

VCX Connect and VCX V7000 Unified Communications Series

VCX Release 9.5 Features Lists

Technical Solution Brief

HP Networking Technical Marketing Engineering

Table of contents

Introduction	2
VCX System-Level Features	2
VCX System Features	2
VCX Collaboration	5
VCX Supported Configurations	6
VCX Resiliency.....	10
VCX System Administration	11
VCX Quality of Service	15
VCX Security	16
VCX Management.....	16
VCX IP Phones	18
VCX Reporting.....	20
VCX Media Gateways.....	21
VCX IP Telephony Features	23
VCX IP Telephony Calling Features.....	23
VCX IP Telephony ACD Group Features.....	31
VCX IP Telephony Routing Features	35
VCX Multi Site Features	39
VCX Multi Site Calling Features	39
VCX Multi Site Application Support	42
VCX Features and Phones	43
VCX Features and Phones	43
IP Messaging Features.....	49
Architectural Features	49
Message Features	50
Greeting Features.....	53
Distribution List Features	54
Directory Features	54
User Productivity Features.....	55
Find Me Follow Me Features	59
Fax Mail Features	59
Email Integration Features	60
Administration Features.....	61
Management Features	65
Reporting Features	65
For more information.....	



Introduction

This Technical Solution Brief (TSB) provides a list of the features and functionality available with the Hewlett-Packard (HP) VCX Connect Unified Communications Series and VCX V7000 Unified Communications Series release 9.5. . The intended audience for this TSB is HP Solution Architects and HP Technical Consultants.

- A yellow highlight indicates new feature functionality from the previous release (9.0).
- The tables in this document use these abbreviations for the VCX products:
 - "VCX C" is VCX Connect
 - "VCX E" is VCX V7000

VCX System-Level Features

VCX System Features

The following table lists the major system features supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Converged Application Based Architecture	√	√	The VCX architecture transforms IP Telephony into an enterprise application by converging voice and data applications on a secure network with a common infrastructure for authentication, call control, presence, privacy, and management
Standards-based Connectivity	√	√	The open architecture of the VCX allows it to be a cost-effective solution that inter-operates well with other IP LAN/WAN infrastructure and SIP devices
End-to-end SIP Signaling	√	√	Designed as an end-to-end IP Telephony solution based on standards, the VCX provides cost-effective and flexible deployments, with the ability to overlay over your existing legacy PBX equipment.
Linux Operating System with Additional Security	√	√	The VCX IP Telephony solution operates on a Linux operating system with additional security measures on industry standard enterprise-grade servers.
VCX IP Telephony	√	√	VCX IP Telephony provides the core SIP-based IP-PBX functionality of the system, providing SIP Back To Back User Agent Call Processing, VCX database replication, SNMP management, web based administration, and routing features.
IP Messaging	√	√	IP Messaging provides SIP-based voice mail, inbound fax mail, find me follow me, email integration, and auto attendants. The IP Messaging application supports multiple languages, G.711 or G.729 codecs, multiple redundancy options, and supports scalability.
System Redundancy	√	√	All VCX products can be designed with redundancy built-in at all layers including applications, servers, gateways, and network routing.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Scalability	√	√	The VCX IP Telephony Solution supports scalability within a server platform and allows growth by adding additional “regions” to the system, providing the look and feel of a single system to users through Global Directory and IP Messaging Global Voice Mail features.
Global Directory	√	√	To meet the needs of distributed enterprises, the VCX Global Directory feature provides directory synchronization between multiple regions which enables seamless and efficient multi-site call routing features. Automatically detects differences between different VCX versions, allowing VCX 9.5 and later systems to have Global Directory synchronized even with differences in release level
Global Voice Mail	√	√	Global Voice Mail is an IP Messaging feature that allows a group of individual IP Messaging systems to act as a single unit from the user’s perspective. You use Global Voice Mail: when a distributed voice mail solution is required, when centralized provisioning and a global scope for users is required, and to provide a truly enterprise-wide messaging solution. With Global Voice Mail, you get: Global Name Directory, Global Name Announcements, Global Message Sending, and Global Provisioning.
Mobility	√	√	The VCX solution supports mobility with hot desking, telecommuters, 3rd party WiFi devices, and 3rd party cellular extension mobility. The VCX supports the ability for remote users with hard phones or soft phones to utilize the services.
Centralized Web Based System Administration	√	√	The Provisioning Service provides a web browser interface for the provisioning of the VCX IP Telephony module.
Call Detail Records	√	√	The VCX supports the collection and reporting of Call Detail Records for single site and multi site implementations.
Centralized Management	√	√	The Intelligent Management Center (IMC) and the IMC Voice Service Manager (VSM) component provides SNMP-based management of VCX services, trap collection, alarm notifications, scheduled backups, scheduled upgrades, end of call quality of service measurements, and capable of managing other SNMP-based switch, routing, wireless components.
SIP Trunking via Ingate SIParator Back to Back User Agent	√	√	Supports SIP Trunking using Ingate SIParator B2BUA interface that supports the ISP’s and service providers that Ingate supports. This is a 3 rd party product, sold and serviced by 3 rd party vendor.
PBX Integration	√	√	The VCX solution can integrate legacy PBXs and key systems through media gateways, allowing customers to migrate to IP Telephony at their own pace while immediately enjoying the benefits of IP-based applications.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Emergency Services	√	√	The VCX supports location-based E911 emergency services with support for IP/subnet-based emergency record locators, emergency gateway and callback number definition, emergency class of service, and trap notifications.
IP Conferencing	√	√	IP Conferencing provides SIP-based audio and desktop video conferencing for scheduled, meet-me, and dial-out conferences with public and private access for internal and external users.
IP Presence	√	√	IP Presence provides SIP-based instant messaging and presence in conjunction with the VCX Convergence Center Client.
IP Telecommuter	√	√	IP Tele Commuter provides SIP-based NAT traversal functionality to allow VCX IP phones to be deployed at remote sites via the internet.
EasyRun Exchange Call Center	√	√	The Exchange Call Center provides ACD functionality for the VCX for basic calls.
EasyRun EpicCenter Contact Center	√	√	The EpicCenter Contact Center provides advanced ACD and multi-media contact center functionality for the VCX.
iQNet VistaPoint Software Attendant Console	√	√	VCX supports the iQNet VistaPoint Enterprise software attendant console, which is a 3 rd party product available separately from iQNet. This product is a client/server presence-based application that also provides integration with Outlook.
3rd Party SIP Applications and Devices	√	√	The VCX has shown integration with many SIP-based applications and devices.
VCX Applications run on Windows 7 32-bit operating system	√	√	VCX Windows applications (CDR Reporting and ACD Real Time Statistics) are supported to work on Windows 7 32-bit Operating System
Standard SIP User parameter support	√	√	The SIP "user" parameter has been standardized to follow the definition of RFC 3261. Administrators can select the pre-VCX 9.5 usage or use the standard. A new vcx-user parameter has been added to contain the proprietary information formerly held in the "user" parameter.

VCX Collaboration

The following table lists the collaboration features supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
LDAP Synchronization with Lotus Domino running on IBM i	√	√	Synchronize users from Domino on IBM i → VCX
LDAP Synchronization with Lotus Domino running on Windows	√	√	Synchronize users from Domino on Windows → VCX
LDAP Synchronization with Microsoft Active Directory	√	√	Synchronize users from Microsoft Active Directory → VCX
Telephony presence integration for Lotus Sametime running on IBM i	√	√	Users of the Sametime client software can include VCX telephone users in their contact lists, see VCX telephony presence of their contacts, make calls to those users using “click to call” or “click to conference” techniques, and can create chat sessions with those users.
Telephony presence integration for Lotus Sametime running on Windows	√	√	Users of the Sametime client software can include VCX telephone users in their contact lists, see VCX telephony presence of their contacts, make calls to those users using “click to call” or “click to conference” techniques, and can create chat sessions with those users.
Web Services SDK	√	√	Based on industry standard SOAP/XML web services interfaces, the SDK enables application software developers to easily interface with the VCX software to place calls, to control telephones, and obtain status information from them.
Desktop Communicator Soft Phone with Outlook Plugin	√	√	VCX Desktop Communicator Soft Phone with click-to-dial from Outlook Contacts directory with optional Desktop Communicator Outlook Edition.

VCX Supported Configurations

The following table lists the configurations supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Regional Office	✓	✓	A VCX regional office is a logical entity consisting of a redundant set of IPT/IPM servers that provides primary and secondary IPT and IPM services to a set of HQ users (local to the regional servers) and users at remote offices over the corporate WAN.
Branch Office		✓	A VCX branch office is a location deployed over the corporate WAN that has its own survivable VCX server for the local users, and has the regional office as its secondary for IP Telephony services. IP Messaging can be provided locally at the branch office with no redundancy or can be provided by the regional office in a redundant fashion over the WAN. A VCX Branch Office cannot be deployed standalone, it must be connected to an existing Regional Office.
Remote Office	✓	✓	A VCX remote office is a location that has phones and gateways deployed over the corporate WAN. The remote office uses the services of the VCX regional office primary and secondary servers, and uses the local gateway(s) to provide local dialing, emergency services, and remote survivability.
Mobile Office	✓	✓	A VCX mobile office is a logical entity in a location where a remote user is located, typically connected to the corporate network via the internet.
Co-Located Redundancy	✓	✓	VCX supports the ability to deploy the regional office servers in a co-located manner, where the servers can be in the same physical rack, on separate floors in the same building, or in separate rooms of a campus environment.
Geographically Separated Redundancy	✓	✓	VCX supports the ability to deploy the regional office servers in a geographically separated manner across the corporate WAN with sufficient bandwidth and quality of service appropriate for the deployment. IP Telephony services cannot be load shared between the primary and secondary servers. IP Messaging services can be load shared across the WAN, so that users local to each server use their local IPM server as their primary server, and the remote server as their secondary.
Optional Redundancy	✓		The ability to deploy a non-redundant single site regional office. IP Telephony and IP Messaging services are deployed in a standalone mode at the regional office. Supports the ability to add the redundant secondary server in the future in a simple manner.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Single Region	✓	✓	A VCX Single Region configuration is one where there is 1 HQ location, a backup location (the backup location is optional – server redundancy is mandatory and can be co-located or geographically separated), and 1 or more remote offices (phones and gateways only). There is no hard limit to the number of remote offices, only a limit to the number of users supported by the regional office configuration and WAN limits.
Multi Region	✓	✓	A VCX Multi Region configuration is one where there are more than one regional offices connected together. The Global Directory feature provides seamless routing between the region and branches, transparency for many features across the region and branches, with local and global user directories.
Region and Branch		✓	A VCX Region and Branch VCX configuration is one where a regional office is deployed along with 1 or more Branch Offices. Remote offices are supported the same as a Single Region configuration. One of the regional office servers (typically the primary) provides secondary services for all the branch office servers and provides the central administration console. Each branch office can be administered locally or centrally as allowed by system administrators. The Global Directory feature provides seamless routing between the region and branches, transparency for many features across the region and branches, with local and global user directories. The VCX Region and Branch configuration supports multiple regions as well.
Regional Messaging	✓	✓	The VCX supports deployment of messaging regionally at the regional office. Mailboxes are hosted on the primary and secondary IP Messaging servers at the regional office. For remote users, this provides redundant messaging services over the corporate WAN, which must be designed to accommodate the volume of IP Messaging calls from remote users. Branch office users can also use regional messaging.
Local Messaging		✓	The VCX supports deployment of messaging locally on each Branch Office in the configuration, which is not redundant to the regional office. Archival of message data can be automatically saved to the regional office server. Local Messaging means the branch office users have messaging local to their branch office server.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Global Voice Mail	√	√	Global Voice Mail is a feature that connects multiple regions and multiple branches using local messaging systems together into a single system of distributed IP Messaging systems. To the user, it makes it seem like there is one voice mail system, with global name announcements and global message send capabilities regardless of location. To the system administrator, it provides a centralized point to administer the class of service and mailbox data. This feature runs on the IP Messaging logical partitions (LPARs).
VCX Connect Primary MIM and VCX Connect Secondary MIM	√		VCX Connect Primary MIM and VCX Connect Secondary MIM is VCX IP Telephony and IP Messaging running on an OAPS blade that fits in an MSR model 30-16, 30-20, 30-40, or 30-60. VCX Connect MIM supports up to 100 devices per VCX region (standalone server or redundant pair) and up to 6 VCX regions can work together using Global Directory to support up to 600 devices. VCX Connect Primary MIM and VCX Connect Secondary MIM comes with IP Telephony and IP Messaging software ready to run with built-in licensing for 25 phones and 25 mailboxes.
VCX Connect 100	√		VCX Connect 100 is VCX IP Telephony and IP Messaging running on a 1U modular chassis with built-in CPU, disk, one 4 port FXO module, and one 4 port FXS module. VCX Connect 100 is targeted for 30 – 70 devices with maximum growth to 100 devices per VCX region (standalone server or redundant pair) and up to 6 VCX regions can work together using Global Directory to support up to 600 devices. There are four additional slots for analog FXO, analog FXS, and/or digital T1/E1 modules (1 or 2 span max per chassis) or 4-port BRI modules. VCX Connect 100 comes with IP Telephony and IP Messaging software ready to run with built-in licensing for 25 phones and 25 mailboxes.
VCX Connect 200	√		VCX Connect 200 is VCX IP Telephony and IP Messaging running on an HP DL120G6 server (same specifications as V7005). VCX Connect 200 supports up to 500 devices and up to 500 mailboxes (standalone server or redundant pair), up to 12 VCX regions can work together using Global Directory to support up to 3,000 devices/mailboxes. VCX Connect 200 comes with IP Telephony and IP Messaging software ready to run with built-in licensing for 25 phones and 25 mailboxes.
VCX V7005 Server		√	In the VCX 9.5 release, VCX now supports the HP DL120G6 server as the V7005. The HP DL120G6 is a 1U server with 1 Xeon 4-Core X3430 2.4 GHz CPU, 2 GB RAM, 1 250G SATA disk, 2 GE ports, 1 DVD, 1 400W PS, and available with optional RAID disk.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
VCX V7205 Server		√	In the VCX 9.5 release, VCX now supports the HP DL360G6 server as the V7205. The HP DL360G6 is a 1U server with 1 Xeon 4-Core E5539 2.4 GHz CPU, 6 GB RAM, 2 146G 2.5 SAS disk, 2 GE ports, 1 DVD/CD-RW, 2 460W PS. The V7205 includes redundancy of the disk drive and power supply.
VCX V7000 Branch MIM		√	VCX V7000 MIM is VCX IP Telephony and IP Messaging running on an OAPS blade that fits in an MSR model 30-16, 30-20, 30-40, or 30-60. VCX V7000 Branch MIM supports up to 100 devices per VCX branch office, and can be used in VCX V7000 solutions using Regional or Local Messaging. VCX V7000 Branch MIM requires the V6100/EBM IPT/IPM server RTU license.
V6000 Fixed Chassis Integrated Branch Office Controller		√	The V6000 is a fixed chassis branch office solution with 4 FXO ports, 2 FXS ports, a CPU, and HDD. The V6000 is not modular like the V6100. The V6000 is only used as a Branch Office solution for VCX V7000 that supports up to 100 devices. The V6000 has an optional power supply module and an optional RAID HDD module available. A VCX V6000 Branch Office cannot be deployed standalone, it must be connected to an existing Regional Office.
V6100 Modular Chassis Integrated Branch Office Controller		√	The V6100 is a modular branch office solution that can be used as a Branch Office server (for VCX V7000 only) or as a modular gateway for all VCX products (providing future growth as a Branch Office for VCX V7000) that supports up to six analog or digital media gateway modules in addition to a CPU and HDD module. The V6100 has an optional power supply module and an optional RAID HDD module available. When serving as a VCX Branch Office, the V6100 supports a maximum of 100 devices. A VCX V6100 Branch Office cannot be deployed standalone, it must be connected to an existing Regional Office.
VCX V7000 Classic		√	VCX V7000 Classic is a VCX V7000 2 server configuration that provides a simple configuration intended for deployments with up to 2,500/5,000 devices/mailboxes per region and up to 10/20 Branch Offices per region, with V7005/V7205 servers, respectively, and up to 12 VCX regions. The branch office servers can be V7005 (up to 2,500 devices/mailboxes per region), V7205 (up to 5,000 devices/mailboxes per region). Enterprise Branch MIM (up to 100 devices/mailboxes), V6x00 (up to 100 devices/mailboxes), or At HQ, IP Telephony and IP Messaging services run on one primary server with a secondary server in the same IPT/IPM configuration. Branch Offices can be configured with Regional or Local Messaging, and Global Voice Mail is supported.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
VCX V7000 Expand		√	VCX V7000 Expand is a VCX V7000 server configuration that provides a scalable configuration intended for deployments with up to 10,000/20,000 devices/mailboxes per region and up to 50/75 branch offices per region with V7005/V7205 servers, respectively. VCX V7000 Expand is a minimum 3 server solution at the Regional Office with all users configured on Branch Offices, which are in addition to the Regional Office servers. Up to 12 VCX regions, up to 10,000 devices/mailboxes per VCX region using V7005 servers, and up to 20,000 devices/mailboxes per VCX region using V7205 servers. The branch office servers can be V7205 (up to 5,000 devices/mailboxes), V7005 (up to 2,500 devices/mailboxes), or V6x00 (up to 100 devices/mailboxes). At HQ, there are 2 IP Messaging servers when using Regional Messaging or Global Voice Mail, 1 IP Telephony Auth/Dir server (central provisioning and database secondary for all branches), 1 IP Telephony CallP server (secondary for all branches), and 1 IP Telephony CDR Server. In a VCX V7000 Expand configuration, all users are hosted on branch offices. Branch Offices can be configured with Regional or Local Messaging, and Global Voice Mail is supported.

VCX Resiliency

The following table lists the major resiliency features and functions supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
IP Telephony Redundancy	√	√	The VCX ensures high availability using a primary/secondary redundancy architecture that replicates data in real time, uses little bandwidth to accomplish this, and provides transparent failover for users, VCX applications, media gateways, and phones.
IP Messaging Redundancy	√	√	The IP Messaging application ensures high availability using a primary/secondary redundancy architecture that mirrors data in real time, provides transparent failover for users, VCX applications, media gateways, and phones.
Optional IP Telephony Redundancy	√		Optional redundancy of IP Telephony is supported on VCX Connect.
Optional IP Messaging Redundancy	√		Optional redundancy of IP Messaging is supported on VCX Connect and VCX.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Optional IP Conferencing Redundancy	√	√	The IP Conferencing application supports redundancy of the conferencing database with hot-standby for conferences and conference administration.
Phones and Media Gateways Redundancy	√	√	In case of Primary call processor connectivity failure, users will failover to the Secondary call processor.
PSTN (Remote Office) Survivability	√	√	The VCX provides remote inbound and outbound PSTN survivability in case of server failures, LAN, and WAN failures.
V7005 Optional RAID	√	√	Provides disk redundancy and improves system reliability.
V7205 Optional RAID		√	Provides disk redundancy and improves system reliability.
V6x00 Optional RAID		√	Provides disk redundancy and improves system reliability.
V6000 Optional Power Supply		√	Provides power supply redundancy and improves system reliability.
V6100 Optional Power Supply	√	√	Provides power supply redundancy and improves system reliability.

VCX System Administration

The following table lists the major administration features and functions supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Phone display multi language enhancement	√	√	For VCX V7000 and VCX Connect systems, the user name or phone's display name can support Unicode (UTF-8). Users can input multi-language data into these fields, such as Chinese, French, Spanish, Japanese, Korean, etc.
User name display on web interface enhancement	√	√	Configure how name is displayed in the User table on web interface
VCX extension length enhancement	√	√	The length of extension number (including phone extension, group address, etc.) has been increased from 10 to 15
Conference User Group/Class support	√	√	VCX IP Conference can import users from VCX IP Telephony. Administrators can define the User Group and User Class for the IP Conference system through VCX web interfaces. These fields are placeholders are not currently used.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
VCX IP Telephony and IP Messaging Web Interface	√	√	The VCX administrator web interface supports administration of all IP Telephony data and most IP Messaging data (remaining administration is performed via an XTerminal interface).
VCX System Administration web interface	√	√	The VCX supports a new web-based interface that provides access to many of the maintenance tasks that were previously accessed through the VCX command line interface.
Administration Access Control	√	√	Control access to the VCX system administrator provisioning interface based on access and administration role. New roles manager and dir have been added to existing admin role.
Administration Secure Access	√	√	System supports access via SSH, SFTP, and HTTPS only.
Audit Trails and Logging Enhancements	√	√	The VCX supports the collection of system events using the syslog protocol. These events include system and application access, VCX system modification, and VCX component activity. VCX administrators can view the logs from the VCX System Administration web interface.
Configuration Backup and Restore	√	√	The VCX supports the ability to back up all VCX configuration parameters via the web interface, provisioning information, and operating system data in a single file. The administrator can later restore the server's configuration from the backup file.
First Time Configuration	√		The VCX supports a web-based First Time Configuration (FTC) interface that makes it much easier to initially configure a VCX server.
First Time Data Import	√	√	The First Time Configuration interface provides an option that allows you to import a set of comma-separated-value (CSV) files, which contain preconfigured provisioning data (such as user accounts and phone extensions).
Resetting VCX Server	√	√	The VCX administrator has the option of restarting or shutting down a VCX server using the VCX administration web interface.
Reset to Defaults	√	√	The VCX administrator has the option of resetting a VCX server to its factory default condition, which removes all configuration, database, and messaging data from the server. The reset can be "soft" where it keeps the current log files and IP settings or "hard" where it removes all log files and resets to factory default IP settings.
Software Upgrades and Rollbacks	√	√	The process of upgrading from one VCX release to another now requires zero downtime for redundant servers. In addition, recovery from a failed upgrade (rollback to a previous VCX release) happens automatically. VCX administrators can perform a rollback operation manually if necessary.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Remove Previous Versions	√	√	The VCX administrator can remove previous versions of the VCX software from the system using the VCX System Administration Framework.
System Information	√	√	Provides a display of VCX system information such as software release, machine ID, serial number, etc.
Component Versions	√	√	Provides a display of the individual VCX component version software releases.
Importing Data	√	√	On the VCX Central Manager interface, under the Site Data menu item, use the Import data tab to import users and phone extensions using a comma-separated value file.
User Data LDAP Synchronization with Lotus Domino running on IBM i	√	√	User data stored by a Domino LDAP server running in the IBM i partition can be synchronized with user data stored in the VCX database. For example, an administrator can add a Lotus Notes user and, through the LDAP synchronization process, a VCX Telephone user is automatically created.
User Data LDAP Synchronization with Lotus Domino running on Windows	√	√	User data stored by a Domino LDAP server running in Windows can be synchronized with user data stored in the VCX database.
User Data LDAP Synchronization with Microsoft Active Directory	√	√	User data stored by a Microsoft Active Directory server can be synchronized with user data stored in the VCX database.
Links	√	√	From the main web provisioning interface, administrators can navigate to the VCX Licensing web page and to a page containing VCX documentation. These are accessible from the VCX if it has access to the public internet.
Command Line Interface	√	√	Command Line Interface is available.
Multiple Administrators with concurrent access	√	√	Support for multiple administrators to access system simultaneously.
Password Support, Administrator and System Access	√	√	System supports ability to modify the passwords of all VCX operating system accessible and system administration user ID's and passwords.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Multiple Language Support	√	√	Multiple languages are supported for the administrator web provisioning interface, user web provisioning interface, phone display, and voice mail prompts. Supported languages for system administration include English, French, Latin American Spanish, Italian, and Chinese.
On-Line Administration Help	√	√	On-Line Help for system administration is available using the web provisioning interface.
Root Directory Access	√	√	System provides access to root directory for maintenance only via password-protected login.
Searches	√	√	Support for searching of users by first name, last name, and extension in authentication database.
Partial US 508/ADA Compliant User Provisioning System	√	√	The VCX IP Telephony module supports remote feature programming using the VCX VoIP User web provisioning interface, which allows users to program their features from outside the office. The VCX IP Telephony administration web provisioning interface is not 508/ADA compliant, while the user interface provides partial compliance.
Virtual Numbers	√	√	Virtual Numbers are supported. Media gateways can be deployed anywhere on the IP network and allow the source of the call to be from any location with a media gateway.
VCX Service Licensing	√	√	A means of enforcing that installed systems are legitimately purchased. VCX phone and mailbox licenses are registered to one VCX primary and one VCX secondary server, and cannot be re-assigned except for server RMA.
View VCX Licensing Data	√	√	The VCX supports the ability to view the current assignment of licenses to connected devices via the VCX administration web interface
Add VCX Licenses	√	√	The VCX supports the ability to add licenses to a system via the VCX administration web interface. When new licenses are added to the VCX, a new license activation key is required. The VCX activation key includes a cumulative total of licenses purchased for the server. The licenses on an activation key cannot be re-assigned to another VCX call processor except for RMA.

VCX Quality of Service

The following table lists the major quality of service features supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature description
QOS – 802.1p Tagging (Prioritization)	√	√	Tags IP packets with so that they can be prioritized from other traffic types ensuring high voice quality.
QOS - 802.1Q Tagging (VLAN)	√	√	Enables the administrator to segregate the voice traffic from data traffic to help the data components (switches/routers) optimize the traffic while providing an extra level of security.
DSCP Tagging	√	√	All devices including phones, attendant consoles, VCX servers and gateways tag voice related signaling and media packets with DSCP tagging to facilitate in prioritizing an end to end QOS mechanism
G.711 Audio Codec	√	√	The VCX solution supports the G.711 and G.729ab audio codecs.
G.729ab Audio Codec	√	√	The VCX solution supports the G.729ab audio codecs.
Wideband Audio Codec	√	√	The VCX 3503, 3502, 3501, 3103, 3102B, and 3101B telephones support the G.722.2 wideband codec. Calls between up to 3 of these telephone models use the wideband codec for enhanced audio quality during a conference call, with more than 3 in a conference the phones use G.711.
Dynamic Jitter Buffer	√	√	Both the phones and Gateways support dynamic jitter buffers
Packet Loss Rate	√	√	The phones and gateways are designed to provide acceptable audio quality with packet loss rates of 5-10%
Payload Length	√	√	The system as a whole typically uses 20ms audio frames. Some devices can support larger frames, but as a system 20ms is used
Video Codec	√	√	Convergence Center Client uses the H.263 video codec. VCX Desktop Communicator supports the H.263 and H.264 video codecs.
Video Resolution	√	√	Desktop Communicator and Convergence Center Client uses QCIF and CIF

VCX Security

The following table lists the major security features and functions supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Operating System Security	√	√	The VCX IP Telephony Solution uses the “VCX Linux” operating system. VCX Linux is a full featured, Unix-like operating system built from open source components.
Additional Security	√	√	The VCX IP Telephony Solution runs a version of Linux with additional security measures such as an built-in firewall.
Secure Access	√	√	The VCX IP Telephony solution requires SSH access for administration. Telnet is not supported.
Security - Locking MAC addresses to switches	√	√	Working in conjunction with HP Network Jacks and ethernet switches, HP phone devices can be locked by their MAC addresses to specific locations for additional security.
User Authentication Methods	√	√	VCX’s Provisioning Server supports comprehensive authentication schemes to prevent malicious access to the network.
Network Security Policies	√	√	HP provides a <i>security policy guide</i> telling the customer about common ways to access the system and has recommendations to secure the system in the guide.

VCX Management

The following table lists the major management features and functions supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
IP Phone MIB Enhancement	√	√	IP phones (310x, 350x, or 3rd party devices) can be discovered through VCX Devices on IMC
SNMP v3	√	√	The VCX supports access from network management stations that are running version 3 of the Simple Network Management Protocol (SNMP).
SNMP v1	√	√	The VCX supports access from network management stations that are running version 1 of the Simple Network Management Protocol (SNMP).
Intelligent Management Center Voice Service Manager	√	√	The IMC Voice Service Manager (VSM) can be used to collect, monitor, and report system traps from VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Audio Performance Reporting - Local	√	√	VCX phones with LCD type displays support the ability to display real time and historic audio performance statistics on the LCD.
Quality of Service End of Call Reporting	√	√	VCX IP Telephony supports the ability to collect Quality of Service records, which are then read by the IMC VSM. IMC VSM provides the ability to define thresholds for quality of service measurements, report on the data collected from the VCX, and provide traps when thresholds are crossed. Quality of Service End of Call Reporting is only collected for calls between VCX IP Phone endpoints.
Auto Discovery and Management of IP Devices	√	√	There is SNMP based Auto Discovery of Network Elements and inventory report generation. IMC provides the ability to obtain HP equipment serial numbers and other equipment-specific configuration information via SNMP and TFTP.
System Backups	√	√	Refer to the System Administration System Backups feature description
Centralized Management	√	√	IMV VSM provides centralized management of VCX servers and VCX media gateways.
Operating System Updates	√	√	VCX provides operating system updates as part of regularly scheduled major and maintenance releases
Alarm Notification	√	√	The VCX solution uses SNMP to traps to provide event notification of software components
SNMP MIB Access	√	√	SNMP MIBs are documented in the VCX Maintenance manual
SNMP Traps	√	√	SNMP Traps are documented in the VCX Maintenance manual
Maintenance, Graceful Shutdown of Services	√	√	Graceful shutdown is supported for the IP Telephony and IP Messaging components. Active calls are not terminated. Upon shutdown, all the end points (phones/gateways etc) automatically move to the secondary so that there is no disruption of calls.
Maintenance, Recovery Procedures	√	√	The VCX Maintenance manual documents recovery procedures.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Maintenance, Regular Activities	✓	✓	VCX performs many tasks automatically such as wrap-around log files, system monitoring, and data replication to a redundant system. Manual activities include periodic log file purging and system backups (which could be run automatically via CLI custom cron script).
Maintenance, Graceful Shutdown of Services	✓	✓	Refer to the System Administration Resetting VCX Server feature description
Maintenance, Service Time to Start	✓	✓	The time to start for each VCX server will vary depending on the application(s) and server model. The start up time of a VCX IP Telephony and IP Messaging V7005 server is approximately 5 minutes.
Maintenance, Removal of Previous Versions	✓	✓	Refer to the System Administration Remove Previous Versions feature description
Maintenance, Trunk Maintenance	✓	✓	Trunk maintenance is performed by administrators using the media gateway web interface.
Maintenance, Upgrades	✓	✓	Refer to the System Administration Software Upgrades and Rollbacks feature description

VCX IP Phones

The following table lists the IP Phones supported by VCX 9.5.

Note that the 2102 IP Phones are no longer supported by VCX, but the button mappings functionality remains for legacy users.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
3503 IP Phone	✓	✓	3503 IP Phone provides Gigabit connectivity, a large backlit color display, paper-less labels, up to 8 calls, support for wideband audio, and mapping of up to 21 features
3502 IP Phone	✓	✓	3502 IP Phone provides Gigabit connectivity, a large backlit gray-scale display, paper-less labels, up to 6 calls, support for wideband audio, and mapping of up to 15 features
3501 IP Phone	✓	✓	3501 IP Phone provides Gigabit connectivity, a backlit gray-scale display, paper-less labels, up to 2 calls, support for wideband audio, and mapping of up to 2 features
3500 IP Phone	✓	✓	3500 IP Phone provides Gigabit connectivity, a non-backlit gray-scale display, paper-less labels, up to 2 calls, and mapping of up to 2 features

3500B IP Phone	√	√	3500B IP Phone provides Fast Ethernet connectivity, a non-backlit gray-scale display, paper-less labels, up to 2 calls, and mapping of up to 2 features
3101 Rev A/B Basic IP Phone without Speakerphone	√	√	3101 IP phones provide full VCX feature support with VCX 9.5. Rev A and Rev B phones are supported.
3101 Rev A/B Basic IP Phone with Speakerphone	√	√	3101 IP phones provide full VCX feature support with VCX 9.5. Rev A and Rev B phones are supported.
3102 Rev A/B Business IP Phone	√	√	3102 IP phones provide full VCX feature support with VCX 9.5. Rev A and Rev B phones are supported.
3102 Rev C Backlit Business IP Phone	√	√	310x IP phones provide full VCX feature support with VCX. Rev A and Rev B phones are supported.
103 Rev A/B Manager IP Phone	√	√	3103 IP phones provide full VCX feature support with VCX 9.5. Rev A and Rev B phones are supported.
3105 Rev A/B Attendant Console	√	√	3105 IP phones provide full VCX feature support with VCX 9.5. Rev A and Rev B phones are supported.
Convergence Center Client	√	√	Traditional Convergence Center Client
Desktop Communicator	√	√	VCX Soft Phone with basic and Outlook Edition that has built-in call recording to desk top, instant messenger integration, conferencing, video, and click-to-dial Outlook plugin. Now supports file transfer, Windows 7 32-bit and 64-bit operating systems, MSI installation, and additional user friendly features such as forward typing and searching for company name.

VCX Reporting

The following table lists the primary reporting features and functions supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Accounting Service	√	√	Call Record details are provided on a per-call basis. The VCX Call Processor forwards CDR data to the VCX Accounting Service for each call attempt. The VCX Accounting Service forwards CDR records to the VCX Call Records Service which aggregates CDR records from all Accounting Service instances in the system.
CDR Service	√	√	Call Record details are provided on a per-call basis. The VCX Call Processor forwards CDR data to the VCX Accounting Service for each call attempt. The VCX Accounting Service forwards CDR records to the VCX Call Records Service which aggregates CDR records from all Accounting Service instances in the system.
Call Detail Record Reporting	√	√	CDR Reporting tool that provides robust search and formatting options. The CDR Reporting tool is a Windows-based application that interfaces with the VCX Call Records Server to download CDR records. This tool now runs on Windows 7 32-bit operating systems. ACD Group CDR reports are included.
Site Configuration Data	√	√	The VCX Central Manager web interface includes options that allow a VCX administrator to view a server's current VCX configuration, export that configuration data to a Microsoft Excel file, or import configuration data.
Call Detail Record Structure	√	√	Call Record details are provided on a per-call basis. The VCX Call Processor forwards CDR data to the VCX Accounting Service for each call attempt. The VCX Accounting Service forwards CDR records to the VCX Call Records Service which aggregates CDR records from all Accounting Service instances in the system.

VCX Media Gateways

The following table lists the media gateways supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
MSR as VCX Media Gateway	√	√	The VCX supports MSR models 20-10, 20-11, 20-20, 20-21, 20-40, 30-16, 30-20, 30-40, and 30-60 for use as a media gateway with VCX. The MSR 20-xx models support MSR Smart Interface Cards (SIC). The MSR 30-xx models support MSR SIC and Multi-function Interface Modules (MIM). SIC and MIM modules are available for different densities of FXO, FXS, T1, E1, and BRI.
V7111 Analog Media Gateways	√	√	The VCX supports several analog FXO and FXS media gateway models, including 2 FXS, 4 FXS, 8 FXS, 24 FXS, 4 FXO, 8 FXO, 2/2 FXO/FXS, and 4/4 FXO/FXS.
V7122 Digital Media Gateways	√	√	The VCX supports several digital T1/E1 media gateway models, including 1 span, 2 span, 4 span, 8 span, and 16 span models.
V6000 Branch Office Controller		√	The V6000 is a fixed chassis branch office solution with 4 FXO ports, 2 FXS ports, a CPU, and HDD. The V6000 is not modular like the V6100. The V6000 is used as a Branch Office solution for VCX V7000 that supports up to 100 devices. The V6000 has an optional power supply module and an optional RAID HDD module available. A VCX V6000 Branch Office cannot be deployed standalone, it must be connected to an existing Regional Office.
V6100 Modular Gateway with a mix of analog and digital Modules	√	√	The V6100 is a modular media gateway that supports up to six modules. The modules that are available include: 1, 2, or 4 port T1/E1 digital modules, 4 port BRI digital module, 4 port FXO module, and a 4 port FXS module. The V6100 supports a mix of analog FXO/FXS modules, 1 or 2 port T1/E1 digital modules, or 4 port BRI digital modules, up to 120 voice channels maximum per chassis. There is a maximum of 4 T1/E1 ports allowed on the V6100. When 4 T1/E1 ports are required, there can be no analog or BRI modules. For VCX Connect, the V6100 is used only as a media gateway and does not require nor support the optional CPU or HDD modules.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Basic Rate Interface (BRI) Module for VCX Connect 100 and V6100	√	√	<p>The VCX IP Telephony Solution supports Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) media gateway solution for Point to Point and Point to Multi Point ISDN BRI Terminal Equipment (TE) connections. The VCX BRI gateway solution is a 4 port module for use in VCX Connect 100 (3CRC100A or 3CRC101A) or V6100. Supports 4 physical ports to yield 8 channels of BRI, with a maximum of 5 modules (40 Voice channels) per VCX Connect 100 or V6100 chassis. BRI modules on VCX Connect 100 and V6100 are supported to function only in "Terminal Equipment" (TE) mode, not in "Network Termination" (NT) mode (ISDN phones/fax machines cannot be connected to the BRI interface). The BRI modules support Point To Point and Point to Multi Point ISDN BRI connections.</p>

VCX IP Telephony Features

VCX IP Telephony Calling Features

The following table lists the major VCX IP Telephony calling features supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Anonymous All	✓	✓	The Anonymous All feature gives the user the ability to set their privacy status so that from that point forward when they place calls their calling party name is "Anonymous".
Anonymous Next	✓	✓	The Anonymous Next feature gives the user the ability to set their privacy status so that for the next outgoing call only their calling party name is "Anonymous".
Anonymous Call Reject	✓	✓	Gives the user the ability to block anonymous incoming calls.
Attendant Console, 3105 Phone	✓	✓	Support for hardware attendant console complementing the phone. The console provides busy line field indication and speed dials for up to 100 extensions, allows the operator to initiate transfers or serial transfers, conferences, call parks and call holds directly through the console via programmable keys.
Automatic Call Distribution	✓	✓	VCX IP Telephony supports integrated Automatic Call Distribution (ACD) native to the platform. Refer to the ACD Group section for details.
Automatic Line Selection (Multiple System Appearance)	✓	✓	Multiple appearances of the same phone number. Allows the user to automatically answer a predetermined line by lifting the handset or pressing a mapped button. The number of system appearances (lines available for making or receiving calls) on a phone can be limited by the system administrator. The maximum number of system appearances for a 3101 phone is 2, and the maximum is 9 for 3102 and 3103 phones. The 350x IP Phones do not support the ability to map buttons to system appearances.
Bridged Line Appearances	✓	✓	The same phone number (primary) can appear and be answered on multiple phone sets (secondary) including 3102 and 3103 phones. One primary phone can give permission for up to 4 extensions to bridge to their number. A secondary phone can bridge to up to 5 primary phone numbers. The 3503 and 3502 IP Phones support up to 4 bridged line appearances.
Bridged Line Appearance MWI	✓	✓	The bridged phone's message waiting status is available on the display.
Bridged Line Appearance Shared Hold	✓	✓	Allows the user to see hold appearance (steady blink) of a bridged line and for any user with bridge permission to pick up the line from hold.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Busy Lamp Field	√	√	Allows users to map a button to their phone to display the busy line field status of another extension and providing a speed dial to that extension. Up to 12 BLF's can be mapped to a 3102B/C IP phone, up to 8 on 3103A/B, up to 9 on 3102A, and 0 on 3101A/B. BLF support over SIP Trunks and BLF support for remote phones is also available.
Call Conference Three Way Calling	√	√	Audio path for multiple parties on single call, established just via user keystrokes, no outside intervention. Three way conferences are allowed.
Call Conference Six Way Calling	√	√	Phone users can create conference calls that include up to 6 participants (including initiator) without an external conference server. Supports up to five 6 party conferences per call processor.
Call Conference Drop	√	√	Terminate the last party to join a call conference without hanging up the receiver, leaving the other party on the call.
Call Coverage	√	√	Ability to define how calls are handled when "all else fails". Options include: go to voice mail, go to an auto attendant, go to another phone number (VCX prevents loops on call forwarding).
Call Drop	√	√	Terminate the call without hanging up the receiver.
Call Duration Display	√	√	Display the duration of the call on the terminal.
Call Forward All (Universal)	√	√	User can direct all calls to another station or location also known as call forward universal.
Call Forward Busy	√	√	User can redirect calls to another station or location when busy.
Call Forward No Answer	√	√	User can redirect calls to another station or location after specified number of rings.
Call Forward Out of Coverage	√	√	When a call coverage point has forwarding enabled, VCX can either honor call forwarding rules of call coverage point or of the original called party (default).
Call Forward Programmable	√	√	Call forward can be programmed on the phone either via a soft key or button.
Call Forward Reminder	√	√	Reminds user through LCD display that they have calls forwarded to another number or voicemail.
Call Forward Remote	√	√	Another user on Access Control List can remotely call forward another user's phone from their own phone.
Call History (Missed, Answered, Placed Logs)	√	√	User can view the last ten missed calls, answered calls and dialed calls through the LCD on the phone or VCX web user interface.
Call History Display Sort	√	√	The sort order defaults to Newest first and can be changed via phone soft keys to either Newest First or Oldest First.
Call Hold	√	√	A button on phone set that places incoming call on hold, retrieves call.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Call Hold Reminder	√	√	User is reminded of a held call with an audible beep after the configurable amount of time.
Call Park/Retrieve	√	√	A user can put a call on "hold" (to a virtual extension) and then pick up from another phone in the system. The system also supports park timeouts when the call will come back to the original device.
Call Park Fallback	√	√	The call comes back to the original party once the park timer expires.
Call Park Button Mapping	√	√	Call park numbers can be mapped to buttons on VCX IP phones. The status lights associated with the phone buttons then indicate whether the call park extension is being used.
Call Pickup Group	√	√	Allows a user to answer a call ringing on another extension where both extensions are part of a pickup group. Calls are picked by oldest ringing call within the group. There can be up to 75 members per call pickup group and up to 200 call pickup groups per site (call processor), with up to 200 memberships per user. Access to the pickup group can be granted to non-members.
Call Restrictions, Black List	√	√	Gives the user the ability to block incoming and outgoing calls based on specific numbers or patterns - same as call restrictions/ Call Blocking.
Call Restrictions, Blocking Inbound	√	√	Allows users to selectively restrict/permit incoming calls from user-defined origins (e.g. specific extensions, ANIs, off-net calls in general).
Call Restrictions, Blocking Outbound	√	√	Allows users to selectively restrict/permit outgoing calls to user-defined destinations (e.g. specific extensions, ANIs, off-net calls in general).
Call Restrictions, Call Screening	√	√	Allows users to selectively restrict/permit incoming calls from user-defined origins (e.g. specific extensions, ANIs, off-net calls in general).
Call Restrictions, Forward to Trunk	√	√	Can restrict call forwards by phones and users based on class of service settings and black/white lists.
Call Restrictions, Toll Screening	√	√	Access list to restrict the users ability to make toll calls (Class of Service Feature).
Call Restrictions, Transfer to Trunk	√	√	Can restrict call transfers by phones and users based on class of service settings and black/white lists.
Call Restrictions, White List	√	√	Ability for user to configure a "Permit" list for incoming calls - Part of Call Restrictions.
Call Return	√	√	Calls back the last incoming number.
Call Transfer, Attended	√	√	Redirect an answered call to another user after announcing the caller. This includes restrictions on trunk-to-trunk transfers, etc.
Call Transfer, Unattended	√	√	Blindly redirect an answered call to another user.
Call Transfer, Fallback	√	√	Prevents callers from being dropped due to transfer failures by transferring the call back to the station which initiated the transfer.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Call Waiting	✓	✓	Users can configure their phones to flash instead of playing a waiting tone when calls arrive while the users are on a call and at least one System Appearance line is available. The waiting tone can be configured as a single, double, triple tone, or “no ring”. Users can also configure their phones to play a double beep over the speaker or to play a double beep over the currently active device (handset, headset, or speaker). The call waiting tone plays once for each incoming call.
Called Party ID	✓	✓	Display the number of the called party.
Caller ID, Calling Party Number	✓	✓	Display the name of the calling party.
Caller ID, Calling Party Name	✓	✓	Display the name and/or number of the calling party.
Caller ID, Privacy	✓	✓	Allows caller identification (ID and name) to be delivered within the VCX while maintaining privacy outside the trusted network. This uses the SIP P-Asserted-Identity field.
Camp On Busy (Automatic Call Back)	✓	✓	Allows users to wait on line (in queue) if the requested resource (called party) is busy for transferred calls and new calls. It connects the users in queue by calling them back - on a first-come, first-served basis - when the requested resource becomes available.
Class of Service Override	✓	✓	Ability for a user to override a class of service (COS) restriction that may be defined for a particular extension.
Customer Accounting and Billing Codes	✓	✓	VCX IP Telephony supports the ability for users to enter Customer Accounting and Billing Codes (CABC), giving them the ability to manage client calls based on codes. CABC uses feature code 777 and is supported from VCX IP Phones, soft phones, or analog phones. CABC supports VCX multi site, importing via .cvs file, and entering multiple CABC’s during one call with a separate CDR for each CABC. VCX supports up to 10,000 CABC’s per region (including branches), up to 1,000 roaming CABC’s per region (including branches), and up to 10,000 roaming CABCs per enterprise
Delayed or No Ringing Options	✓	✓	System administrators can configure delayed ringing or No Ring option for phones, ACD Groups, Hunt Groups and Bridged phone Line Appearances. In either case, the appropriate status light begins flashing as soon as the call arrives.
Directed Call Pickup	✓	✓	Enables the user to pick up a call ringing on their phone from another phone by feature code 455 and an authorization code.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Directory, Local User	√	√	The local user directory is available on the phone and through the user web portal. The phone directory is searchable and can be used directly to initiate calls.
Directory, Global User	√	√	The enterprise-wide user directory is available on the phone and through the user web portal. The phone directory is searchable and can be used directly to initiate calls.
Distinctive Ringing, Ring Patterns (Different Types of Calls)	√	√	The user can choose multiple ring patterns for different calls uniquely identifying different call types.
Distinctive Ringing, Selective Ringing (Ident-A-Call)	√	√	Ring with different characteristics based on whether a call is internal, external, private, hunt group, or bridged call. Telephone profiles can be configured with a default ring tone for each type of call.
Do not disturb	√	√	Used to route all incoming calls to the call coverage point defined for the phone without ringing the device.
DTMF Dialing	√	√	End-to-end DTMF signaling supported via SIP RFC 2833.
Feature Access Codes	√	√	Feature access codes allow (a subset of) VCX calling features to be used from an analog phone connected to an FXS media gateway.
Feature Codes	√	√	Feature codes allow the VCX calling features to be used from any VCX SIP phone.
Forced Account Codes	√	√	VCX supports the ability for users to enter Forced Account Codes (FAC) to access dialing privileges. Forced account codes (FAC) are special digit sequences of 2-16 digits that are used to control external calls. Forced account codes enforce and regulate the types of calls users can place based on the associated Class of Service. FAC's can be flagged as roaming, which allows them to be used at any call processor in the system. The feature code for Forced Account Codes is 888 and can be accessed from VCX IP Phones, soft phones, or analog phones. FAC's can be imported from a .csv file. VCX supports up to 10,000 FAC's per region (including branches), up to 1,000 roaming FAC's per region (including branches), and up to 10,000 roaming FAC's per enterprise.
Forward to Mail	√	√	Automatically redirects all calls to voicemail with a single button push.
Hands Free Support	√	√	Incoming calls will be auto answered in the hands free mode and the call will be answered on the speaker phone after a audible beep.
Hotline (hot ring down circuits)	√	√	The phone connects to a predetermined number as soon as the user picks up the phone. Feature used often in elevators, common hotel areas etc.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Hunt Groups	√	√	VCX IP Telephony supports hunt groups native to the platform. Supports linear, circular, and calling group types. Up to 75 members can be logged into a hunt group, and there can be up to 150 hunt groups per site.
Hunt Groups (Login/Logout)	√	√	Provide log-in functionality with screen appearance for MWI for group messages.
Hunt Groups, Linear	√	√	Single pass through a list of members, with call coverage to a hunt group mailbox.
Hunt Groups, Circular	√	√	A cyclic pass through a list of members with timeout, and call coverage to a hunt group mailbox.
Hunt Groups, Calling Group	√	√	Simultaneous ringing to all members of a list with timeout, and call coverage to a hunt group mailbox.
Hunt Groups, Call Coverage	√	√	VCX hunt groups have their own call coverage path with multiple options and a unique voicemail box number. System administrators can configure the coverage of hunt group calls based on date, time of day, or day of the week.
Hunt Groups, Feature Interactions	√	√	Provides strong interaction with other VCX features, improving the experience for administrators, hunt group members, and callers.
Hunt Groups, Bridged Line Appearance	√	√	A primary or a secondary bridged phone can be part of a hunt group.
Hunt Groups, Malicious Call Trace	√	√	Hunt group members who initiate a Malicious Call trace are now automatically logged out of all hunt groups to optimize MCT call handling. Although logged out of the hunt group, the member phone can still received direct-dialed extension calls.
Hunt Groups, Message Waiting Indicator	√	√	Allows Hunt Group users to see the MWI and message status and retrieve contents for their own personal mailbox and hunt group mailboxes. Hunt group members have the ability on their phone to monitor MWI and message status, and to login/connect to that mailbox and retrieve the contents.
Hunt Groups, View Hunt Group Status	√	√	Allows users to view hunt group status using phone display.
Last Number Redial	√	√	Button causes last call to be re-dialed.
Malicious Call Trace	√	√	Calls received can be marked as malicious via feature code entry. SNMP trap is sent and CDR is marked as malicious. Special message is sent to the gateway (if call is from the PSTN) to alert authorities of the problem.
Message Waiting Indication (MWI), Audio	√	√	Message waiting indication on the phones when a handset goes offhook indicates new messages.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Messaging Waiting Indicator (MWI), Visual	✓	✓	A visual indicator of a voicemail message, (i.e. blinking lamp). VCX provides message count information on the phone displays.
Missed Call Indicator	✓	✓	Lists missed calls with ability to callback with press of a button.
Mobility, Single Region Hot Desking	✓	✓	Ability for the user to login in from any IP terminal anywhere in the network and get the same feature set as his primary phone.
Mobility, Multi Site Hot Desking	✓	✓	A user who is visiting a branch office or regional office in a multi site VCX system can log in, using their home site extension to a phone located at the remote branch or regional office. If the user places an emergency call from the remote site, the call will indicate the site at which the user is located. This feature requires appropriate system configuration by system administrator.
Music on hold	✓	✓	A caller hears music when placed on hold, and this can be configured per phone profile.
Mute	✓	✓	A mute button to disable the microphone.
Paging, Analog External Paging System	✓	✓	VCX can interface to an external paging system via an analog FXS media gateway for zone paging or all-page requirements. This allows users to dial an extension and then page overhead. Analog end points cannot be part of a page group.
Paging, SIP External Paging System	✓	✓	VCX can interface to an external paging system via 3rd party SIP speakers for zone paging or all-page requirements. This allows users to dial an extension and then page overhead to SIP speakers that can be part of a page group.
Paging, Phone to Phone (Send Beep with Calling Number)	✓	✓	Beep page can be sent to another user with feature code. The called party will see the calling name along with a beep.
Paging, Group (Zone)	✓	✓	A caller can broadcast a message to other phones that are members of the same paging group. There can be up to 300 members per group and up to 100 groups per site.
Phone Lock/Unlock	✓	✓	The lock/unlock feature allows a VCX phone to be locked by the user to disallow outgoing external calls and to unlock the phone, if it is already locked. The lock/unlock feature allows the following outgoing calls even when locked: Emergency calls and internal calls within VCX or as defined in Class of Service (COS).
Power Fail Transfer Station Support	✓	✓	VCX supports lifeline services on each analog gateway by automatically cutting through a single analog line in case of power failure.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Privacy, Calling Number Suppression	√	√	Ability for the user to suppress caller ID information for outgoing calls. Outgoing caller ID can be suppressed for all calls or the next call.
Privacy, Block Silent Monitor/Barge-in	√	√	Allows users to make private calls that are not able to be monitored.
Serial Calling (Transfer with Callback)	√	√	Serial Calling enables calls to land back to the originator after the call is disconnected by the third party. Can be mapped to an attendant console function button.
Silent Monitor/ Barge-In	√	√	Provides interactive user interface on phones to allow silent monitor & barge-in features.
Simultaneous Ringing	√	√	Multiple phones with the same extension will ring simultaneously.
Speed Dial, Personal	√	√	Provides up to 9 personal speed dial numbers provisioned on phone or web interface. Ability to speed dial either through buttons on the phone or through feature codes.
Speed Dial, System	√	√	Provides up to 9,999 system speed dial numbers, configurable by administrator only. Can be viewed in the phones, user provisioning or system provisioning screens. Can be mapped to a button and dialed through the phone LCD using the scroll keys or through feature code.
Transfer to voicemail, Direct	√	√	Allows users to transfer a caller directly to the mailbox of any other user on the system.
Voice Mail access	√	√	Allows users to access a voice mail system to allow logging into their mailbox.
Warmline (warm ring down circuits)	√	√	The phone connects to a predetermined number if the user picks up the phone and does not dial a number within a pre-determined period of time.

VCX IP Telephony ACD Group Features

The following table lists the major VCX IP Telephony ACD Group features supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
ACD Groups, Linear	√	√	VCX supports Linear ACD Groups that connect callers with an available ACD Agent by queuing calls and going through a single pass through a list of ACD Agents.
ACD Groups, Circular	√	√	VCX supports Circular ACD Groups that connect callers with an available ACD Agent by queuing calls and using a cyclic pass through a list of ACD Agents with a per-device timeout and total timeout.
ACD Groups, Calling Group	√	√	VCX supports Calling ACD Groups that simultaneously ring all agents of a list with call coverage after total timeout.
ACD Groups, Least Call Count	√	√	VCX supports Least Call Count ACD Groups that connect callers with an available ACD Agent by queuing calls and routing them to the agents that have handled the least number of calls first.
ACD Groups, Most Idle Agent	√	√	VCX supports Most Idle Agent ACD Groups that connect callers with an available ACD Agent by queuing calls and routing them to the agents that have been idle the longest first.
Multi Site ACD Group	√	√	ACD group agents may be local (same site) extensions, and / or remote (other site) extensions
ACD Group Phone Display	√	√	VCX ACD Groups support the display on an ACD Agent's phone of the ACD Group name and number for a ringing call and the calling party name and number when connected. In addition, an ACD Agent can view ACD Group login status and queue notifications on the phone display.
ACD Group Voice Mailbox	√	√	VCX ACD Groups support the provisioning of a voice mailbox associated with each ACD Group that provides all the functions of a common mailbox. ACD Agents will get a Message Waiting Indicator on their phone when a new message is left in the mailbox, and ACD Agents have access to the ACD Group mailbox by selecting the mailbox number from a list on their phone.
ACD Agents	√	√	The VCX supports ACD Agents which are phone extensions that are logged into an ACD Group. ACD Groups get their ACD Agent members from a list of ACD Agents, and ACD Agents can be assigned to multiple ACD Groups. Each ACD Agent requires a VCX ACD Agent license to be purchased and installed on the VCX.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
ACD Agent Licenses	✓	✓	The VCX requires that an ACD Agent license be purchased for each individual phone extension that is assigned as an ACD Agent. The VCX server Right To U (RTU) license includes 2 “try and buy” ACD Agents by default, which are over-written when actual ACD Agent licenses are installed onto the system. ACD Agent licenses are available on an individual basis or groups of 5 or 10.
ACD Agent Login/Logout	✓	✓	The VCX supports the ability to login and logout an ACD Agent by an administrator using the web administration interface or by an ACD Agent using the phone or web user interface.
ACD Agent Multi-Group Memberships	✓	✓	VCX ACD Agents can be assigned to one or more ACD Groups, up to a maximum of 25 total ACD Groups and Hunt Groups combined for both internal and external ACD/Hunt Groups.
ACD Agent Message Waiting Indicator	✓	✓	VCX provides Message Waiting Indicator (MWI) to ACD Agents who are assigned to ACD Groups with new messages waiting in the ACD Group mailbox. ACD Group members have the ability on their phone to monitor MWI and message status, and to login/connect to that mailbox and retrieve the contents.
ACD Agent Ranking	✓	✓	The VCX supports the ability to rank ACD Agents in the order they are to receive incoming calls to the ACD Group. ACD Group ranking is applicable to Linear and Circular ACD Groups only.
View ACD Group Status	✓	✓	The VCX supports the ability for ACD Agents to view their login status of the ACD Groups of which they are members of using the web user interface or on VCX IP phones with an LCD display.
ACD Agent Auto-Logout On No Answer	✓	✓	The VCX supports the ability for an administrator to configure an ACD Group to automatically log an ACD Agent out of an ACD Group if the agent does not answer an incoming call to the ACD Group.
ACD Agent Wrap Up Mode	✓	✓	VCX ACD Groups support the ability for ACD Agents to have time after a call to wrap up their work for that call. Wrap up mode is configurable by administrators using the web administration interface on a per ACD Group basis. VCX supports the ability to define the wrap up time duration (0 - 999 seconds) and the number of times (0 – 5) the wrap up duration can be extended by an ACD Agent.
ACD Agent Extend Wrap Up	✓	✓	VCX ACD Groups support the ability for ACD Agents to extend the wrap up time after a call to wrap up their work for that call. The number of wrap up time extensions is configurable by administrators using the web administration interface on a per ACD Group basis. The number of times that a wrap up session can be extended can be from 0 to 5.



VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
ACD Agent Override Wrap Up	✓	✓	VCX ACD Agents have the ability to override the wrap up time duration when they have completed the post-call processing work in a time shorter than the wrap up time by pressing a programmed button on the VCX IP phone or directly by entering feature code 974 to cancel the wrap-up status and immediately enabled routing of new ACD Group incoming calls to the agent.
ACD Group Timeouts	✓	✓	VCX ACD Groups support configuration by administrators for ACD Group durations such as per-device timeout, total timeout, and override total timeout parameters using the web administration interface. The ACD Group type (Linear, Circular, Calling, Least Call Count, and Most Idle Agent) affects how the parameters are used.
ACD Group Call Coverage	✓	✓	VCX ACD Groups supports the ability for calls to be routed to a call coverage path for each ACD Group based on specific date, day of week, or time of day for conditions when the ACD Group's operational hours are closed, all agents are busy, there are no agents configured, or if all agents are logged out. The call coverage path can be configured to be a mailbox, another ACD/Hunt Group, an individual extension, an auto attendant number, or an external phone number.
ACD Group Class of Service	✓	✓	VCX ACD Groups support a Class of Service setting for each ACD Group that specifies whether calls are allowed or disallowed based upon the elements (patterns) in the specified Class of Service.
ACD Group Off Site Notification	✓	✓	The VCX supports the ability to provide off site notification when calls to an ACD Group are not answered.
ACD Group Queue Notification	✓	✓	VCX ACD Groups support the ability to alert ACD Agents with a message on their phone display when queued calls exceed a configurable threshold, based on number of calls in queue or how long a call has been in queue.
ACD Group Selective Ringing	✓	✓	The VCX supports the ability for administrators and ACD Agents to configure Selective Ringing patterns for ACD Group calls on a per phone basis.
ACD Group Delayed Ringing	✓	✓	The VCX supports the ability for administrators and ACD Agents to configure Delayed Ringing for ACD Group calls on a per phone basis.
ACD Group No Ringing	✓	✓	The VCX supports the ability for administrators and ACD Agents to configure No Ringing for ACD Group calls on a per phone basis.
ACD Operational Hours	✓	✓	VCX ACD Groups support the ability to configure the operational hours of the ACD Group, including always open, custom hours open during up to 4 shifts, and emergency open and close.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
ACD Custom Hours	✓	✓	VCX ACD Groups support the ability for administrators to configure the operational hours of the ACD Group, including custom hours open during up to 4 shifts.
ACD Group State	✓	✓	VCX ACD Groups support the ability for administrators to manually set the operational state of an ACD Group using Emergency Open or Emergency Close.
ACD Group Music On Hold Announcement	✓	✓	VCX ACD Groups support the ability to assign a Music on Hold announcement to each ACD Group. The Music On Hold announcement can be configured to play from the start or at random points.
ACD Group Delayed Announcements	✓	✓	VCX ACD Groups support Delayed Announcements which is a series of messages heard by callers while waiting in an ACD queue. There can be up to 15 announcements per ACD Group, which are configurable using the IP Messaging web administration interface. ACD Group Delayed Announcements also include in queue digits, estimated waiting time, and position in queue announcements.
ACD Group Closed Announcement	✓	✓	VCX ACD Groups support a configurable Closed Announcement for each ACD Group that callers when an ACD Group's operational hours are closed.
ACD Group In Queue Digits	✓	✓	VCX ACD Groups support In Queue Digit processing where callers can press a digit while waiting in queue to transfer to a mailbox or a phone.
ACD Group Estimated Wait Time Announcements	✓	✓	VCX ACD Groups support the ability to inform a caller in queue of the estimated wait time. Administrators can enable the Estimated Wait Time notification function to tell the caller how long they have to wait before the call is answered.
ACD Group Position In Queue Announcements	✓	✓	VCX ACD Groups support Position In Queue Announcements that are enabled by administrators for callers to hear their position in the queue. PIQ Announcements are configured as part of an ACD Group Delayed Announcement.
ACD Group Endpoint Support	✓	✓	The VCX supports these devices as endpoints for ACD Agents: 350x, 3101, 3102, and 3103 IP Phones, Desktop Communicator (Basic and Outlook Edition), 3 rd party SIP phones, and analog FXS endpoints (3 rd party and analog phone key presses and displays may be different from VCX phones).
ACD Group Feature Interactions	✓	✓	The VCX ACD Group feature provides strong interaction with other VCX features, improving the experience for administrators, ACD Group members, and callers.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
ACD Group Real Time Statistics	√	√	The VCX supports the ability to maintain, update, and display ACD Group Real Time Statistics for ACD Group administrators and/or managers. The display of ACD Group Real Time Statistics is available using the ACD Group Real Time Statistics Windows-based application or a 3 rd party that is receiving the ACD Group data over a TCP/IP port in XML or ASCII format. The ACD Real Time Statistics tool now runs on Windows 7 32-bit operating systems.
ACD Group CDR Reports	√	√	The VCX supports the collection and generation of historical Call Detail Record reports for ACD Groups. ACD Group data is included in regular VCX Call Detail Record (CDR) data, which can be reported on using the Call Detail Record Windows-based application. ACD Group CDR reports are included.
ACD Group Feature Codes	√	√	The VCX supports the ability for ACD Agents and supervisors to login, logout, view/modify ACD Group login status, extend wrap up time, or override wrap up time.

VCX IP Telephony Routing Features

The following table lists the major administration features and functions supported by VCX 9.5.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Calendar Bands	√	√	VCX supports the ability to define calendar bands that will appear as choices in Event Pre-Defined Call Coverage Rules.
Call Admission Control	√	√	Call Admission Control (CAC) is used to prevent congestion in media Traffic. It is a preventive Congestion Control Procedure used in the Call Setup phase. Call Admission Control (CAC) is primarily aimed at monitoring and controlling bandwidth usage for groups of IP endpoints that share common bandwidth resource. The secondary server can now be configured for CAC and perform its functions.
Call Blocking	√	√	VCX supports Call Blocking which blocks calls to a specific number or a specific numbering plan. Due to the flexibility of the dial plan, essentially any calling pattern can be blocked throughout the entire system.
Day Time Bands	√	√	VCX supports the ability to define day time bands that will appear as choices in Weekly Day Time Pre-Defined Call Coverage Rules.
Dialing Prefixes	√	√	VCX supports Dialing Prefixes which allows for the use of country specific prefixes used for make local/national/international calls. E.g. 011 is used as a prefix in North America for making international calls.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Direct Inward Dialing (DID)	√	√	VCX supports Direct Inward Dialing (DID) on the digital media gateways and analog media gateways. DID connects calls from the PSTN directly to a dialed extension number without attendant assistance. Specialized DID trunk circuits from the service provider are required to implement this feature.
Direct Outward Dialing (DOD)	√	√	VCX supports Direct Outward Dialing (DOD) on the digital media gateways and analog media gateways. The DOD feature allows users to access the PSTN without attendant assistance. The flexibility of the VCX dial plan configuration allows administrators to define how users will dial DOD numbers, such as 9+.
DNIS (Dialed Number Identification Service)	√	√	VCX supports DNIS which identifies the dialed number. The VCX IP Telephony module receives the DNIS (called number) in the SIP Invite message from a VCX media gateway, which receives the DNIS from the adjacent switch using the configured signaling method.
E.164 Numbering Plan	√	√	VCX supports the E.164 numbering plan, which includes support for international numbering plans.
End Points	√	√	VCX supports the ability to define end points, which are IP addresses of where to send patterns.
External Directory Access	√	√	VCX supports the ability to route callers to external directory services, such as dialing "411" or "9411".
Holidays	√	√	VCX supports the ability to define holidays that will appear as choices in Holiday Pre-Defined Call Coverage Rules.
NANP Support	√	√	VCX supports the 7/10/11 digit North American Numbering Plan (NANP). VCX provides a highly flexible digit analysis and pattern matching service that enables variable length numbering plans. The pattern matching can support variable length numbering plans from 1 to 21 digits.
Network Abbreviated Dialing	√	√	VCX supports routing of abbreviated numbers for reaching a specific network facility.
Number Translations	√	√	VCX supports number translations, which modifies (by adding digits to or subtracting digits from) a dialed number based on the pattern of the dialed number.
Outdial Patterns	√	√	VCX supports the ability to perform digit manipulation on patterns before they are sent to an endpoint.
Patterns	√	√	VCX supports the ability to create patterns that define what digit or digits to act upon.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Prioritization of Trunks/Routes	√	√	VCX supports the ability to assign different priorities to trunks/endpoints.
Private Line Service	√	√	VCX supports the ability to assign private Central Office lines to selected IP phone sets or analog phones (via an FXS gateway).
Requestors	√	√	VCX supports the ability to define requestors, which are usually Tier 1 (for example, a gateway) or Tier 2 (for example, a call controller) components used as source-based input parameters for destination number routing and number translation.
Routes	√	√	VCX supports the ability to define routes, which consist of one or more endpoints with assigned priorities, the pattern that route to them, and outdial patterns as needed.
Route Plans	√	√	VCX supports the ability to define route plans, which consist of one or more endpoints with assigned priorities, the pattern that route to them, and outdial patterns as needed. Route Plans give administrators the ability to assign source based routing, holiday, week day bands, day time bands, or calendar bands.
Route Plan Wizard	√	√	VCX supports the ability to use a web-based wizard that guides an administrator through the process of creating route plans, which consist of one or more endpoints with assigned priorities and the pattern that route to them.
Routing, Alternate	√	√	VCX supports the ability to provide alternate routes to reach the same endpoint. The VCX solution supports alternate route selection when multiple routes can be chosen for a call.
Routing, Blacklist	√	√	VCX supports the ability to Blacklist (restrict) incoming and outgoing patterns.
Routing, Call Coverage	√	√	VCX supports Call Coverage of source based route plans on an indirect requestor, phone profile, holiday, week day band, day time band, or calendar band basis.
Routing, First Available	√	√	VCX supports routing to the first available end point. The first endpoint in the list will always be selected unless it is busy and in such a case, the subsequent endpoint will be selected.
Routing, Global Directory	√	√	VCX supports the ability to route calls between VCX Regional Offices and VCX Branch Offices using the VCX Global Directory.
Routing, IP to PSTN	√	√	VCX supports creating routes to make calls to PSTN destinations.
Routing, IP to IP	√	√	VCX supports creating routes to make calls between IP destinations.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Routing, Least Cost	√	√	VCX supports least cost routing through configuring the needed set of NPA or NPA/NXX combinations and setting the priority of each route. Least Cost Routing is used to assign cost to routes and find routes based on lowest route. The system will always try the highest priority route first. The VCX is able to screen up to 28-digits in order to determine how the call is to be routed.
Routing, PSTN to IP	√	√	VCX supports the ability to create routes from the PSTN to internal VCX IP destinations, which can be IP phone sets or analog devices connected to FXS ports.
Routing, Source Based	√	√	VCX supports the ability to route calls based on IP address, phone profile, holiday, day/time Band, week day band, or calendar band.
Routing, VPN Numbering Plan	√	√	VCX supports the ability to create and use 3-7 digit private numbering plans.
Routing, Whitelist	√	√	VCX supports the ability to Whitelist (allow) incoming and outgoing patterns.
Trusted End Points	√	√	VCX supports the ability to define Trusted End Points using the VCX web administration interface.
Week Day Bands	√	√	VCX supports the ability to define week day bands that will appear as choices in Weekly Week Days Pre-Defined Call Coverage Rules.

VCX Multi Site Features

A VCX multi site feature provides feature transparency across multiple VCX call processors within a VCX system, including multi region configurations. The VCX Global Directory service provides the functionality on each VCX call processor that enables multi site call routing features. On the web provisioning screens, those features that allow you to assign “External” phone numbers are multi site features.

A yellow highlight indicates new feature functionality from the previous release.

VCX Multi Site Calling Features

The following table lists the major VCX supported IP Telephony calling features, and indicates if the feature supports VCX multi site functionality.

VCX 9.5 Feature Name	VCX 9.5 Multi Site Feature? (Yes/No)
3103 IP Phone Select Button	Yes
Anonymous Call Reject	Yes
Answering Machine and call progress tone detection	Yes
ACD Groups	Yes
Bridged Line Appearance	No
Bridged Line Appearance, MWI	No
Bridged Line Appearance, Shared Hold	No
Busy Lamp Field	Yes
Multiple System Appearance (of same extension)	Yes
Call Conference, Three Way Calling	Yes
Call Conference, Six Way Calling	Yes
Call Conference, Drop	Yes
Call Coverage	Yes
Call Drop	Yes
Call Duration Display	Yes
Call Forward All	Yes
Call Forward Busy	Yes
Call Forward No Answer	Yes
Call Forward Out of Coverage	Yes
Call Forward Programmable	Yes
Call Forward Reminder	Yes
Call Forward Remote	Yes
Call History (Missed, Answered, Placed Logs)	Yes
Call Logs Display Sort	Yes
Call Hold	Yes
Call Hold Reminder	Yes
Call Park/Retrieve	No
Call Park, Fallback	No

VCX 9.5 Feature Name	VCX 9.5 Multi Site Feature? (Yes/No)
Call Park, Button Mapping	No
Call Pickup, Directed	No
Call Pickup, Group	No
Call Restrictions, Blocking Inbound	Yes
Call Restrictions, Blocking Outbound	Yes
Call Restrictions, Call Screening	Yes
Call Restrictions, Toll Screening	Yes
Call Restrictions, Black List	Yes
Call Restrictions, White List	Yes
Call Restrictions, Forward to Trunk	Yes
Call Restrictions, Transfer to Trunk	Yes
Call Return	Yes
Call Transfer, Attended	Yes
Call Transfer, Unattended	Yes
Call Transfer, Fallback on Transfer Failure	Yes
Call Transfer, Restrictions	Yes
Call Waiting	Yes
Called ID, Called Party	Yes
Caller ID, Calling Party Number	Yes
Caller ID, Calling Party Name	Yes
Caller ID, Privacy	Yes
Camp On Busy (Automatic Call Back)	Yes
Class of Service Override	Yes
Customer Account and Billing Codes (CABC)	Yes
Delayed or No Ringing	Yes
Distinctive Ringing, Ring Patterns (Different Types of Calls)	Yes
Distinctive Ringing, Selective Ringing (Ident-A-Call)	Yes
Do not disturb	Yes
DTMF Dialing	Yes
Feature Codes	No
Feature Access Codes	No
Forced Account Codes (FAC)	Yes
Forward to Mail	Yes
Directory, Local User	Yes
Directory, Global User	Yes
Hands Free Support	Yes
Hotline (hot ring down circuits)	Yes
Hunt Groups	Yes

VCX 9.5 Feature Name	VCX 9.5 Multi Site Feature? (Yes/No)
Hunt Groups, Login	Yes
Hunt Groups, Linear	Yes
Hunt Groups, Circular	Yes
Hunt Groups, Calling Group	Yes
Hunt Groups, Feature Interactions	Yes
Hunt Groups, View Hunt Group Status	Yes
Hunt Groups, Malicious Call Trace	Yes
Hunt Groups, MWI	Yes
Hunt Groups, Call Coverage	Yes
Last Number Redial	Yes
Malicious Call Trace	Yes
Message Waiting Indication (MWI), Audio	Yes
Messaging Waiting Indicator (MWI), Visual	Yes
Missed Call Indicator	Yes
Mobility, Single Region Hot Desking	Yes
Mobility, Multi Site Hot Desking	Yes
Music on hold	Yes
Mute	Yes
Paging, Analog External Paging System	No
Paging, SIP External Paging System	No
Paging, Phone to Phone (Send Beep with Calling Number)	No
Paging, Group (Zone)	No
Phone Lock/Unlock	Yes
Privacy, Calling Number Suppression	Yes
Privacy, Block Silent Monitor/Barge-in	Yes
Serial Calling (Transfer with Callback)	Yes
Silent Monitor/ Barge- In	Yes
Speed Dial, Personal	Yes
Speed Dial, System	Yes
Transfer to voicemail, Direct	Yes
Voice Mail access	Yes
Attendant Console Appearance on 3105 Phone	Yes
Attendant Console Appearance on iQNet Console	Yes
Warmline (warm ring down circuits)	Yes

VCX Multi Site Application Support

The following table lists the major VCX supported applications, and indicates if the application supports VCX multi site functionality.

VCX 9.5 Application or Feature Name	VCX 9.5 Multi Site Feature? (Yes/No)
Can be monitored by 3105 Attendant Console	Yes
Can be monitored by iQNet Software Attendant Console	No
Can be used as Aspect contact center agent phone	No
Can be used as remote phone over the internet connected to IP Tele Commuter	Yes
Can be used connected to Convergence Center Client	Yes
Multi-site presence with Desktop Communicator or Desktop Communicator Outlook Edition	No
Can be used with audio IP Conferencing	Yes
Can be used with IP Presence	Yes
LDAP Synchronization	Yes (using LDAP Sync filter)
Sametime Click to Dial	Yes
Sametime IP Telephony Presence	Yes

VCX Features and Phones

This section provides a summary of calling features, phone features, and VCX application integration for the VCX IP Telephony Solution release 9.5, for VCX IP phones and analog phones.

VCX Features and Phones

The following table lists the major VCX supported calling and system features. For each feature, this table indicates which VCX IP Phones are supported and if it is supported by analog phones. This table does not automatically mean that a specific analog phone will function as indicated because separate configuration may be required for different 3rd party devices.

VCX 9.5 Feature Name	VCX IP Phones	Analog Phones
Calling Features		
3103 IP Phone Select Button	3103	No
Anonymous Call Reject	350x, 3101, 3102, 3103	Yes, VCX config
Answering Machine and call progress tone detection	N/A	N/A
ACD Groups	350x, 3101, 3102, 3103	No
ACD Groups, Login	350x, 3101, 3102, 3103	No
ACD Groups, Linear	350x, 3101, 3102, 3103	No
ACD Groups, Circular	350x, 3101, 3102, 3103	No
ACD Groups, Calling Group	350x, 3101, 3102, 3103	No
ACD Groups, Intelligent Routing	350x, 3101, 3102, 3103	No
ACD Groups, Feature Interactions	350x, 3101, 3102, 3103	No
ACD Groups, View ACD Group Status	350x, 3101, 3102, 3103	No
ACD Groups, Mailbox and MWI	350x, 3101, 3102, 3103	No
ACD Groups, Malicious Call Trace	350x, 3101, 3102, 3103	No
ACD Groups, Real Time Reporting	350x, 3101, 3102, 3103	No
ACD Groups, Historical Reporting	350x, 3101, 3102, 3103	No
ACD Groups, Call Coverage	350x, 3101, 3102, 3103	No
Bridged Line Appearance	3503, 3502, 3102, 3103	No
Bridged Line Appearance, MWI	3503, 3502, 3102, 3103	No
Bridged Line Appearance, Shared Hold	3503, 3502, 3102, 3103	No
Busy Lamp Field	350x, 3102, 3103	No
Multiple Call Appearance (of same extension)	Up to 2 on 3500B, 3500, 3501 Up to 6 on 3502 Up to 8 on 3502 Up to 2 on 3101, Up to 9 on 3102, Up to 9 on 3103	No
Call Conference, Three Way Calling	350x, 3101, 3102, 3103	No
Call Conference, Six Way Calling	350x, 3101, 3102, 3103	No
Call Conference, Drop	350x, 3101, 3102, 3103	No

VCX 9.5 Feature Name	VCX IP Phones	Analog Phones
Call Coverage	350x, 3101, 3102, 3103	No
Call Drop	350x, 3101, 3102, 3103	No
Call Duration Display	350x, 3101, 3102, 3103	No
Call Forward All	350x, 3101, 3102, 3103	Yes
Call Forward Busy	350x, 3101, 3102, 3103	Yes, with Feature Code
Call Forward No Answer	350x, 3101, 3102, 3103	Yes, with Feature Code
Call Forward Out of Coverage	350x, 3101, 3102, 3103	No
Call Forward Programmable	350x, 3101, 3102, 3103	Yes, with Feature Code
Call Forward Reminder	350x, 3101, 3102, 3103	No
Call Forward Remote	350x, 3101, 3102, 3103	Yes, with Feature Code
Call History (Missed, Answered, Placed Logs)	350x, 3101, 3102, 3103	No
Call Logs Display Sort	350x, 3101, 3102, 3103	No
Call Hold	350x, 3101, 3102, 3103	Yes
Call Hold Reminder	350x, 3101, 3102, 3103	No
Call Park/Retrieve	350x, 3101, 3102, 3103	No
Call Park, Fallback	350x, 3101, 3102, 3103	No
Call Park, Button Mapping	350x, 3102, 3103	No
Call Pickup, Directed	350x, 3101, 3102, 3103	Yes, with Feature Code
Call Pickup, Group	350x, 3101, 3102, 3103	No
Call Restrictions, Blocking Inbound	350x, 3101, 3102, 3103	Yes
Call Restrictions, Blocking Outbound	350x, 3101, 3102, 3103	Yes
Call Restrictions, Call Screening	350x, 3101, 3102, 3103	No
Call Restrictions, Toll Screening	350x, 3101, 3102, 3103	Yes
Call Restrictions, Black List	350x, 3101, 3102, 3103	Yes
Call Restrictions, White List	350x, 3101, 3102, 3103	Yes
Call Restrictions, Forward to Trunk	350x, 3101, 3102, 3103	Yes
Call Restrictions, Transfer to Trunk	350x, 3101, 3102, 3103	Yes
Call Return	350x, 3101, 3102, 3103	No
Call Transfer, Attended	350x, 3101, 3102, 3103	Yes
Call Transfer, Unattended	350x, 3101, 3102, 3103	No
Call Transfer, Fallback on Transfer Failure	350x, 3101, 3102, 3103	No
Call Transfer, Restrictions	350x, 3101, 3102, 3103	No
Call Waiting	350x, 3101, 3102, 3103	Yes
Called ID, Called Party	350x, 3101, 3102, 3103	Yes (dependent on phone)



VCX 9.5 Feature Name	VCX IP Phones	Analog Phones
Caller ID, Calling Party Number	350x, 3101, 3102, 3103	Yes (dependent on phone)
Caller ID, Calling Party Name	350x, 3101, 3102, 3103	Yes (dependent on phone)
Caller ID, Privacy	350x, 3101, 3102, 3103	Yes (dependent on phone)
Camp On Busy (Automatic Call Back)	350x, 3101, 3102, 3103	No
Class of Service Override	350x, 3101, 3102, 3103	No
Customer Account and Billing Codes (CABC)	350x, 3101, 3102, 3103	Yes
Delayed or No Ringing	350x, 3101, 3102, 3103	No
Distinctive Ringing, Ring Patterns (Different Types of Calls)	350x, 3101, 3102, 3103	No
Distinctive Ringing, Selective Ringing (Ident-A-Call)	350x, 3101, 3102, 3103	No
Do Not Disturb	350x, 3101, 3102, 3103	No
DTMF Dialing	350x, 3101, 3102, 3103	No
Feature Codes (from IP phones)	350x, 3101, 3102, 3103	No
Feature Access Codes (from analog phones)	N/A	Yes
Forced Account Codes (FAC)	350x, 3101, 3102, 3103	Yes
Forward to Mail	350x, 3101, 3102, 3103	No
Directory, Local User	350x, 3101, 3102, 3103	No
Directory, Global User	350x, 3101, 3102, 3103	No
Hands Free Support	350x, 3102	No
Hotline (hot ring down circuits)	350x, 3101, 3102, 3103	Yes
Hunt Groups	350x, 3101, 3102, 3103	Yes (partial)
Hunt Group with ability login/logout to one or more hunt groups that the phone belongs to	350x, 3101, 3102, 3103	Yes, with feature code
Hunt Groups, Linear	350x, 3101, 3102, 3103	Yes
Hunt Groups, Circular	350x, 3101, 3102, 3103	Yes
Hunt Groups, Calling Group	350x, 3101, 3102, 3103	Yes
Hunt Groups, Feature Interactions	350x, 3101, 3102, 3103	No
Hunt Groups, View Hunt Group Status	350x, 3101, 3102, 3103	No
Hunt Groups, Malicious Call Trace	350x, 3101, 3102, 3103	No
Hunt Groups, MWI	350x, 3101, 3102, 3103	No
Hunt Groups, Call Coverage	350x, 3101, 3102, 3103	Yes
Last Number Redial	350x, 3101, 3102, 3103	No
Malicious Call Trace	350x, 3101, 3102, 3103	No
Message Waiting Indication (MWI), Audio	350x, 3101, 3102, 3103	Yes
Messaging Waiting Indicator (MWI), Visual	350x, 3101, 3102, 3103	Yes, if available
Missed Call Indicator	350x, 3101, 3102, 3103	No

VCX 9.5 Feature Name	VCX IP Phones	Analog Phones
Mobility, Single Region Hot Desking	350x, 3101, 3102, 3103	No
Mobility, Multi Site Hot Desking	350x, 3101, 3102, 3103	No
Music on Hold	350x, 3101, 3102, 3103	Yes
Mute	350x, 3101, 3102, 3103	Yes, if available
Paging, Analog External Paging System	350x, 3101, 3102, 3103	Yes, VCX config
Paging, SIP External Paging System	350x, 3101, 3102, 3103	Yes, VCX config
Paging, Phone to Phone (Send Beep with Calling Number)	350x, 3101, 3102, 3103	No
Paging, Group (Zone)	350x, 3101, 3102, 3103	No
Privacy, Calling Number Suppression	350x, 3101, 3102, 3103	Yes, with Feature Code
Privacy, Block Silent Monitor/Barge-in	350x, 3101, 3102, 3103	No
Serial Calling (Transfer with Callback)	350x, 3101, 3102, 3103	No
Silent Monitor/ Barge- In	350x, 3101, 3102, 3103	No
Speed Dial, Personal	350x, 3101, 3102, 3103	Yes, with Feature Code
Speed Dial, System	350x, 3101, 3102, 3103	Yes, with Feature Code
Transfer to Voicemail, Direct	350x, 3101, 3102, 3103	No
Voice Mail access	350x, 3101, 3102, 3103	Yes
Warmline (warm ring down circuits)	350x, 3101, 3102, 3103	Yes
Phone Features		
Automatic Profile Updates	350x, 3101, 3102, 3103	No
Automatic Phone Software Updates	350x, 3101, 3102, 3103	No
Backlit Display	3503, 3502, 3501, 3102C	No
Button mapping	350x, 3102, 3103	No
Country Specific Tones	350x, 3101, 3102, 3103	No
Desk Use	350x, 3101, 3102, 3103	No
DHCP capable phones	350x, 3101, 3102, 3103	No
DTMF Dialing	350x, 3101, 3102, 3103	No
DTMF Monotone	350x, 3101, 3102, 3103	No
Dynamic Codec Selection	350x, 3101, 3102, 3103	No
Echo Cancellation, Acoustic	350x, 3101, 3102, 3103	No



VCX 9.5 Feature Name	VCX IP Phones	Analog Phones
Echo Cancellation, Handset	350x, 3101, 3102, 3103	No
Integrated Ethernet Support 10/100 (2 ports)	3500B, 3101, 3102	No
Integrated Ethernet Support 10/100/1000 (2 ports)	3503, 3502, 3501, 3500, 3103	No
Faceplate localization	3102, 3103	No
Faceplate Internationalization	350x	No
Fixed Button Labeling	350x, 3101, 3102, 3103	No
Flexible date/time display	350x, 3101, 3102, 3103	No
Hands free Installation of phones	350x, 3101, 3102, 3103	No
Headset Support	350x, 3102, 3103	No
Locked Down Phones (MAC support)	350x, 3101, 3102, 3103	No
Multi-lingual display	350x, 3101, 3102, 3103	No
One-button send all calls	3503, 3502, 3102	No
One-button speed dial	350x, 3102, 3103	No
One-button voice mail	350x, 3101, 3102, 3103	No
Power, External	350x, 3101, 3102, 3103	No
Power over Ethernet (IEEE 802.3af)	350x, 3101, 3102, 3103	No
Full Duplex Speaker Phone	350x, 3101SPKR, 3102, 3103	No
Static IP Configuration	350x, 3101, 3102, 3103	No
VLAN Support	350x, 3101, 3102, 3103	No
G.711 (u-Law uncompressed)	350x, 3101, 3102, 3103	No
G.729A/B (compressed)	350x, 3101, 3102, 3103	No
G.722 (wide band)	3503, 3502, 3501, 3101, 3102, 3103	No
Voice activity detection	350x, 3101, 3102, 3103	No
Voice Prioritization	350x, 3101, 3102, 3103	No
Volume control	350x, 3101, 3102, 3103	No

VCX 9.5 Feature Name	VCX IP Phones	Analog Phones
Wall Use	350x, 3101, 3102, 3103	No
4 non-programmable line/feature keys with hard label/status indicators	3101	No
18 programmable line/feature keys with hard label/status indicators	3102	No
8 programmable line/feature keys with hard label/status indicators	3103	No
15 programmable line/feature keys with soft label/status indicators	3502	No
21 programmable line/feature keys with soft label/status indicators	3503	No
3 context sensitive soft feature keys	3101, 3102	No
4 context sensitive soft feature keys	3502, 3103	No
5 context sensitive soft feature keys	3503	No
Color Display	3503	No
Configurable background image	3503	No
Cursor/navigator interface for display control	350x, 3101, 3102, 3103	No
Attendant Console with 4 programmable buttons with status LEDs (conference, transfer, serial transfer, park, hold), and ability to monitor BLF and speed dial up to 100 extensions on a single console, with ability to daisy chain up to 3 consoles	3105	No
Can be monitored by 3105 Attendant Console	350x, 3101, 3102, 3103	Yes
Can be monitored by iQNet Software Attendant Console	350x, 3101, 3102, 3103	No
Can be used as Exchange call center agent phone	3101, 3102, 3103	No
Can be used as EpicCenter on x contact center agent phone	3101, 3102, 3103	No
Can be used as remote phone over the internet connected to IP Tele Commuter	350x, 3101, 3102, 3103	No
Can be used connected to Convergence Center Client	350x, 3101, 3102, 3103	No
Can be used with audio IP Conferencing	350x, 3101, 3102, 3103	Yes
Can be used with IP Presence	350x, 3101, 3102, 3103	No

IP Messaging Features

Architectural Features

The following table lists the major supported IP Messaging architectural features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Global Voice Mail Central Server Integrated with IP Messaging	√	√	The IP Messaging Central Server coordinates the synchronization of mailbox data for the Global Voice Mail feature. In the VCX 9.0 release, the Central Server is resident on the VCX regional office IP Messaging server, and does not require an additional server. There is one IP Messaging Central Server per enterprise, hosted on one of the regions in a VCX Multi Region configuration, or hosted on the regional office servers in a Region and Branch configuration.
Voice Mail Replacement Solution	√	√	IP Messaging can provide a migration to IP Telephony by providing a voice mail replacement solution when the integration points between the VCX solution and the legacy PBX are met, including call control information such as redirection reason and redirection number and delivery of message waiting indicator. Call control and MWI can be implemented using QSIG Basic Call (for call control) and Supplemental Services (for MWI) over T1/E1 or analog with DTMF tones for MWI. Because every legacy PBX environment is different, a Proof of Concept must be requested and successfully performed by GSO prior to delivery of a statement of work to implement this type of solution.
Redundancy, Intelligent Mirroring	√	√	The IP Messaging module system supports several redundant configurations using the Intelligent Mirroring feature. The IP Messaging module Intelligent Mirroring feature is intended to minimize service outages during server failure and server maintenance windows. This is accomplished by synchronizing the database and message stores of two IP Messaging module Message Management Unit (MMU) servers in near-real time. The synchronization is bi-directional and does not depend on active or standby state. In addition, the IP Messaging module Intelligent Mirroring feature supports centralized administration by allowing database updates to occur on either MMU server. Regardless of state, updates that occur on either MMU will be synchronized with its peer in near-real time.
G.711	√	√	The IP Messaging module supports the G.711 μ Law (64 Kpbs) codec. For each deployment, only one of the supported codecs may be selected for message storage and audio record/playback on a system-wide basis. By default, the IP Messaging module uses the G.711 μ Law codec. This can be changed during installation or after installation.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
G.729	√	√	The IP Messaging module supports the G.729a (16 Kpbs) codec. For each deployment, only one of the supported codecs may be selected for message storage and audio record/playback on a system-wide basis. By default, the IP Messaging module uses the G.711 μ Law codec. This can be changed during installation or after installation.

Message Features

The following table lists the major supported IP Messaging message features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Mailbox Login	√	√	The Mailbox Login feature is used to obtain, collect, and authenticate the identity of mailbox owners who are attempting to enter their mailbox. There are multiple methods that a mailbox owner can use to login to the IP Messaging module, depending on deployment configuration and user profile configuration.
Message Folders	√	√	The IP Messaging module supports the standard folders of Inbox, Saved Items, Deleted Items, Sent Items, and Drafts. The IP Messaging module also supports user-defined folders for use with 3 rd party IMAP4-compliant clients.
Message Deposit	√	√	A voice message deposit is an incoming SIP call to the IP Messaging module that has been forwarded from a VCX call processor or a PBX via a VCX media gateway. The forwarding action is due to ring/no answer, busy, or unconditional call forward events that occur when a caller attempts to reach a subscriber who has a voice mail subscription.
Message Deposit Treatment Options	√	√	After recording a voice message, a caller has several options available if they did not hang up.
Message Retrieval	√	√	A voice message retrieval is an incoming SIP call to the IP Messaging module from a VCX call processor or VCX media gateway when a subscriber attempts to access their mailbox.
Message Review	√	√	The IP Messaging module allows mailbox owners to listen to and review the messages in their New, Save, Deleted, and Future Delivery folders.
Message Review Options	√	√	For each message that is reviewed, the IP Messaging module can provide to the mailbox owner the following information.
Message Auto Playback	√	√	When there are multiple messages in a folder to be reviewed, the Message Auto Playback features plays them all in sequence without any interruptions or prompts between each message.
Message Review Playback Controls	√	√	During the time that a message is being played to a mailbox owner, the IP Messaging module provides the following user controls: rewind playback, pause playback, and forward playback

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Message Reply	✓	✓	During message review, a mailbox owner can reply to the sender of a message in one of two ways: replying with a live call and replying with a message
Message Forward	✓	✓	During message review, a mailbox owner can forward a message to one or more destinations. An unlimited number of destinations can be entered by the mailbox owner who is forwarding the message.
Message Append	✓	✓	The IP Messaging module allows mailbox owners to append to their messages when sending a message within their mailbox. This function is not available in the call answering portion of the TUI (message reply).
Message Annotation	✓	✓	When forwarding a message, a mailbox owner can annotate the original message by recording a message that is sent with the original message during the forward. The forwarded destinations will hear the annotated message first, followed by the original message.
Message Save	✓	✓	During message review, a mailbox owner can move a message into the Saved Messages folder. The messages will stay in the Saved Messages folder up to the maximum number of days allowed by the administrator. After the maximum retention period, the IP Messaging module automatically purges the message from the Saved Messages folder
Message Delete	✓	✓	During message review, a mailbox owner can move a message into the Deleted Messages folder. The messages will stay in the Deleted Messages folder up to the maximum number of days allowed by the administrator. After the maximum retention period, the IP Messaging module automatically purges the message from the Deleted Messages folder.
Message Delete Retrieval	✓	✓	Messages that are in the Deleted Messages folder can be reviewed and moved to the Saved Messages folder by a mailbox owner at any time up until the maximum retention period for messages in the Deleted Messages folder.
Message Record Options	✓	✓	After recording a message, the IP Messaging module provides the following options: review recording, re-record, append recording, rewind playback, pause playback, and forward playback
Message Send	✓	✓	The IP Messaging module allows mailbox owners to send voice messages to other mailbox owners within the VCX system or to external destinations. A voice message is sent by recording a message, selecting one or more destinations, applying any send options to the message, and finally by sending the message.
Message Send Treatment Options	✓	✓	The IP Messaging module provides subscribers with message treatment options that improve contact with callers. Subscribers can perform the following message treatment after recording a message to be sent: mark as urgent, mark as private, future delivery, delivery report, and disable notification.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Message Delivery to non-subscribers	√	√	The Message Delivery to non-subscribers feature provides a method for subscribers to send voice and facsimile messages to non-subscribers.
Message Schedule Delivery	√	√	Mailbox owners can send messages to others according to a future delivery date. After entering the destinations and recording the message, a mailbox owner enters the date (MMDDYY) and time (HHMM) that the message is to be delivered. The IP Messaging module will send the message to the destination(s) at the scheduled time and date.
Message Delivery Report	√	√	The Message Delivery Reports feature allows confirmation that a recorded message has been accepted or received by the IP Messaging module, when it is sent to a recipient, when it is delivered, whether delivery failed or is still in progress. This feature confirms the message delivery with the time and the date.
Message Broadcast	√	√	The Message Broadcast feature allows a mailbox owner to send a message to many destinations, which can include internal phone numbers, external phone numbers, personal distribution lists, and system distribution lists.
Message Notification	√	√	The Message Notification feature allows a mailbox owner to turn message notification on or off for their defined notification procedure. Mailbox owners turn message notification on or off using the TUI or web provisioning.
Message Notification Options	√	√	The Message Notification feature allows a mailbox owner to turn message notification on or off for their defined notification procedure. Mailbox owners turn message notification on or off using the TUI or web provisioning.
Message Auto Delivery	√	√	The Message Auto Delivery feature allows mailbox owners to have new messages automatically delivered to another internal or external phone number.
Message Priority	√	√	Messages in IP Messaging module folders are sorted based on the following criteria: urgent/normal/private, date, time, and reviewed/un-reviewed.

Greeting Features

The following table lists the major supported IP Messaging greeting features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Default System Greeting	√	√	If no greetings have been recorded by a mailbox owner, the standard IP Messaging module greeting that is played when calls are forwarded for message deposit is played.
Personal Normal Greeting	√	√	The normal greeting is recorded by a mailbox owner when they login via the Telephone User Interface (TUI) for the first time and perform the setup assistant. Mailbox owners can also change the normal greeting via TUI at any time from the main menu.
Personal Busy Greeting	√	√	The busy greeting is recorded by a subscriber when they login via the TUI and enter the greetings menu. the IP Messaging module will play the busy personal greeting (if recorded) when the call forward reason indicates "busy", even if an extended absence greeting is active.
Personal Extended Absence Greeting	√	√	The extended absence greeting is recorded and activated by a mailbox owner when they login via the TUI and enter the Setup Greetings menu. The IP Messaging module will play the extended absence greeting (if recorded and activated) when the call forward reason indicates "no reply", "unconditional", or "busy" (if no busy personal greeting is recorded).
Personal Scheduled Greetings	√	√	Scheduled greetings are used to personalize how a mailbox is presented to callers leaving messages based on date and time characteristics defined by a mailbox owner. Mailbox owners can define scheduled greetings using the TUI or Web Provisioning, but greetings themselves can only be recorded via the TUI.

Distribution List Features

The following table lists the major supported IP Messaging distribution list features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Personal Distribution Lists	√	√	Mailbox owners can create up to an administrator-defined number (up to 9,999) of distribution lists for their own private use via the TUI or Web Provisioning. For each entry in a distribution list, the subscriber can define a mailbox number, external phone number, and e-mail address for the recipient. The maximum number of entries in each distribution list is configurable by an administrator (up to 999,999).
Administrator Distribution Lists	√	√	The IP Messaging module supports administrator distribution lists which are personal lists created by administrator in system privileged mailbox (using either TUI or admin screen) and accessible only from mailbox created in. COS, Company and all subscriber destinations are available for creating broadcast lists. Administrator Lists are ideal for broadcasts that are available to specific administrators.
System Distribution Lists	√	√	The IP Messaging module supports system distribution lists which can be accessed by a group of subscribers based on System User Group (SUG) value. Any mailbox owner whose SUG value matches can view and use the system distribution list. System Lists are ideal for departmental lists accessible by members of the department. System distribution lists are created and managed by an administrator.

Directory Features

The following table lists the major supported IP Messaging directory features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Directory Search	√	√	The IP Messaging module provides a directory search for several different functions, including: message forward, message send, and auto attendant directory assistance.
Directory Search Dial By Name	√	√	For the directory search by name, a caller enters touch tone keys representing the mailbox owner's last name, the IP Messaging module searches for a match to the input and presents the results to the caller. The caller selects the appropriate result by pressing the # key. This feature speaks the mailbox names to the caller using the recorded name announcements or text-to-speech if enabled.

User Productivity Features

The following table lists the major supported IP Messaging user productivity features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Mailbox Auto Login	√	√	The Auto Login feature is used to automatically enter a mailbox, bypassing password entry.
Mailbox Alias	√	√	The IP Messaging module Alias feature provides the ability for mailbox owners to define multiple numbers that point to their single mailbox. The Alias feature allows mailbox owners to identify multiple phone numbers that are directly associated with their mailbox. This allows the IP Messaging module to be aware of the mailbox owner's identity, even when they are calling from other phones. There is no limit to the number of aliases that can be defined (the limit is defined by system parameters such as disk space and available memory). Each alias can have its own password, personal greeting, and Auto Login defined by the mailbox owner.
Personal Address Book	√	√	The IP Messaging module supports a Personal Address Book by providing the following functions: when reviewing messages, mailbox owners can add an entry into their personal address book, and mailbox owners can add, review, modify, or delete entries in their personal address book from the TUI Setup Options menu.
Shortcut Keys	√	√	The IP Messaging module provides shortcut key combinations for frequently-used functions.
Personal Auto Attendant	√	√	The IP Messaging module Message on Demand feature allows for the creation of personal auto attendant nodes that allow callers to navigate through a tree, selecting to print faxes or to listen to recorded voice files. This feature is available to administrators and mailbox owners. This feature is configurable via the TUI for administrators and mailbox owners, and using web provisioning for administrators.
Prompt Bypass	√	√	The IP Messaging module supports the Prompt Bypass feature by allowing any caller to press a DTMF digit to bypass a currently speaking prompt and subsequent prompts. For example, if a mailbox owner dials into their mailbox to listen to new messages, they can press 1-1-1 and hear the first message without listening to any prompts. This feature is used by users who are familiar with the TUI.
Mailbox Full Alert	√	√	The IP Messaging module Mailbox Full Alert feature provides the ability to inform mailbox owners when their mailboxes become too "full".

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Virtual Calling Card	√	√	The Virtual Calling Card feature allows subscribers to make outgoing calls from their mailbox. Administrators define the number of allowable minutes per month, configurable via web provisioning. If the subscriber has time remaining, they can press one key from the main menu to make an outgoing call. After the destination number is entered, the subscriber can press 9-9 at any time to cancel the outgoing call and return to the main menu in the voice mail session.
Privacy	√	√	The IP Messaging module allows callers to mark their message as private, which means that their message cannot be forwarded by the recipient.
Family Mailbox	√	√	For multiple users off a single mailbox, the IP Messaging module offers the Family mailbox feature. The Family Mailbox feature allows several mailboxes to be accessed by the same phone number. A family mailbox consists of a main mailbox and from zero to 999 submailboxes which are accessed by a common number.
Zero Out	√	√	The IP Messaging module supports “zero-out” functionality that allows callers to be connected with an operator, an internal phone number, or an external phone number. Callers can press “0” at any time during menu prompts to be connected to a phone number that is configurable by administrators and mailbox owners. Mailbox owners can change the phone number via TUI or web provisioning.
Call Back	√	√	The Call Back feature provides a prompt for callers and allows them to enter a “call back” phone number. This is a number where they can be reached, which may be different than the calling party information at the time of message deposit. Users can toggle the callback feature on/off from the TUI by pressing 4-4 at the Setup Options Menu.
Call Monitor	√	√	The Call Monitor feature allows a mailbox owner to listen to messages as they are being recorded and to optionally barge-in to a call with the person recording a message. This feature is enabled on a per-mailbox or per-class of service basis, and is disabled by default.
Message Waiting Indicator	√	√	The IP Messaging module provides message waiting indications (MWI) to IP Phones using SIP NOTIFY and to NBX IP Phones.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Music On Hold	✓	✓	The VCX solution provides a scalable, efficient, and flexible Music on Hold feature. Music on Hold (MOH) allows callers to hear a particular recording continuously while on hold. The VCX Music On Hold feature allows administrators to assign specific MOH files to different groups of users on a per-phone basis. The VCX solution supports an unlimited number of MOH sources. The MOH sources are stored at the IP Messaging module. When a caller is to be placed on hold, the VCX redirects the call to the IP Messaging module at a particular extension. The extension given to the IP Messaging module identifies the MOH source to play.
Force Password Change	✓	✓	The IP Messaging module can force mailbox owners to change their password on a periodic basis. The administrator defines the number of days that the password is valid for, from 1 to 999 days. A value of zero days indicates that the password will not expire.
User Password Change	✓	✓	The IP Messaging module allows mailbox owners and administrators to modify the password for a mailbox. Mailbox owners can modify their own password by using the TUI or web provisioning interface.
User Provisioning through TUI	✓	✓	The IP Messaging module provides the ability for mailbox owners to provision their mailbox using Telephone User Interface
User Provisioning through web	✓	✓	The IP Messaging module provides the ability for mailbox owners to provision their mailbox using the Web Provisioning Interface
Auto Attendants	✓	✓	The IP Messaging module supports the ability to administer auto attendants. The auto attendant feature provides call handling capabilities by automatically answering calls. There is no limit to the number of auto attendants that can be configured on the system. Auto attendants can be assigned to specific mailboxes (one or more), classes of service, and companies/divisions.
Information Mailboxes	✓	✓	The IP Messaging module provides Listen Only (or Information) functionality through the Message On Demand feature. Message on Demand refers to a tree of auto-attendant nodes that allow callers to navigate through the tree selecting to print faxes or listen to recorded voice files. The Message on Demand feature is available on all mailboxes, and all subscribers have access to the feature.
Announcement Mailboxes	✓	✓	The IP Messaging module provides Announcement functionality through the Message On Demand feature. This feature provides announcements to callers on a listen-only basis when they dial into an Announcement mailbox. This feature is available on all mailboxes, and all subscribers have access to the feature.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Bulletin Board	√	√	Bulletin board services provide the ability for callers to navigate through a tree, selecting to print faxes or to listen to recorded voice files, provide listen only information, and announcements. These services are provided using the IP Messaging module Message on Demand feature.
System Bulletin/Broadcast Mailboxes	√	√	The IP Messaging module provides System/Bulletin Broadcast functionality through the Distribution List feature. This feature allows administrators to create and manage system-wide distribution lists that are accessible to subscribers based on a Send User Group value.
Forms (Q&A) Mailboxes	√	√	The IP Messaging module provides forms or Q&A functionality through the Forms mailbox feature. This feature allows administrators to setup the mailbox prompts and specify whether input is voice recording or DTMF response. Administrators and subscribers with access to the Forms mailbox password can then login to the mailbox to collect the data
Survey Mailboxes	√	√	The IP Messaging module provides survey functionality through the Forms mailbox feature. This feature allows administrators to setup the mailbox prompts and specify whether input is voice recording or DTMF response. Administrators and subscribers with access to the Forms mailbox password can then login to the mailbox to collect the data.

Find Me Follow Me Features

The following table lists the major supported IP Messaging find me follow me features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Find Me Follow Me	√	√	The FindMeFollowMe feature gives mailbox owners the ability to make contact with others more efficiently regardless of location, day, time, or network access device. The FindMeFollowMe feature works across many types of networks including PSTN, wireless, and VoIP. The FindMeFollowMe feature supports simplified and complex contact methods.
Find Me Follow Me Call Intercept	√	√	The IP Messaging module FMFM Call Intercept feature ensures all calls are screened for calling party identification before contact with the mailbox owner is allowed. This discourages calls to mailbox owners from unknown callers. As a standalone feature, the Call Intercept feature is intended for residential mailbox owners who may or may not mailbox owner to a voice mailbox.

Fax Mail Features

The following table lists the major supported IP Messaging fax mail features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Electronic Fax Sending	√	√	IP Messaging provides fax server functionality, allowing electronic faxes as tif, jpg, png, gif, bmp, and pdf attachments in an email sent to IP Messaging which converts the attached faxes to the universal graphic format and delivers to a fax machine via local analog port or PSTN. Up to 20 fax destinations can be specified in one email. IPM sends success/failure return receipt notification for each fax destination.
Fax Message Deposit	√	√	The Fax Message Deposit feature allows callers to deposit a facsimile into a VCX mailbox. When a facsimile call is forwarded to the IP Messaging module, the call setup indication data is the same as a voice message deposit call. An analog or digital media gateway sends the facsimile to the IP Messaging module using SIP signaling, and performs the necessary translations between T.30 and T.38 facsimile signaling.
Fax Message Retrieval	√	√	The Fax Message Retrieval feature allows a mailbox owner to retrieve a facsimile message from their mailbox using the TUI.
Fax Delivery to Fax Machine	√	√	The Fax Delivery to Fax Machine feature allows the mailbox owner to print a facsimile message while logged into their mailbox via the TUI to any one of the following: default fax machine defined by the Class Of Service/Company/Division, fax machine defined in mailbox profile, and print to a fax machine defined by entering the digits via the TUI.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Fax Auto Delivery to Fax Machine	√	√	The Fax Auto Delivery to Fax Machine feature allows the mailbox owner to automatically have incoming facsimile messages printed to a fax machine. The fax machine can be any one of the following: default fax machine defined by the Class Of Service/Company/Division, and fax machine defined in mailbox profile
Fax Auto Delivery to E-Mail	√	√	The Fax Auto Delivery to E-Mail feature allows a mailbox owner to automatically have incoming facsimile messages sent to an e-mail account. The facsimile message is left in the New folder after it is automatically delivered. MWI is turned on and any notification procedures for the mailbox are performed.
Never Busy Fax	√	√	The IP Messaging module provides the Never Busy Facsimile feature by using the Facsimile Message Deposit feature along with the Facsimile Auto Print feature to record new inbound facsimiles, and automatically printing each one in the order/priority they were received.

Email Integration Features

The following table lists the major supported IP Messaging email integration features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Email Integration	√	√	The IP Messaging module provides a flexible unified messaging solution for different needs: client integration, email auto delivery, email client integration, email synchronization, and unified inbox.
Client Integration	√	√	This unified messaging scenario is for users who want to access their voice and fax messages directly from the IP Messaging server. Voice messages are .wav attachments and fax messages are .pdf or .tif attachments.
Email Auto Delivery	√	√	This unified messaging scenario is for users with access to a PC and don't like to use their phone to access voice mail. This is a popular VCX unified messaging option because many users would rather deal with messaging on their computer rather than over the phone. It is simple and easy to configure and puts the least load on the IP Messaging module. Voice and fax messages are auto-forwarded to an email account using SMTP. Voice messages are .wav attachments and fax messages are .pdf or .tif attachments.
Fax Attachment in Outgoing Email to Email Server	√	√	Fax messages are delivered in outgoing SMTP email messages as an attachment. The IP Messaging module supports attachments in ".tif" or ".pdf" format. The ".tif" format is the default.
Voice Mail POP3/IMAP4 Client Integration	√	√	A mailbox owner who is configured for an IP Messaging module email account can access their e-mail, voice mail, and fax messages using any e-mail client that supports the IMAP4 or POP3 protocol.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Email Synchronization	✓	✓	The IP Messaging module supports the Email Synchronization feature, which represents true unified messaging for subscribers. Their email client interfaces only to the email message store, and they have full synchronization of messages and message waiting indication at the voice mail store. This is accomplished using a combination of auto delivery and periodic polling with the email message store using POP3 or IMAP4 (with IMAP4 providing full MWI synchronization). Up to 100 mailboxes per VCX region can be provisioned with this feature (up to 20 on VCX Connect 100). Requires user provisioning and password updates via web provisioning.
Unified Inbox for Domino on IBM i	✓	✓	Lotus Notes mailboxes and VCX IP Messaging voicemail boxes can be synchronized using an API for IBM Lotus Domino 8.0 running on IBM i V5R4 or V6R1 operating system. Users can then receive and review voice and fax messages in their Lotus Notes mailbox. IP Messaging supports up to 1,500 Unified Inboxes per VCX region.
Unified Inbox for Domino on Windows	✓	✓	Lotus Notes mailboxes and VCX IP Messaging voicemail boxes can be synchronized using an API for IBM Lotus Domino 8.0 running on Windows operating system. Users can then receive and review voice and fax messages in their Lotus Notes mailbox. IP Messaging supports up to 1,500 Unified Inboxes per VCX region.
Email Integration with Exchange 2003 and Exchange 2007	✓	✓	IP Messaging supports email integration with Exchange 2003 and Exchange 2007 for SMTP Auto Delivery and Email Synchronization via POP3 or IMAP4.

Administration Features

The following table lists the major supported IP Messaging administration features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
IMAP SSL v3 Support	✓	✓	SSL v3 is supported for secure IMAP implementations within IP Messaging
Upload speak files via web interface	✓	✓	The IP Messaging module allows administrators to upload Music on Hold (MoH) and auto attendant speak files to the IP Messaging server using the system administration web interface.
IP Messaging web portal	✓	✓	IP Messaging is integrated with the IP Telephony web user portal so that the user does not need to switch web portals depending on what operation they are doing.
Listen to messages from web user interface	✓	✓	The web UI user portal can display the voicemail available on a user's mailbox and will allow the user to play the voice mail message on the user's PC. What happens with fax messages?

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Display mailboxes on Central Server by site	√	√	The system administration web interface allows the mailboxes to be displayed by site, so that the administrator can easily identify which mailboxes are hosted on the IP Messaging Central Server in a Global Voice Mail configuration, and which ones are hosted other IP Messaging sites.
Voice Mail CODEC configuration via web interface	√	√	The system administration web interface supports the configuration of the CODEC to use for all messages and speak files across the system, either G.711 or G.729. This is a system-wide configurable parameter.
Voice Mail language configuration via web interface	√	√	The system administration web interface supports the configuration of the language packs that are installed on the IP Messaging server. The following languages are supported for voice prompts: US English, UK English, Australian English, Canadian French, Parisian French, LAT Spanish, Castilian Spanish, Brazilian Portuguese, German, Italian, Chinese, Dutch, Russian, and Korean.
IP Messaging Web Interface	√	√	The IP Messaging module supports a full web-based interface that allows provisioning of all IP Messaging parameters via a web interface that has a consistent look and feel to the VCX IP Telephony web interface.
Voice Mail Security Enhancements	√	√	Password security includes the following enhancements: New passwords are compared to the last 5 passwords and duplicates are rejected, Passwords that are identical to the telephone's extension are rejected, Simplistic passwords such as 111111, 123456, 987654 are rejected. These can be enabled or disabled on a per-mailbox and per-class of service basis. The administrator has the ability to reset the password which clears the list of recently used passwords.
Administration of all parameters through XTerminal interface	√	√	The IP Messaging module supports the ability to provision all system features and functionality through an X-Terminal based interface.
Multiple Language Support	√	√	The IP Messaging module supports the ability to have different languages on a per-mailbox and per-class of service basis. Only one language is supported for each mailbox or class of service. Refer above for the languages supported for the mailbox voice prompts. The IP Messaging system administration web interface supports the same languages as the VCX system administration.
Telephone User Interface (Native)	√	√	The IP Messaging module supports the Telephone User Interface by default for all mailboxes. This is the menu of options that are available to users when logged into a mailbox.
Telephone User Interface (Traditional)	√	√	The IP Messaging module supports the ability to optionally use a "traditional" Telephone User Interface, which is similar to a basic voice mail system deployed in many existing PBX infrastructures (Octel).

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Mailbox On The Fly	√	√	The IP Messaging module supports the Mailbox on the Fly feature. This is an option to delete the mailbox after all the messages are deleted, making it a guest mailbox. Mailboxes are created when a call is forwarded to voice mail with a redirection number that is 10 digits that does not match an existing mailbox. The caller is then prompted to leave a message for the new mailbox. Notification can be enabled for the guest mailbox.
Multiple Administrators	√	√	The IP Messaging module supports multiple administrators on a system-wide basis.
Multiple Permission Levels	√	√	Each administrator can be defined with a set of permissions that defines what they can do and see in the system.
Mailbox Administration	√	√	The IP Messaging module supports the ability to administer the parameters associated with a mailbox.
Class of Service Administration	√	√	The concept of a Class Of Service is used by the IP Messaging module to define general characteristics that apply to a group of subscriber mailboxes. Multiple Class Of Service entries can be defined, each with their own attributes.
Batch Import	√	√	The IP Messaging Import Utility allows enterprises to provision one or more subscribers by “importing” data from a text file in a “batch” mode. The Import Utility file format is designed to be compatible with a simple Excel spreadsheet exported as a tab-delimited text file (flat ASCII file).
Import Mailbox/COS	√	√	The IP Messaging module supports the ability to import mailbox and class of service data from an ASCII file.
Export Mailbox/COS	√	√	The IP Messaging module supports the ability to export mailbox and class of service data from an ASCII file.
Company/Division administration	√	√	The IP Messaging module supports an unlimited number of companies with an unlimited number of divisions supported for each. Multiple divisions of a company can be created, edited, and deleted after a company is created and saved. Administrators can assign mailboxes (single or a range) to a company/division. Administrators can also update all mailbox records that are assigned to a particular company/division when company/division data is modified.
Send User Groups	√	√	The IP Messaging module supports the ability to create, edit, and delete send user groups. A Send User Group (SUG) in the IP Messaging module is a group of subscribers to whom a user is authorized to send messages. A SUG is a powerful concept that gives enterprises the ability to define enterprise-wide policies that determine who can and cannot send messages to specific groups of subscribers.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Pager Templates	√	√	The IP Messaging module supports the ability to administer pager templates. There is no limit to the number of pager templates that can be configured on the system. Pager templates can be assigned to specific mailboxes and classes of service.
Time Zones	√	√	The IP Messaging module supports the ability to administer time zones. The standard time zones are supported automatically by the IP Messaging module. To add new time zones, the name of the time zone and its associated UNIX code is entered at the Time Zone screen. Time zones can be assigned on a class of service and mailbox basis.
Mailbox Un-login	√	√	The IP Messaging module supports the ability to un-login a mailbox. If a mailbox is currently logged into, this feature will automatically unlogin the user, releasing all system resources currently in use for the session.
VPIM	√	√	The IP Messaging module supports the ability to integrate with other voice mail systems using the VPIM version 2 protocol. Voice Profile for Internet Mail (VPIM) is an industry standard protocol (rfc3801) that allows subscribers on one VPIM-enabled messaging system to send, receive, and forward voicemail and voicemail-based fax messages to subscribers in other locations. There is no hard limit to the number of VPIM end points that can be added.

Management Features

The following table lists the major supported IP Messaging management features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
System Backup	√	√	The IP Messaging module supports the ability to back up the messaging system database on a regular scheduled basis including system data, mailbox data, and mailbox messages.
System Restoration	√	√	The IP Messaging module supports the ability to restore a system after a catastrophic failure of the hard drive.
System Status	√	√	The IP Messaging module supports the ability to monitor system status on a regular scheduled basis and on a real time basis. The IP Messaging module Reports feature provides this functionality for a scheduled basis.
System Alarms	√	√	The IP Messaging module supports the ability to send SNMP traps to an optional management system for alarm logging, display, notification, and action.

Reporting Features

The following table lists the major supported IP Messaging reporting features.

VCX 9.5 Feature Name	VCX C	VCX E	VCX 9.5 Feature Description
Reports	√	√	The IP Messaging module provides reports on a demand basis or on a scheduled basis. All reports can be viewed in real time using web administration or written to a disk file. Many reports can be delivered to one e-mail account. Reports can be scheduled.
Call Detail Records	√	√	The Call Detail Record (CDR) feature of the IP Messaging module provides detailed information about certain types of messaging events. These events are written to a CDR disk file in an ASCII format depending on the type of event.

For more information

To read more about VCX IP Telephony solutions, go to www.procurve.com/products/unified-communications/index.htm



Get connected
www.hp.com/go/getconnected

Current HP driver, support, and security alerts
delivered directly to your desktop

© Copyright 2010 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Document Version 18, August 2010

