco Unity® Express, which natively offers industry-leading integrated messaging, voicemail, fax, automated attendant, optional interactive voice response (IVR), and a rich set of other messaging features that help businesses improve communications with their customers and business partners.

Cisco Unity Express provides these integrated services specifically designed for the small and medium-sized office environment. With Cisco Unity Express, users can easily and conveniently manage their voice messages and greetings with intuitive telephone prompts, an easy-to-use visual voicemail interface (VoiceView Express), and a straightforward GUI that allows simple administration and management.

Cisco Unity Express is an essential component of either a Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager) or Cisco Unified Communications Manager Express solution (formerly known as Cisco Unified CallManager Express).. In a Cisco Unified Communications Manager environment, Cisco Unity Express provides local storage and processing of integrated messaging, voicemail, fax, automated attendant, and optional IVR for branch offices with limited WAN connectivity, thereby alleviating concerns about WAN bandwidth and quality of service (QoS). Additionally, Cisco Unified Communications Manager customers with Cisco Unity messaging solutions at their larger locations can use Cisco Unity Express at their branch- or small-office locations and network the solutions so that employees can easily send messages between locations. In a Cisco Unified Communications Manager Express environment, customers deploy a single compact-form-factor Cisco Integrated Services Router platform with Cisco Unity Express installed to meet their office telephony and messaging needs, as well as their other business communications needs.

Productivity and Competitive Edge

Cisco Unity Express elevates the level of professionalism, productivity, and customer service available to the small and medium-sized office customer through its new IVR and existing built-in automated attendant, advanced voicemail, integrated messaging, and fax handling capabilities. The new optional IVR provides local integration to a broad set of databases, an intuitive scripting environment, and extensive reporting capabilities, giving the small or medium-sized business (SMB) or enterprise branch office a comprehensive self-service solution. The professional automated attendant allows all calls to be handled efficiently and reliably. Calls can be directed by the extension or by dial-by-name when the specific extension is not known. Having an automated attendant means that calls are answered 24 hours a day, 7 days a week, without the need of a dedicated operator. Voicemail extends the productivity of the organization by allowing employees to access messages at any time from any telephone. Both internal and external calls to a busy or unattended phone are forwarded to the user's voicemail box and are greeted with a personalized greeting. Employees are immediately alerted to calls by the message-waiting indicator (MWI) on their Cisco Unified IP Phones or analog phones connected to a Cisco VG224 Voice Gateway.

New IP-based productivity-enhancing applications such as integrated messaging allow employees to effectively manage their voicemail messages and provide a common view of all their e-mail and voicemail messages through a single interface accessible remotely over the network using a desktop or laptop PC. Additionally, new applications such as VoiceView Express offer a faster and convenient alternative to the telephony user interface for the day-to-day management of voicemail messages. With VoiceView Express, users can use the display on their Cisco Unified IP Phones to visually navigate through their voice messages and manipulate their mailbox options much more intuitively.

With services such as integrated messaging voicemail, fax, automated attendant, and optional IVR, employees can quickly and easily benefit from productivity-enhancing tools, all incorporated into the Cisco Integrated Services Router and delivered by Cisco Unity Express.

Ease of Operation

Cisco Unity Express provides methods to provision and manage voice mailboxes from a centralized location. The capability to dramatically simplify network management, particularly in small and medium-sized offices, which typically have less onsite technical expertise, is another important benefit of Cisco Unity Express. The flexibility to easily add new voice services as they become available makes the solution even more advantageous.

Cisco Unity Express also offers the option of using the industry-standard Cisco IOS® Software command-line interface (CLI) or a Web-based GUI for configuration and administration. In many instances, information about the phones, extensions, call reports, and system parameters necessary for Cisco Unity Express operation are derived directly from Cisco Unified Communications Manager or Cisco Unified Communications Manager Express, eliminating the need for replication of data entry, which maximizes efficiency and minimizes errors. Cisco Unity Express supports Simple Network Management Protocol (SNMP) and allows industry-standard SNMP-based network management applications to proactively monitor, manage, and gather performance data and receive traps at a central site. Whether managing through a GUI interface or CLI, the ability to deploy, administer, and maintain devices centrally eases remote maintenance and troubleshooting.

Table 1 Summarizes the main hardware features of Cisco Unity Express.

Table 1. Hardware Features

| Feature | Customer Benefit |
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| Delivered on a network module (Cisco Unity Express NM-CUE, NM-CUE-EC, or NME-CUE) or advanced integration module (Cisco Unity Express AIM-CUE), which directly integrates into the Cisco 2800 and 3800 Series Integrated Services Routers | Network modules and advanced integration modules are shared across a broad range of router platforms, so Cisco Unity Express can be deployed in a variety of office sizes, from the very small 12-user office up to those that need 250 mailboxes and 32 ports of concurrent voicemail and integrated messaging, automated-attendant sessions, or optional IVR services. |
| Network module (Cisco Unity Express NM-CUE, NM-CUE-EC, or NME-CUE) includes a dedicated onboard microprocessor and integrated storage | The Cisco Unity Express network module is fully self-contained, with dedicated onboard processing, memory, and storage, allowing efficient message management, a range of concurrent sessions including optional IVR, simultaneous processing, and ample voicemail storage capacity for a wide range of typical office profiles. Release 3.0 adds support for the newer network module with optional IVR (part number NME-CUE) hardware, allowing up to 32 ports for use by integrated messaging, voicemail, and automated-attendant functions or optional IVR sessions. The Cisco Unity Express network module with enhanced capacity (part number NM-CUE-EC) supports up to 16 ports of concurrent voicemail, integrated messaging, and automated-attendant or IVR sessions and up to 250 voice mailboxes. The standard Cisco Unity Express network module (part number NM-CUE) supports up to 8 sessions of voicemail and automated attendant or optional IVR and up to 100 voice mailboxes. |
| Advanced integration module (Cisco Unity Express AIM-CUE) has a dedicated onboard microprocessor | Like the network module, the Cisco Unity Express advanced integration module (part number AIM-CUE) is fully self-contained, with dedicated onboard processing, memory, and storage. Because the advanced integration module is internally installed on the router, it frees external interface slots for other services such as analog and digital voice, virtual private network (VPN) acceleration, or integrated switching. The advanced integration module supports up to 50 voice mailboxes and up to six sessions of voicemail, automated attendant, or optional IVR. |

Key Features and Benefits

Table 2 lists features newly introduced with Cisco Unity Express Releases 2.0, 2.1, 2.2, 2.3, and 3.0. Table 3 lists voicemail and integrated messaging features, Table 4 lists auto-attendant features, and Table 5 lists newly introduced optional IVR features.

Table 2. System Features

| Feature | Customer Benefit |
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| Capability to operate in Cisco Unified Communications Manager or Cisco Unified Communications Manager Express IP telephony environment | Cisco Unity Express can be used within either a Cisco centralized (Cisco Unified Communications Manager) or distributed (Cisco Unified Communications Manager Express) call-control environment. This approach provides design flexibility and investment protection if you migrate from one Cisco call-control methodology to the other. |
| Accessible CLI | Cisco Unity Express provides familiar management features such as configuration, provisioning, and support through a CLI that is similar to the Cisco IOS Software CLI, accelerating the learning curve for network administrators and channel partners familiar with Cisco IOS Software. |
| CLI scripting capabilities | Cisco Unity Express provides an advanced method for efficient remote management, provisioning, and configuration of many units. This unique feature, typically not provided with entry-level voicemail systems, allows deployment of many similarly configured sites quickly. |
| Embedded Operating System | Cisco Unity Express employs an industry-standard OS ideally suited for embedded applications. It enables a disk subsystem not provided by native Cisco IOS Software. This approach translates into efficient operation while providing a robust, secure, and protected operating environment behind Cisco IOS Software. |

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| Inherent Security | <p>Cisco Unity Express is an embedded system, accessible only through the provided GUI and CLI. User passwords are inaccessible and are encrypted on the system using the 128-bit Secure Hash Algorithm (SHA). All packages within the Cisco Unity Express architecture are signed by Cisco to help ensure their integrity. Even then, if somehow untrusted code is installed on the system, a built-in chain-of-trust model will prevent the unauthorized code from operating.</p> <p>With Release 3.0, Secure HTTP or HTTP over Secure Sockets Layer (SSL) access to the GUI is added for secure connectivity to the system. Additional Release 3.0 security features include configurable system behavior when end users erroneously log in to telephone user interface (TUI) handling. This approach gives businesses the flexibility to apply their specific security policies.</p> |
| 4 to 32 simultaneous calls to voicemail or autoattendant (dependent upon license level and hardware) | Support for 4 to 32 concurrent sessions or ports for voicemail, integrated messaging, automated-attendant, or optional IVR services provides the right level of service for business needs and budgetary constraints. The number of ports available depends on the Cisco Unity Express module type and other services such as concurrent IVR sessions. |
| Languages | Cisco Unity Express supports an extensive set of languages and dialects across all supported applications that use system prompts, including voicemail, automated attendant, and optional IVR. Dutch and Swedish are added in Cisco Unity Express Release 3.0 (Table 9 provides a detailed list of supported languages). Release 3.0 also adds concurrent language support, allowing the administrator to install up to two concurrent languages on Cisco Unity Express advanced integration module and up to five languages on Cisco Unity Express network modules. |
| Secure backup and restore (Release 3.0) | A secure FTP function has been added to authenticate an FTP server before backup. In addition, the payload of the IP transmission is encrypted between Cisco Unity Express and the FTP server to help ensure confidentiality. |
| Incremental upgrades and background downloads | Upgrading is simplified to enhance Cisco Unity Express operating efficiency. With incremental upgrades, in many cases just the relevant updates are added to the system, and a full image upgrade is not required.* New software packages can be downloaded in a background process during normal system operation and do not interrupt users' services.** |
| Simple Network Management Protocol (SNMP) | The SNMP interface allows Cisco Unity Express to be monitored and maintained remotely by Cisco network management tools or other third-party management applications. The SNMP agent on Cisco Unity Express provides management and monitoring of the system through SNMP GET operations and can send SNMPv2c notifications for various events. |
| System administrator dashboard (Release 3.0) | A dashboard has been added for an administrator to view mailbox assignment, status, and use information for each user on the system, providing additional efficiency and management of the resources across the system. |
| Real-time and historical reporting (Release 3.0) | Release 3.0 introduces an extensive set of real-time and historical reports for Cisco Unity Express, giving users powerful information for network resource planning and assessment purposes. The reports cover Cisco Unity Express applications such as voicemail, automated attendant, fax, and optional IVR and overall system status such as active calls, incoming calls over time, and rejected calls, with user-defined thresholds for each. Historical reports also cover call and application activities. Reports can be sorted and filtered, viewed, saved, printed, and exported to a variety of formats such as Microsoft Excel, Adobe PDF, or a simple comma-separated values (CSV) file. Report information can be stored locally on the Cisco Unity Express module or remotely on an external database. For large enterprises that require an overall view of branch activities, up to 500 Cisco Unity Express sites can report to a centralized database. |

* Incremental upgrades depend on the extent of changes introduced in the release.

** Background downloads are not supported on AIM-CUE.

Table 3. Voicemail Features

| Feature | Customer Benefit |
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| Up to 300 hours of voicemail storage configurable on per-mailbox basis | <p>Because Cisco Unity Express is available in multiple form factors, you can choose the capacity, performance, and price point that meets the specific site requirements. In addition, the voicemail storage capacity of each Cisco Unity Express module can be customized on a per-user basis as defined by the system administrator or, alternatively, left at the default settings. Following is a storage capacity summary for each module type:</p> <ul style="list-style-type: none"> • Cisco Unity Express advanced integration module (AIM-CUE): 14* hours • Cisco Unity Express network module (NM-CUE): 100 hours • Cisco Unity Express enhanced-capacity network module (NM-CUE-EC): 300 hours. |

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| New capacity enhancement with Release 3.0 (available on Cisco Unity Express NME-CUE) | Release 3.0 adds support for the newer Cisco Unity Express network module with optional IVR (NME-CUE) hardware, allowing up to 32 ports for use by integrated messaging, voicemail, and automated-attendant functions or optional IVR sessions. Further enhancements in the new network module include support for up to 125 IMAP sessions. The new hardware also supports graceful manual shut down of the Cisco Unity Express application and offers an LED status display. |
| General Delivery Mailboxes (GDMs) | This feature provides storage for voicemail messages that any designated team member can retrieve to respond quickly to callers' requests, resulting in greater customer satisfaction. As a configuration option, any licensed number of these GDMs can be configured instead as individual mailboxes, expanding the capacity of each license level from 12, 25, 50, 100, 150, 200, and 250 up to 17, 35, 65, 120, 175, 225, and 275 individual mailboxes, respectively. |
| Easy-to-use, end-user tutorial for self-service mailbox creation | A complete yet concise telephony user interface tutorial takes the user step by step through the mailbox setup process, minimizing the need for administrator assistance, saving time and money. |
| Intuitive Web-based GUI | A Web-based GUI assists with configuring telephony information in conjunction with Cisco Unified Communications Manager or Cisco Unified Communications Manager Express, providing ubiquitous remote access for managing, configuring, and provisioning Cisco Unity Express. The GUI allows the simple import of information shared with Cisco Unified Communications Manager and Cisco Unified Communications Manager Express and eases management of end users and of group affiliations. |
| Support for a full range of common voicemail features | Commonly used voicemail features such as replying, forwarding, and saving messages; message tagging for privacy or urgency or future delivery; alternative greetings; pause, fast forward, rewind; and envelope information are provided for optimal management of messages. This set of typical features allows users to get started with Cisco Unity Express quickly and with little training. |
| Fax integration | Inbound fax capability is provided using a combination of the native T.37 fax processing in the Cisco Integrated Services Routers, combined with the message management of Cisco Unity Express. Faxes can be received using a single or a separate direct inward dialing (DID) number for each user, and messages can be stored in user mailboxes, sent to the user's e-mail client as a TIFF file attachment through the IMAP capability, or delivered in a GDM. Users can select a fax machine to print the fax that is stored in a GDM or in their personal mailbox. |
| Live Reply (Release 3.0) | Live reply allows a user to select an option to automatically call back the sender of the voicemail message. When listening to a voicemail, the user will be prompted to select one of the following options: Reply to the message (within the same Cisco Unity Express system or a networked location) Return the person's call (internal or external) using the caller ID or extension captured in the message envelope |
| Live Record (Release 3.0) | Live Record allows the user to select an option to record a call on an ad-hoc basis. The recorded call is sent as a voicemail message in the user's mailbox and can also be forwarded to the user's e-mail client through the IMAP capability. Tones can be generated to indicate to the end user that a conversation is being recorded. |
| Delivery to nonsubscriber (Release 3.0) | Delivery of voicemail to nonsubscribers provides the capability to compose a voice message for delivery to internal or external numbers. When the number is entered, Cisco Unity Express will play back or display the target user's directory name by using the TUI or VoiceView Express. When Cisco Unity Express calls the destination, a recorded message will be played: "You have a message from <mailbox user's spoken name>. To listen to the message, please press *." The "*" entry is used as an acknowledgment of message delivery. A maximum of three attempts are made using the similar or same queuing limits (set to 2) for message notification (outcalling) service. If the message does not get delivered, some notification is provided to the mailbox owner. |
| Support for Voice Profile for Internet Mail (VPIM), the industry standard for voicemail message communication | Cisco Unity Express supports VPIM Version 2.0, the industry standard that permits messaging systems to communicate with each other. Cisco Unity Express uses VPIM to communicate with other Cisco Unity Express and Cisco Unity systems. Nondelivery and delayed delivery receipts provide users with complete information about the status of a message. This set of messaging features increases productivity across business locations, lowers long-distance costs, and ultimately protects investment in existing VPIM-compliant messaging systems. |
| Distribution lists | The public and private distribution list function provided by Cisco Unity Express allows a voicemail message to be simply and quickly addressed to a list of predefined recipients, saving time and minimizing keying errors. Cisco Unity Express includes an "all users" public distribution list and the capability for a privileged user to define up to 15 other public lists. Individual users can define up to 5 private lists of their own. A member of a distribution list can be a user, a GDM, a group, or other distribution lists. Remote users and blind addresses can also be members of distribution lists. |

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| Broadcast Messages | Like distribution lists, broadcast messages allow messages to be delivered to multiple recipients. Additionally, broadcast messages allow important communications to be given top priority in the recipient's voice-message queue. These special messages are played before any other messages and will remain in the user's mailbox until the message is retrieved in full or expires, helping ensure that essential communications are heard. Broadcast messages are managed through the Administration Via Telephony (AVT) feature, a privileged user interface that, in addition to other system management functions, allows broadcast messages to be created, broadcast message expiries to be defined, and broadcast messages to be sent to local users and remote locations. Beginning with Cisco Unity Express 2.3, there is a configurable option to send a broadcast message to either the local system users only or to local and remote networked voicemail destinations. |
| Spoken name confirmation for remote users | Cisco Unity Express provides spoken name confirmation for all local and many remote recipients. Spoken name confirmation helps ensure that the correct recipient has been selected when a user addresses a voicemail message. The confirmation includes the remote location information if applicable, to help ensure that the message is sent to the correct user and location. |
| Undelete messages | If a message is inadvertently deleted during a Cisco Unity Express voicemail message session, the user can undelete the message and return it to the active state within the same session. This feature provides users with improved voice-message management. |
| Calling Line Identification (CLID) as part of envelope information | Another improvement in Cisco Unity Express voice-message management for the user includes, as a configuration option, CLID information for all voicemail messages, whether they originate internally or from the public switched telephone network (PSTN). |
| Shared Cisco Unity TUI, menus, and commands | Because Cisco Unity Express shares the same TUI menus and prompts as Cisco Unity software, it reduces end-user training costs, provides familiarity for users as they migrate between different organizational environments (branch office and headquarters), and provides the foundation for the possible migration to Cisco Unity software. |
| Standard and alternative greetings | Users can choose between a standard or alternative greeting to communicate special messages such as an extended absence or vacation. |
| Alternative number options | Both caller and user satisfaction are increased through the use of this feature. The individual user or the system administrator can designate an alternative telephone number or local extension by which a caller can reach the called party or an assistant by simply pressing zero during the voicemail greeting. |
| Mandatory message expiry | Administrators can better manage and maintain the message store on the system by using mandatory message expiry. This option enforces a policy whereby subscribers must delete messages upon expiry. |
| Future message delivery | A message can be addressed to users on local or remote systems for delivery at a future time, up to 1 year in advance. |
| Integrated messaging | Cisco Unity Express Release 2.3 brought voice messages to the IMAP desktop e-mail inbox. Taking advantage of existing messaging infrastructure and IMAP e-mail clients, Cisco Unity Express desktop messaging access provides simple, native access to voicemail from nearly any e-mail client, providing continuous and global access to messages. Integrated messaging is supported only on Cisco Unity Express network module and enhanced-capacity network module (NM-CUE and NM-CUE-EC). Release 3.0 allows integrated messaging on the Cisco Unity Express advanced integration module (AIM-CUE). The maximum number of sessions include up to 6 voice calls, 3 VoiceView Express sessions, or 20 IMAP sessions at any given time. |
| VoiceView Express | VoiceView Express is a convenient and faster visual alternative to TUI and is used to access and manage messages and mailbox settings using the Cisco Unified IP Phone display and soft keys. VoiceView Express improves employee productivity by providing quick visibility into voice mailboxes, helping users better manage their day-to-day tasks. VoiceView Express is supported only on the Cisco Unity Express network module and enhanced-capacity network module (NM-CUE and NM-CUE-EC). Release 3.0 supports VoiceView Express on the Cisco Unity Express advanced integration module (AIM-CUE) for up to three sessions. |
| Remote message notification | This system service notifies a user upon the arrival of all new or urgent messages. Each mailbox (individual and GDM) can be configured to have notifications sent to multiple destinations simultaneously: up to four numeric devices (such as phone numbers) and up to two text devices (such as text pagers or e-mail address). Users can configure destinations and manage their notification schedule for each destination using the TUI, GUI, or VoiceView Express. |

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| Message notification cascading (Release 3.0) | Cascading message notification allows a user to set up a series of notifications to a widening circle of recipients. For example, to create a hierarchy of message notifications for a technical support department, set the first message notification to be sent immediately to the pager of the front-line technical support representative. The next notification can be sent after a delay of 15 minutes to the pager of the department manager. A third notification can be sent after a delay of 30 minutes to an employee in the problem resolution group. Notifications continue to cascade according to the options selected until the message has been saved or deleted by a recipient. |
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*The storage capacity of the Cisco Unity Express advanced integration module (AIM-CUE) is increased from 512 MB to 1 GB of compact flash memory beginning with Cisco Unity Express Release 2.0, allowing 14 hours of voicemail storage on the 1-GB compact flash. The 512-MB Cisco Unity Express advanced integration module (AIM-CUE) will continue to provide five hours of voicemail storage.

Table 4. Automated Attendant Features

| Feature | Customer Benefit |
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| Built-in automated attendant with dial-by-name, dial-by-extension, and return-to-operator | The standard automated-attendant services provided with Cisco Unity Express simplify self-service for callers by allowing them to quickly reach the right person without the assistance of an operator 24 hours a day, 7 days per week, with the option to return to an operator at any time when greater assistance is needed. Two standard automated-attendant options are provided with Cisco Unity Express: one that includes dial-by-name and dial-by-extension, and a second, introduced in Release 2.1, that allows single-digit dialing for up to nine users or groups. |
| Custom automated attendant with Cisco Unity Express Editor | The Cisco Unity Express Editor is a Microsoft Windows GUI-based visual scripting tool that gives administrators a simple way to create up to four separate, customized automated-attendant flows, in addition to the system automated attendant. Steps within the drag-and-drop menu are represented graphically in the Cisco Unity Express Editor, making the operation straightforward and intuitive. Administrators can validate and debug custom script call flows using the Cisco Unity Express Editor, further simplifying the process. |
| Simple Web-based automated-attendant editor (Release 3.0) | A simple interface to change parameters of the built-in automated attendant make managing and updating the call automated attendant easy enough for a non-technical user. For more advanced functions where the automated-attendant structure needs to be modified, the feature-rich Cisco Unity Express Editor can be used. |
| Multilevel automated attendant | Through the use of the Cisco Unity Express Editor, system administrators can create up to four multilevel automated-attendant flows that provide a hierarchical dual tone multifrequency (DTMF) based menu. The multilevel automated attendant allows callers to reach individuals, departments, or prerecorded information such as directions or business hours. It also provides customizable time-of-day or day-of-week call management. |
| AVT (formerly the greeting management system) | Custom automated-attendant prompts can be easily recorded through the Cisco Unity Express AVT feature, through either the TUI or an offline WAV file recording tool. Prompts can be rerecorded using AVT, allowing automated-attendant administrators to modify prompts without needing GUI access to change file names. Additionally, alternative greetings can be used in a custom automated attendant as a subflow. |
| Holiday schedules | Cisco Unity Express allows holidays to be defined and a customized automated-attendant prompt to be played during holidays. These prompts, which are easily updated through the AVT, can provide the caller with customized information about the operation of the business or special events. |
| Business hours | The business hours function allows up to four schedules to be defined, providing different automated-attendant prompts to be played based on the time of day, without the need for manual intervention. For example, one schedule can define 8 a.m. until noon as business open, from noon until 1 p.m. as business closed for lunch, from 1 p.m. until 5 p.m. as business open, from 5 p.m. until 8 a.m. as business closed, and all weekend as business closed, with a specific prompt for each time segment. |
| Alternative automated-attendant greeting | The system administrator can record an alternative automated-attendant greeting, which can be used in case of an emergency or another short-term event, such as a snow day. The alternative greeting works much like the alternative voicemail greeting by prompting the system administrator to simply toggle between either the active or inactive mode. |
| Automated-attendant peg counts (Release 3.0) | Cisco Unity Express can generate peg counts for the automated-attendant function. These peg counts report the flow of incoming automated-attendant calls, helping customers ensure that they have the right staffing during the appropriate hours of the day to meet traffic demands, maximizing revenue opportunities. Peg counts can also be used to help ensure that the automated attendant is configured for optimal performance and improved customer satisfaction. |

Table 5. Optional IVR (Introduced in Cisco Unity Express 3.0)

| Feature | Customer Benefit |
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| Optional IVR | Because an IVR provides caller self-service, it improves customer satisfaction and lowers operational costs. Introduced with Release 3.0, the Cisco Unity Express optional IVR allows a customer to update personal information and preferences, order products, track delivery, check payment status, and request product information, therefore alleviating the burden on the customer service representative or contact center agent. |
| Broad range of IVR sessions | Because the optional IVR is available on all the same integrated hardware modules supported for Cisco Unity Express, it provides a broad range of IVR sessions: from 2 to a maximum of 30, depending on the hardware platform chosen and the number of licensed voice mailboxes. |
| Tight integration with Cisco Unity Express voicemail and automated attendant | The Cisco Unity Express optional IVR is tightly integrated with the voicemail and automated-attendant services available on the product. This tight integration provides the caller with more options to resolve transactions including breaking out to an operator or leaving a voicemail message. |
| Cisco Unity Express Editor for scripting IVR | The Cisco Unity Express Editor is a Microsoft Windows GUI-based visual scripting tool that gives administrators a simple way to create customized IVR scripts in addition to those for the automated attendant. Steps within the drag-and-drop menu are represented graphically in the Cisco Unity Express Editor, making the operation straightforward and intuitive. Further streamlining the process, administrators can debug and validate IVR call flows using the Cisco Unity Express Editor. |
| Simple Web-based Cisco Unity Express Editor for IVR (Release 3.0) | Cisco Unity Express Release 3.0 introduced a simple interface to change parameters of the built-in automated attendant to make managing and updating the call automated attendant easy enough for a nontechnical user. This function is also available for the Cisco Unity Express optional IVR. |
| VoiceXML 2.0 browser | As an alternative to the Cisco Unity Express Editor, the built-in VoiceXML 2.0-based browser can be used in conjunction with a general-purpose Web browser to customize the IVR. This feature allows IVR applications to make HTTP requests so customers can use the Call Me button on the business Web page to call the IVR for self-service or to connect with an agent. |
| Broad range of supported databases | Cisco Unity Express optional IVR supports a variety of databases that handle the needs of both the enterprise branch and the SMB. <ul style="list-style-type: none"> • Microsoft SQL 2000 • Microsoft SQL Desktop Edition (MSDE) 2000 • Sybase Adaptive Server Version 15 12 • Oracle 10g • IBM DB2 9 8.2 |
| Pharmacy system integration | Ideally suited for the retail environment, the optional Cisco Unity Express IVR is compatible with a selection of industry-leading pharmacy systems including those available from Per-SE Technologies: TechRx, NDCHealth Zadall, NDC Health EnterpriseRX, and PDX.-Rx. |
| Outbound e-mail and fax | Administrators and script developers can further tailor the customer experience by creating and sending e-mail and faxes with the Cisco Unity Express Editor for the IVR. E-mail messages can have up to five files attached. |
| AVT for prompt management | Administrators can use the intuitive AVT prompt management system available with Cisco Unity Express to record prompts for interaction with the caller, further customizing the user experience. |
| HTTP support | Support for HTTP requests provides developers and administrators with the capability to Web-enable the Cisco Unity Express optional IVR. Customers can also make an HTTP request from their IVR application and use the response from the request to play back information or send an e-mail or fax. |
| Real-time and historical reports | The Cisco Unity Express optional IVR introduces an extensive set of real-time and historical reports, giving administrators powerful information for understanding customer preferences, for network resource planning, and for assessment purposes. The reports cover all crucial IVR information, including system status such as traffic analysis, active calls, incoming calls over time, and rejected calls, with user-defined thresholds for each. Historical reports also cover call and application activities. Reports can be sorted and filtered, viewed, saved, printed, and exported to a variety of formats such as Microsoft Excel, Adobe PDF, or a simple CSV file. Report information can be stored locally on the Cisco Unity Express module or remotely on an external database. For large enterprises that require an overall view of branch activities, up to 500 Cisco Unity Express sites can report to a centralized database. |

For more information about the Cisco Unity Express optional IVR services, introduced in Cisco Unity Express 3.0, please see the Cisco Unity Express Optional IVR data sheet.

Product Summary

Table 6 lists the Cisco routers that support Cisco Unity Express.

Table 6. Supporting Routers

| Platform | Cisco Unified Communications Manager Express Support | Cisco Unity Express Support |
|--|--|--------------------------------------|
| Cisco 2801 Integrated Services Router | Yes | Yes—Cisco Unity Express AIM-CUE only |
| Cisco IAD2400 Series Integrated Access Devices | Yes | No |
| Cisco 2800 Series Integrated Services Routers | Yes | Yes |
| Cisco 3700 Series Multiservice Access Routers | Yes | Yes |
| Cisco 3800 Series Integrated Services Routers | Yes | Yes |

Software Support

The Cisco Unity Express network module (NM-CUE) is supported beginning with Cisco IOS Software Release 12.3(4)T. The network module with enhanced capacity (NM-CUE-EC) is supported beginning with Cisco IOS Software Releases 12.3(11)T6, 12.3(14)T2, and 12.4(1). These Cisco IOS Software releases correspond to Cisco Unified Communications Manager Express Releases 3.2 and 3.3, respectively. The enhanced-capacity network module (NM-CUE-EC) was introduced in Cisco Unity Express Release 2.1. See Table 7.

Table 7. Software Support

| Cisco Unity Express Release | Cisco Unified Communications Manager Release | Cisco Unified Communications Manager Express Release | IOS Release |
|-----------------------------|--|--|---|
| 1.1 | Release 3.3 | Release 3.0 and 3.1 | 12.3(4)T, 12.3(7)T, 12.3(8)T, 12.3(11)XL |
| 2.0 | Release 3.3 and 4.0 | Release 3.0, 3.1 and 3.2 | 12.3(4)T, 12.3(7)T, 12.3(7)XL, 12.3(8)T, 12.3(11)T, 12.3(11)XL |
| 2.1 and 2.2 | Release 3.3, 4.0, and 4.1 | Release 3.0, 3.1 and 3.2 | 12.3(4)T, 12.3(7)T, 12.3(7)XL, 12.3(8)T, 12.3(11)T, 12.3(14)T |
| 2.3 | Release 4.1, 4.2, and 5.0 | Release 3.1, 3.2,3.3, 3.4, 4.0, 4.0(1) | 12.3(7)T, 12.3(8)T, 12.3(11)T, 12.3(14)T, 12.4T, 12.4M, 12.4(4)XC |
| 3.0 | Release 4.2, 5.0, 5.1, 6.0 | Release 3.2,3.3, 3.4, 4.0, 4.0(3), 4.1 | 12.3(7)T, 12.3(8)T, 12.3(11)T, 12.3(14)T, 12.4T, 12.4M, 12.4(4)XC |

Microsoft Internet Explorer Version 6.0 is required for Cisco Unity Express GUI support.

License Support

Cisco Unity Express user license levels are available on the network module with enhanced capacity (NM-CUE-EC), network module (NM-CUE), and advanced integration module (AIM-CUE), respectively (Table 8). Licensing information for the Cisco Unity Express optional IVR is available on the Cisco Unity Express Optional IVR data sheet.

Table 8. License Support

| License Level: Number of Mailboxes | Cisco Unity Express Network Modules (NM-CUE, NM-CUE-EC, and NME-CUE) | | | Cisco Unity Express Advanced Integration Module (AIM-CUE) | | |
|--|---|---------------------|--|--|---------------------|---|
| | GDMs | Hours of Storage | Concurrent Voicemail and Automated- Attendant Ports and Sessions | GDMs | Hours of Storage | Concurrent Voicemail and Automated-Attendant Ports and Sessions |
| 12 mailboxes | 5 GDMs | 100 hours | 8 NM-CUE 16 NM-CUE-EC 32 NME-CUE-EC | 5 GDMs | 14 hours | 6 on all Cisco 2800 and 3800 Series Integrated Services Routers platforms |
| 25 mailboxes | 10 GDMs | 100 hours | 8 NM-CUE 16 NM-CUE-EC 32 NME-CUE-EC | 10 GDMs | 14 hours | 6 on all Cisco 2800 and 3800 Series Integrated Services Routers platforms |
| 50 mailboxes | 15 GDMs | 100 hours | 8 NM-CUE 16 NM-CUE-EC 32 NME-CUE-EC | 15 GDMs | 14 hours | 6 on all Cisco 2800 and 3800 Series Integrated Services Routers platforms |
| 100 mailboxes | 20 GDMs | 100 hours | 8 NM-CUE 16 NM-CUE-EC 32 NME-CUE-EC | Not supported | | |
| 150 mailboxes | 25 GDMs | 300 hours | 16 NM-CUE-EC 32 NME-CUE-EC | Not supported | | |
| 200 mailboxes | 25 GDMs | 300 hours | 16 NM-CUE-EC 32 NME-CUE-EC | Not supported | | |
| 250 mailboxes | 25 GDMs | 300 hours | 16 NM-CUE-EC 32 NME-CUE-EC | Not Supported | | |

Language Support

Cisco Unity Express currently supports the languages listed in Table 9.

Table 9. Supported Languages

| Language | Variation | Cisco Unity Express Release- Voice Mail and Auto Attendant | Cisco Unity Express Release- Interactive Voice Response (IVR) |
|-----------------|-----------|---|--|
| Chinese | Mandarin | Release 2.3 | Release 3.0 |
| Danish | | Release 2.1.3 | Release 3.0 |
| English | British | Release 2.1.3 | Release 3.0 |
| English | US | Release 1.0 | Release 3.0 |
| French | Canadian | Release 2.3 | Release 3.0 |
| French | European | Release 2.0 | Release 3.0 |
| German | | Release 2.0 | Release 3.0 |
| Italian | | Release 2.1.3 | Release 3.0 |
| Japanese | | Release 2.3 | Release 3.0 |

| | | | |
|-------------------|----------------|---------------|-------------|
| Korean | | Release 2.3 | Release 3.0 |
| Portuguese | Brazilian | Release 2.1.3 | Release 3.0 |
| Spanish | European | Release 2.0 | Release 3.0 |
| Spanish | Latin American | Release 2.1.3 | Release 3.0 |
| Spanish | Mexican | Release 2.3 | Release 3.0 |

Additional languages are planned for subsequent releases.

Physical Specifications

Table 10 lists the hardware specifications for the Cisco Unity Express network modules.

Table 10. Hardware Specifications

| Feature | Cisco Unity Express Network Modules (NM-CUE, NM-CUE-EC, and NME-CUE) | Cisco Unity Express Advanced Integration Module (AIM-CUE) |
|---------------------------------|--|---|
| Network size | Small and medium-sized offices or branches | Small office or branch |
| Hardware | | |
| Processor | <ul style="list-style-type: none"> • 500-MHz Intel Mobile Pentium III • NME-CUE: 1-GHz Celeron M processor | 300-MHz Intel Celeron |
| Default memory (SDRAM) | <ul style="list-style-type: none"> • 256 MB on NM-CUE • 512 MB on NM-CUE-EC and NME-CUE-EC | 256 MB |
| Maximum SDRAM | 512 MB | 256 MB |
| Internal disk storage | 40 GB IDE, 4200 rpm | 1 GB compact flash memory* |
| Network interfaces | None | None |
| Physical Specifications | | |
| Dimensions (H x W x D) | 1.55 x 7.10 x 7.2 in | 5.25 x 3.35 x 0.75 in |
| Weight | 1.5 lb (0.7 kg) maximum | 0.20 lb (0.09 kg) maximum |
| Operating humidity | 5 to 95% noncondensing | 5 to 90% noncondensing |
| Operating temperature | 32 to 104°F (0 to 40°C) | 23 to 122°F (–5 to 50°C) |
| Nonoperating temperature | –40 to 185°F (–40 to 85°C) | –40 to 158°F (–40 to 70°C) |
| Operating altitude | 0 to 10,000 ft (0 to 3,000m) | 0 to 13,000 ft (0 to 3963m) |
| Safety | UL 1950; CSA-C22.2 No.950, EN 60950, and IEC 60950 | UL 60950, IEC 950, and EN60950 |
| EMC | FCC Part 15 Class A; EN55022 Class B; AS/NZS 3548 Class A; CISPR22 Class B; VCCI Class B; EN55024; EN61000-3-2; and EN61000-3-3 | FCC Part 15 Class A; EN55022 Class A; AS/NZS 3548 Class A; CISPR22 Class A; VCCI Class A; EN55024; EN61000-3-2; and EN61000-3-3 |

*The storage capacity of the Cisco Unity Express advanced integration module (AIM-CUE) is increased from 512 MB to 1 GB of compact flash memory beginning with Cisco Unity Express Release 2.0, allowing 14 hours of voicemail storage on the 1-GB compact flash drive. The 512-MB AIM-CUE will continue to provide 5 hours of voicemail storage. If historical reporting and two concurrent languages are activated on the AIM-CUE, the storage capacity will be limited to 8 hours.

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