cisco.

Unified CCX Software Compatibility Matrix for 12.5(1)

First Published: 2020-09-02 Last Updated: 2023-08-10 Americas Headquarters Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA

http://www.cisco.com Tel: 408 526-4000 800 553-NETS (6387) Fax: 408 527-0883

Cisco Systems, Inc.

www.cisco.com

Unified CCX and IP IVR

Contents

nified CCX and IP IVR	
Unified CCX and IP IVR	
olution Products and Components	
Vorkforce Optimization Compatibility	6
ardware and Virtualization	
hird Party Software	
ASR and TTS	
Export Unified Intelligence Center Reporting	
Wallboard Reporting	(
Enterprise Database	
Enterprise Database for Unified Intelligence Center	
Microsoft Exchange Server for Email	10
Cloud Based Email Services	10
Supported Single Sign-On Identity Providers	10
upported Browsers	1 1
ransport Layer Security	12
lient Operating System	
pplication Virtualization	13
pplication Virtualization	14
ndpoint Devices	14
SCCP Phones	14

Unified CCX and IP IVR

SIP Phones	15
Jabber:	
Endpoints for Remote Agents	
Cisco Expressway	
Platform	
Supported Languages	
egal Information (software documentation only)	
Cisco Trademark (all documentation)	
Cisco Copyright (all documentation)	26

Unified CCX and IP IVR

Unified CCX and IP IVR

Unified CCX and IP IVR

Unified CCX and Unified IP IVR	Supported Unified UCCX and Unified IP IVR Upgrade Paths (FN 1,2)	Standalone Unified Intelligence Center	APIs
• 12.5(1) SU1 UCSInstall_UCCX_ 12_5_1_UCOS_12 .5.1.10000- 31.sgn.is0	11.6.x12.0(1)	• 12.5(1)	CTI Server- Versions 13 to 17 For Unified CCX configuration APIs and Finesse APIs, see the Cisco Unified Contact Center Express Developer Guide, located at: https://developer.cisco.c om/site/contact-center- express/.

⁽FN 1) The upgrade is also supported from any of the Engineering Specials and Service Update (SU) versions of all the mentioned Unified CCX versions.

Solution Products and Components

⁽FN 2) Unified CCX includes the co-resident Unified Intelligence Center and Finesse.

Solution Products and Components

Cisco Unified Co Manager (Unifie Business Edition 7000(FN 1)	d CM) and	Gateways for Outbound Agent and IVR (FN 2,4)	Customer Collaborati on Platform (CCP) (FN	Cisco Prime Co	llaboration	Cisco Instant Messaging and Presence (IM&P) (FN 5)	Cisco Smart Software Manager On- Prem (Cisco SSM On-Prem) (FN 10)	
11.x(FN 7)	12.x(FN 9)		6)		Prime Deployment	Prime Assurance		
• 11.5(1	12.0(1)12.5(1)	Router Series	- 12.5(1)	 11.0(1) 11.5(1) 11.6(1) 12.1(1) 12.5(1) 12.6(1) 	• 10.5(!) • 10.6(1) • 11.5(1) • 11.6(1)	• 12.5(1	• 7- 201907 • 7- 202001 (FN 8)	

(FN 1) For the Unified CM version that is supported, all the corresponding Service Update (SU) and Engineering Special (ES) releases are also supported.

(FN 2) Outbound Agent (Predictive and Progressive) and Outbound IVR are supported only on IOS versions that incorporate Call Progress Analysis. For information on Call Progress Analysis, see http://www.cisco.com/en/US/tech/tk652/tk701/tech_tech_notes_list.html.

(FN 3) CUBE is supported with the SIP Outbound Dialer and CPA; supported versions of CUBE are ISR Pi27 15.5(2), Pi28 15.5(3), Pi29 15.6(3), and Pi32 15.7(3).

(FN 4) Unified CCX Agent and IVR Outbound supports E1 R2 signaling on ISR Gateway 4451 with IOS version 15.5(3)S and later.

(FN 5) Desktop chat requires IM&P 12.5(1) and Unified CM 12.5(1).

Workforce Optimization Compatibility

- (FN 6) SocialMiner has been renamed as Customer Collaboration Platform (CCP).
- (FN 7) Minimum requirement is 11.5(SU4).
- (FN 8) Minimum requirement is Unified CCX 12.5(1) ES01.
- (FN 9) In Unified CCX, to enable SRTP in FIPS 140-2 mode, minimum requirement is Unified CM 12.5(1).
- (FN 10) Transport Gateway is not supported in Unified CCX.

Workforce Optimization Compatibility

Unified CCX	Cisco Unified Communications Manager	Compliance Recording/Advanced Quality Management (FN1,2)	Workforce Management (WFM) (FN 3)
• 12.0(1)	• 11.0(1)	• 10.0(1)	• 10.0(1)
• 12.5(1)	• 11.5(1)	• 10.5(1)	• 10.5(1)
	• 12.0(1)	• 11.0(1)	• 11.0(1)
	• 12.5(1)	• 11.5(1)	• 11.5(1)

(FN 1) Compliance Recording/Quality Management/Advanced Quality Management (CR/QM/AQM) are 32-bit applications.

- Support for the application client operation on Windows 7 64-bit machines is through WoW64 emulator mode.
- Desktop-based monitoring and recording is not supported in WoW64 mode.

(FN 2) Cisco QM has direct dependencies upon Cisco Unified Communications Manager for CTI and SIP events. Therefore, QM compatibility with Unified CM is limited to the current Unified CM version at the time of release and at least one prior version. Previous versions of QM are not generally updated for compatibility with new versions of Unified CM. Therefore, when you plan an upgrade, consult the appropriate QM Installation Guide for Unified CM compatibility. See footnote on individual QM versions to identify the Unified Communications Manager versions that are supported by that QM.

Hardware and Virtualization

(FN 3) All associated Service Updates are supported with compatible versions of WFM.

Note: Cisco Workforce Optimization licenses are not supported with Smart Licensing. Consequently, customers who upgrade to 12.5 must continue with Classic Licensing if they want to continue using Cisco WFO. Alternatively, customers who want to move to Smart Licensing for Unified CCX must consider migrating to the SolutionsPlus version of Workforce Optimization.

Hardware and Virtualization

- For information about UC Virtualization Supported Hardware, see http://www.cisco.com/c/dam/en/us/td/docs/voice ip comm/uc system/virtualization/collaboration-virtualization-hardware.html
- For information about Unified Communications in a Virtualized Environment, see http://www.cisco.com/c/dam/en/us/td/docs/voice-ip-comm/uc-system/virtualization/cisco-collaboration-virtualization.html
- For information about Virtualization for Cisco Unified Contact Center Express, see http://www.cisco.com/c/dam/en/us/td/docs/voice ip comm/uc system/virtualization/virtualization-cisco-unified-contact-center-express.html
- For information about Virtualization for Customer Collaboration Platform, see
 http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-cisco-unified-contact-center-express.html
- For information about Virtualization for Cisco Unified Intelligence Center, see http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/virtualization-cisco-unified-intelligence-center.html

Third Party Software

ASR and TTS

MRCP	VXML	Speech Servers
		Nuance

Third Party Software

MRCP	VXML	Speech Servers
		Nuance
• 1.0 • 2.0 (FN 1)	• 2.0	 Nuance Speech Server 6.2.x, 6.5.x, 7.0.2 Recognizer 10.2.x, 10.5.x, 11.0.1 Vocalizer 6.0.x, 6.2.x, 7.1.6 Nuance License Manager 11.7, 11.14.3 Nuance Management Station 5.5.1(FN 1), 6.0.1

- Latest version of the ASR-TTS packages recommended by Nuance can be used. See http://network.nuance.com/portal/server.pt. Using the latest Nuance packages will not impact the integration functionality between Unified CCX and Nuance until there is any major change by Nuance in the underlying design. However, customers must maintain the compatibility among different ASR-TTS packages as suggested by Nuance.
- Nuance Version 9.0 and later versions should use OSR 3.1.x as the Grammar Variant. Nuance 8.5 and older versions continue using "Nuance" as the Grammar Variant.

(FN 1) Nuance Management Station 5.5.1 requires Nuance Speech Server 6.5.x, Recognizer 10.5.x, Vocalizer 6.2.x, and Nuance License Manager 11.7.

Export Unified Intelligence Center Reporting

For exporting reports	Microsoft Excel 2007

Third Party Software

Microsoft Excel 2010

Wallboard Reporting

Unified CCX supports wallboard reporting. Obtain the wallboard from a Cisco-approved vendor from Cisco Marketplace: https://marketplace.cisco.com/.

Enterprise Database

Litterprise Databa
Oracle 11g R2
Oracle 12c R1
Sybase Adaptive Server 12
IBM DB2 8.2, 10.5
MS SQL Server 2012
MS SQL Server 2014
MS SQL Server 2016

Note: Unified CCX connection to external databases has been qualified only for non-encrypted connections and hence is not supported with encryption.

Enterprise Database for Unified Intelligence Center

MS SQL Server 2012	
MS SQL Server 2014	

Third Party Software

Informix Database Server 12.10.UC5W1X7(UC7X3)

Microsoft Exchange Server for Email

Microsoft Exchange Server 2013 $^{(FN\ 1)}$ - Enterprise and Standard Edition

Microsoft Exchange Server 2016 - Enterprise and Standard Edition

(FN 1) Download and install the latest cumulative update (Cumulative Update 15 for Microsoft Exchange Server 2013 (KB3197044) or higher) to support TLS version 1.2.

Cloud Based Email Services

Office 365
Gmail

Supported Single Sign-On Identity Providers

Cisco Identity Service supports the Identity Providers (IdPs) listed below and any other IdPs that comply to generic SAML 2.0 authentication as per the considerations described in the Unified CCX Solution Design Guide located at: https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-implementation-design-guides-list.html.

Supported Browsers

Federation Services)	4.0
PingFederate	8.2.2.0
OpenAM	10.0.1
Shibboleth	3.3.0
F5	13.0

Supported Browsers

	Internet Explorer 11	Firefox 68		
	Native Mode(FN 2)	Extended Support Release (ESR) and higher ESR	Chrome 76.0.3809 and higher	Microsoft Edge 41.16299.15.0 and higher
Unified CCX Administration	Yes	Yes	Yes	Yes
Cisco Finesse ^(FN 1)	Yes	Yes	Yes	Yes
Cisco Unified Intelligence Center	Yes	Yes	Yes	Yes
Cisco Unified Intelligence Center (Live Data Gadgets)	Yes	Yes	Yes	Yes
CCP Administration	Yes	Yes	Yes	Yes
Cisco Identity Service Administration	Yes	Yes	Yes	Yes

Transport Layer Security

Cisco Webex Experience Management	Refer to Experience Management to know the browsers that are supported.

⁽FN 1) The supported resolution for the Finesse desktop is 1366 x 768 or higher.

• Real Time Reporting Tool is not a browser-based application. It is a Java-based application.

Transport Layer Security

Unified CCX 12.5(1) and its components support Transport Layer Security (TLS) 1.2 for both incoming and outgoing connections.

Client Operating System

	Windows 10	Chromebook	Linux	macOS	Android	AppleiOS with Safari browser
Finesse	Yes	Yes	No	Yes 10.12, 10.13, 10.14, 10.15.x	No	No
Cisco Unified CCX Editor In- staller for Win- dows (FN 1)	Yes	No	No	No	No	No

 $^{^{(\}mbox{\scriptsize FN}\,2)}$ This is deprecated from Unified CCX 12.5 onward.

Application Virtualization

Cisco Unified CCX Editor Web Launcher	Yes	Yes	Yes	Yes	No	No

(FN 1) The Windows User launching the Cisco Unified CCX Editor must be a part of the Windows Administrator Group. Note:

- 1. For information on Jabber Client Operating System, refer to the specific versions of <u>Jabber Release Notes</u>.
- **2.** Real Time Monitoring Tool is not supported on Windows 2012 server. The supported operating systems are listed below:
- Windows 10
- Linux with KDE or GNOME client

Application Virtualization

Cisco Finesse
VMware View 5.x
Horizon View 6.x, 7.x
Citrix XenDesktop 7.x

■ The Cisco Unified Intelligence Center and Cisco Unified Contact Center Express Administration are not supported on virtual desktops.

Application Virtualization

Application Virtualization

Cisco Finesse
Citrix XenApp 7.x

Endpoint Devices

SCCP Phones

Note: From Unified CCX 12.5(1), Cisco IP Communicator is not supported for Cisco Finesse IP Phone Agent.

Cisco Unified IP Phones for Cisco Finesse (FN 2)
Cisco IP Communicator ^(FN 1)
Cisco IP Phone 6921 ^(FN 3)
Cisco IP Phone 6941 ^(FN 3)
Cisco IP Phone 6945
Cisco IP Phone 7911G
Cisco IP Phone 7925G
Cisco IP Phone 7941G
Cisco IP Phone 7942G

Cisco IP Phone 7945G
Cisco IP Phone 7961G
Cisco IP Phone 7962G
Cisco IP Phone 7965G
Cisco IP Phone 7975

⁽FN 1) For supported Cisco IP Communicator (SCCP) versions, see Cisco Unified Communications Manager Software Compatibility Matrix, available at: http://www.cisco.com/en/US/products/sw/voicesw/ps556/products-device-support-tables-list.html. (FN 2) All Cisco Finesse phones support BiB.

SIP Phones

Cisco Unified IP Phones for Cisco Finesse IP Phone Agent (FN 3,6)	End Points for Cisco Finesse (FN 1,2)
Cisco IP Phone 7811 ^(FN5)	Cisco IP Phone 6941
Cisco IP Phone 7821 ^(FN5)	Cisco IP Phone 6961
Cisco IP Phone 7841 ^(FN5)	Cisco IP Phone 7811
Cisco IP Phone 7861 (FN5)	Cisco IP Phone 7821
Cisco IP Phone 8811	Cisco IP Phone 7841

⁽FN 3) Supported on Phone Firmware Version 8.5.2 and later versions.

Cisco IP Phone 8821	Cisco IP Phone 7861
Cisco IP Phone 8841	Cisco IP Phone 7911G
Cisco IP Phone 8845	Cisco IP Phone 7941G
Cisco IP Phone 8851	Cisco IP Phone 7942
Cisco IP Phone 8861	Cisco IP Phone 7925G
Cisco IP Phone 8865	Cisco IP Phone 7942G
	Cisco IP Phone 7945G
	Cisco IP Phone 7961G-GE
	Cisco IP Phone 7962G
	Cisco IP Phone 7965G
	Cisco IP Phone 7975G
	Cisco IP Phone 8811
	Cisco IP Phone 8821
	Cisco IP Phone 8841
	Cisco IP Phone 8845

Cisco IP Phone 8851
Cisco IP Phone 8861
Cisco IP Phone 8865
Cisco IP Phone 8961
Cisco IP Phone 9951
Cisco IP Phone 9971
Cisco Jabber (FN7)
Webex Teams (FN8)
Cisco Webex DX80 (FN4)

(FN 1) All Cisco Finesse phones support BiB.

(FN 2) Cisco Finesse supports with caveats mentioned in Cisco Finesse section of the Release Notes for Unified Contact Center Express Solution, located at: http://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-release-notes-list.html

Note: The Cisco Mobile Supervisor application is withdrawn from the Cisco App Store. Cisco does not provide support for Cisco Mobile Supervisor deployments.

- (FN 3) All the Cisco IP Phones for Cisco Finesse IP Phone Agent currently do not support the Simplified New Call UI.
- (FN 4) Telepresence CE software does not support Transfer or Conference operations from Finesse.
- (FN 5) If Cisco Finesse IPPA agents use 78xx series phone, you must either disable the Cisco Finesse IPPA Inactivity Timeout feature or increase the timeout to be within the range of 120 seconds to one day (86400 seconds), so that the agent does not get logged out of Cisco Finesse IPPA even if the agent is on any other screen.
- (FN 6) Cisco Finesse IP Phone Agent is not supported over Mobile and Remote Access (MRA).
- (FN 7) Unified CCX is compatible with those Jabber versions that are compatible with the CUCM version being used with Unified CCX. The minimum

supported Cisco Jabber version is 12.5.

(FN 8) For minimum supported versions of CUCM and Expressway (for MRA deployments) to support Webex, see the Supported Unified CM Releases and the Supported Expressway Releases tables at https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cloudCollaboration/wbxt/ucmcalling/unified-cm-wbx-teams-deployment-guide_chapter_011.html.

For details of features supported with Webex Teams, refer to https://help.webex.com/en-us/n2cxa3p/Contact-Center-Integration-for-Webex-Teams.

Jabber:

- MRA support for Jabber requires minimum Cisco Jabber version 12.5 and Expressway 12.5. If you have VPN split-tunneling configured, you can use Jabber with MRA and the Finesse desktop on the same client machine. See https://www.cisco.com/c/en/us/support/security/anyconnect-secure-mobility-client/products-installation-and-configuration-guides-list.html for Cisco AnyConnect Mobility Client split-tunneling configuration.
- If VPN split-tunneling is not available, you can run Jabber with MRA and the Finesse desktop after splitting them onto two clients.
- A remote agent who runs Jabber with MRA on one client machine and the Finesse desktop with a VPN connection on a second client machine.
- A remote agent who runs a Jabber softphone on a laptop that is connected over MRA and runs the Finesse desktop as a Xenapp thin client.
- Jabber for VDI is not supported in Video Contact Center deployments.
- For Cisco Jabber software compatibility details, see the Planning guide for Cisco Jabber at https://www.cisco.com/c/en/us/support/unified-communications/jabber-windows/products-installation-guides-list.html.
- For Home Agent with Extend and Connect, set Jabber to Extend Mode so that the agents can select or edit the remote destination number.
- Cisco Jabber as an agent phone now supports Multiline (ACD and non-ACD).

Endpoints for Remote Agents

Jabber for VDI

Jabber for

Platform

Windows

Cisco Expressway

Cisco Expressway

(FN 1) For any caveats related to recording with Jabber, refer to the Mobile and Remote Access Through Cisco Expressway Deployment Guide. See, https://www.cisco.com/c/en/us/support/unified-communications/expressway-series/products-installation-and-configuration-guides-list.html.

Platform

UCOS Platform Version	Internal Unified CCX Database (IDS)	Transport Lay- er Security (TLS)	Tomcat	Open SSL	Cent OS	Java Versions Servers
CCM_FREEZE_12_5_1_12 900_73_BT4889_GIT	Informix IDS 12.10.UC9W1X3	1.2	Tomcat 7.0.94	1.0.2u.6.2.312	7.4.1708	OpenJDK 1.7.0_231 • Custom Classes/SDK • Real-Time Reporting

	ASR Grammar for Work- flow Steps	IP Phone Agent Support- ed Lan- guages	Unified Intelli- gence Cen- ter (FN 3)	Unified CCX Administra- tion	Fi- nesse	IVR Prompts	ССР	TTS	VXML Grammar	Workforce Manage- ment	Quality Manage- ment	
Arabic	No	No	No	No	No	Yes	No		Dependen t on software provided by the	No	No	
Canadian French	Yes	No	No	No	No	Yes	Yes				No	No
Cantonese	No	No	No	No	No	No	No			No	No	
Cantonese HongKong	No	No	No	No	No	Yes	No			No	No	
Chinese	No	No	No	No	No	No	No			No	No	
Czech	No	No	Yes	No	Yes	Yes	No	Dependen t on software		No	No	
Danish	No	Yes	Yes	No	Yes	Yes	Yes	provided by the		Yes	Yes	
Dutch	No	Yes	Yes	No	Yes	Yes	Yes	TTS vendor	MRCP vendor	Yes	Yes	

	Yes		i e			Yes				
English	(GB, US)	Yes	Yes (US)	Yes	Yes	(AU, CA, GB, US)	Yes		Yes	Yes
Finnish	No	Yes	Yes	No	Yes	Yes	Yes		No	No
French	Yes	Yes	Yes	No	Yes	Yes	Yes		Yes	Yes
German	Yes	Yes	Yes	No	Yes	Yes	Yes		Yes	Yes
Hebrew	No	No	No	No	No	Yes (IL)	No		No	No
Hungarian	No	No	Yes	No	Yes	Yes	No		No	No
Italian	Yes	Yes	Yes	No	Yes	Yes	Yes		Yes	Yes
Japanese	Yes	Yes	Yes	No	Yes	Yes	Yes (FN 1)		No	Yes
Korean	No	Yes	Yes	No	Yes	Yes	Yes (FN 1)		No	Yes
Malay	No	No	No	No	No	Yes	No		No	No
Chinese Mandarin	No	No	No	No	No	Yes and also Mandarin (Taiwan)	Yes (FN 1) and also in Taiwan(F N 1)		No	No

Norwegian	No	Yes	Yes	No	Yes	Yes	Yes		No	No
Polish	No	Yes	Yes	No	Yes	Yes	Yes		No	No
Portu- guese	No	Yes	Yes and also in Portuguese (Brazilian)	No	Yes	Yes (Brazilian)	Yes (Brazilian)		Yes (Brazilian)	Yes (Brazilian)
Russian	No	Yes	Yes	No	Yes	Yes	Yes		No	Yes
Simplified Chinese	No	Yes	Yes	No	Yes	No	No		No	Yes
	Yes				li .	Yes				
Spanish	(CO, ES, MX)	Yes	Yes	No	Yes	(CO, ES, MX, US)	Yes		Yes	Yes
Swedish	No	Yes	Yes	No	Yes	Yes	Yes		Yes	Yes
Thai	No	No	No	No	No	Yes	No		No	No
Traditional Chinese	No	Yes	Yes	No	Yes	No	No		No	Yes
Turkish	No	Yes	Yes	No	Yes	Yes	Yes		No	No

Serbian	No	No	Yes	No	Yes	No	No		No	No
Croatian	No	No	Yes	No	Yes	No	No		No	No
Bulgarian	No	No	Yes	No	Yes	No	No		No	No
Romanian	No	No	Yes	No	Yes	No	No		No	No
Slovenian	No	No	Yes	No	Yes	No	No		No	No
Slovakian	No	No	Yes	No	Yes	No	No		No	No
Catalan	No	No	Yes	No	Yes	No	No		No	No

⁽FN 1) Finesse IPPA supports all languages currently supported by Finesse if the phones support UTF.

Note: For the languages that are supported by Cisco Webex Experience Management, click Experience Management.

⁽FN 2) Cisco Unified Intelligence Center uses the browser locale to display the Date & Time format in the filter page. If Unified Intelligence Center does not support the browser locale language, then the locale selected in the Unified Intelligence Center application is used.

Unified CCX Software Compatibility Matrix for 12.5(1)

Legal Information (software documentation only)

Legal Information (software documentation only)

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

All printed copies and duplicate soft copies are considered un-Controlled copies and the original on-line version should be referred to for latest version.

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco website at www.cisco.com/go/offices.

Cisco Trademark (all documentation)

Cisco Trademark (all documentation)

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Cisco Copyright (all documentation)

© 2023 Cisco Systems, Inc. All rights reserved.