AVAYA

Avaya IP Office Contact Center Reference Configuration

Notice

While reasonable efforts have been made to ensure that the information in this document is complete and accurate at the time of printing, Avaya assumes no liability for any errors. Avaya reserves the right to make changes and corrections to the information in this document without the obligation to notify any person or organization of such changes.

Documentation disclaimer

"Documentation" means information published by Avaya in varying mediums which may include product information, operating instructions and performance specifications that Avaya may generally make available to users of its products and Hosted Services. Documentation does not include marketing materials. Avaya shall not be responsible for any modifications, additions, or deletions to the original published version of documentation unless such modifications, additions, or deletions were performed by Avaya. End User agrees to indemnify and hold harmless Avaya, Avaya's agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation, to the extent made by End User.

Link disclaimer

Avaya is not responsible for the contents or reliability of any linked websites referenced within this site or documentation provided by Avaya. Avaya is not responsible for the accuracy of any information, statement or content provided on these sites and does not necessarily endorse the products, services, or information described or offered within them. Avaya does not guarantee that these links will work all the time and has no control over the availability of the linked pages.

Warranty

Avaya provides a limited warranty on Avaya hardware and software. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language, as well as information regarding support for this product while under warranty is available to Avaya customers and other parties through the Avaya Support website: https://support.avaya.com/helpcenter/getGenericDetails?detailId=C20091120112456651010 under the link "Warranty & Product Lifecycle" or such successor site as designated by Avaya. Please note that if You acquired the product(s) from an authorized Avaya Channel Partner outside of the United States and Canada, the warranty is provided to You by said Avaya Channel Partner and not by Avaya.

"Hosted Service" means a hosted service subscription that You acquire from either Avaya or an authorized Avaya Channel Partner (as applicable) and which is described further in Hosted SAS or other service description documentation regarding the applicable hosted service. If You purchase a Hosted Service subscription, the foregoing limited warranty may not apply but You may be entitled to support services in connection with the Hosted Service as described further in your service description documents for the applicable Hosted Service. Contact Avaya or Avaya Channel Partner (as applicable) for more information.

Hosted Service

THE FOLLOWING APPLIES IF YOU PURCHASE A HOSTED SERVICE SUBSCRIPTION FROM AVAYA OR AN AVAYA CHANNEL PARTNER (AS APPLICABLE), THE TERMS OF USE FOR HOSTED SERVICES ARE AVAILABLE ON THE AVAYA WEBSITE, HTTPS://SUPPORT.AVAYA.COM/LICENSEINFO UNDER THE LINK "Avaya Terms of Use for Hosted Services" OR SUCH SUCCESSOR SITE AS DESIGNATED BY AVAYA, AND ARE APPLICABLE TO ANYONE WHO ACCESSES OR USES THE HOSTED SERVICE. BY ACCESSING OR USING THE HOSTED SERVICE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE DOING SO (HEREINAFTER REFERRED TO INTERCHANGEABLY AS "YOU" AND "END USER"), AGREE TO THE TERMS OF USE. IF YOU ARE ACCEPTING THE TERMS OF USE ON BEHALF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS OF USE. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT WISH TO ACCEPT THESE TERMS OF USE, YOU MUST NOT ACCESS OR USE THE HOSTED SERVICE OR AUTHORIZE ANYONE TO ACCESS OR USE THE HOSTED SERVICE. YOUR USE OF THE HOSTED SERVICE SHALL BE LIMITED BY THE NUMBER AND TYPE OF LICENSES PURCHASED UNDER YOUR CONTRACT FOR THE HOSTED SERVICE, PROVIDED, HOWEVER, THAT FOR CERTAIN HOSTED SERVICES IF APPLICABLE, YOU MAY HAVE THE OPPORTUNITY TO USE FLEX LICENSES, WHICH WILL BE INVOICED ACCORDING TO ACTUAL USAGE ABOVE THE CONTRACT LICENSE LEVEL. CONTACT AVAYA OR AVAYA'S CHANNEL PARTNER FOR MORE INFORMATION ABOUT THE LICENSES FOR THE APPLICABLE HOSTED SERVICE, THE AVAILABILITY OF ANY FLEX LICENSES (IF APPLICABLE), PRICING AND BILLING INFORMATION, AND OTHER IMPORTANT INFORMATION REGARDING THE HOSTED SERVICE.

Licenses

THE SOFTWARE LICENSE TERMS AVAILABLE ON THE AVAYA WEBSITE, HTTPS://SUPPORT.AVAYA.COM/LICENSEINFO, UNDER THE LINK "AVAYA SOFTWARE LICENSE TERMS (Avaya Products)" OR SUCH SUCCESSOR SITE AS DESIGNATED BY AVAYA, ARE APPLICABLE TO ANYONE WHO DOWNLOADS, USES AND/OR INSTALLS AVAYA SOFTWARE, PURCHASED FROM AVAYA INC., ANY AVAYA AFFILIATE, OR AN AVAYA CHANNEL PARTNER (AS APPLICABLE) UNDER A COMMERCIAL AGREEMENT WITH AVAYA OR AN AVAYA CHANNEL PARTNER. UNLESS OTHERWISE AGREED TO BY AVAYA IN WRITING, AVAYA DOES NOT EXTEND THIS LICENSE IF THE SOFTWARE WAS OBTAINED FROM ANYONE OTHER THAN AVAYA, AN AVAYA AFFILIATE OR AN AVAYA CHANNEL PARTNER; AVAYA RESERVES THE RIGHT TO TAKE LEGAL ACTION AGAINST YOU AND ANYONE ELSE USING OR SELLING THE SOFTWARE WITHOUT A LICENSE. BY INSTALLING, DOWNLOADING OR USING THE SOFTWARE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE INSTALLING, DOWNLOADING OR USING THE SOFTWARE (HEREINAFTER REFERRED TO INTERCHANGEABLY AS "YOU" AND "END USER"), AGREE TO THESE TERMS AND CONDITIONS AND CREATE A BINDING CONTRACT BETWEEN YOU AND AVAYA INC. OR THE APPLICABLE AVAYA AFFILIATE ("AVAYA").

Avaya grants You a license within the scope of the license types described below, with the exception of Heritage Nortel Software, for which the scope of the license is detailed below. Where the order documentation does not expressly identify a license type, the applicable license will be a Designated System License. The applicable number of licenses and units of capacity for which the license is granted will be one (1), unless a different number of licenses or units of capacity is specified in the documentation or other materials available to You. "Software" means computer programs in object code, provided by Avaya or an Avaya Channel Partner, whether as stand-alone products, pre-installed on hardware products, and any upgrades, updates, patches, bug fixes, or modified versions thereto. "Designated Processor" means a single stand-alone computing device. "Server" means a Designated Processor that hosts a software application to be accessed by multiple users. "Instance" means a single copy of the Software executing at a particular time: (i) on one physical machine; or (ii) on one deployed software virtual machine ("VM") or similar deployment.

License type(s)

Designated System(s) License (DS). End User may install and use each copy or an Instance of the Software only on a number of Designated Processors up to the number indicated in the order. Avaya may require the Designated Processor(s) to be identified in the order by type, serial number, feature key, Instance, location or other specific designation, or to be provided by End User to Avaya through electronic means established by Avaya specifically for this purpose.

Concurrent User License (CU). End User may install and use the Software on multiple Designated Processors or one or more Servers, so long as only the licensed number of Units are accessing and using the Software at any given time. A "Unit" means the unit on which Avaya, at its sole discretion, bases the pricing of its licenses and can be, without limitation, an agent, port or user, an e-mail or voice mail

account in the name of a person or corporate function (e.g., webmaster or helpdesk), or a directory entry in the administrative database utilized by the Software that permits one user to interface with the Software. Units may be linked to a specific, identified Server or an Instance of the Software.

Database License (DL). End User may install and use each copy or an Instance of the Software on one Server or on multiple Servers provided that each of the Servers on which the Software is installed communicates with no more than one Instance of the same database.

CPU License (CP). End User may install and use each copy or Instance of the Software on a number of Servers up to the number indicated in the order provided that the performance capacity of the Server(s) does not exceed the performance capacity specified for the Software. End User may not re-install or operate the Software on Server(s) with a larger performance capacity without Avaya's prior consent and payment of an upgrade fee.

Named User License (NU). You may: (i) install and use each copy or Instance of the Software on a single Designated Processor or Server per authorized Named User (defined below); or (ii) install and use each copy or Instance of the Software on a Server so long as only authorized Named Users access and use the Software. "Named User", means a user or device that has been expressly authorized by Avaya to access and use the Software. At Avaya's sole discretion, a "Named User" may be, without limitation, designated by name, corporate function (e.g., webmaster or helpdesk), an e-mail or voice mail account in the name of a person or corporate function, or a directory entry in the administrative database utilized by the Software that permits one user to interface with the Software.

Shrinkwrap License (SR). You may install and use the Software in accordance with the terms and conditions of the applicable license agreements, such as "shrinkwrap" or "clickthrough" license accompanying or applicable to the Software ("Shrinkwrap License").

Heritage Nortel Software

"Heritage Nortel Software" means the software that was acquired by Avaya as part of its purchase of the Nortel Enterprise Solutions Business in December 2009. The Heritage Nortel Software is the software contained within the list of Heritage Nortel Products located at https://support.avaya.com/LicenseInfo under the link "Heritage Nortel Products" or such successor site as designated by Avaya. For Heritage Nortel Software, Avaya grants Customer a license to use Heritage Nortel Software provided hereunder solely to the extent of the authorized activation or authorized usage level, solely for the purpose specified in the Documentation, and solely as embedded in, for execution on, or for communication with Avaya equipment. Charges for Heritage Nortel Software may be based on extent of activation or use authorized as specified in an order or invoice.

Copyright

Except where expressly stated otherwise, no use should be made of materials on this site, the Documentation, Software, Hosted Service, or hardware provided by Avaya. All content on this site, the documentation, Hosted Service, and the product provided by Avaya including the selection, arrangement and design of the content is owned either by Avaya or its licensors and is protected by copyright and other intellectual property laws including the sui generis rights relating to the protection of databases. You may not modify, copy, reproduce, republish, upload, post, transmit or distribute in any way any content, in whole or in part, including any code and software unless expressly authorized by Avaya. Unauthorized reproduction, transmission, dissemination, storage, and or use without the express written consent of Avaya can be a criminal, as well as a civil offense under the applicable law.

Virtualization

The following applies if the product is deployed on a virtual machine. Each product has its own ordering code and license types. Note that each Instance of a product must be separately licensed and ordered. For example, if the end user customer or Avaya Channel Partner would like to install two Instances of the same type of products, then two products of that type must be ordered.

Third Party Components

"Third Party Components" mean certain software programs or portions thereof included in the Software or Hosted Service may contain software (including open source software) distributed under third party agreements ("Third Party Components"), which contain terms regarding the rights to use certain portions of the Software ("Third Party Terms"). As required, information regarding distributed Linux OS source code (for those products that have distributed Linux OS source code) and identifying the copyright holders of the Third Party Components and the Third Party Terms that apply is available in the products, Documentation or on Avaya's website at: https://support.avaya.com/Copyright or such successor site as designated by Avaya. The open source software license terms provided as Third Party Terms are consistent with the license rights granted in these Software License Terms, and may contain additional rights benefiting You, such as modification and distribution of the open source software. The Third Party Terms shall take precedence over these Software License Terms, solely with respect to the applicable Third Party Components to the extent that these Software License Terms impose greater restrictions on You than the applicable Third Party Terms.

The following applies if the H.264 (AVC) codec is distributed with the product. THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE HTTP://WWW.MPEGLA.COM.

Service Provider

THE FOLLOWING APPLIES TO AVAYA CHANNEL PARTNER'S HOSTING OF AVAYA PRODUCTS OR SERVICES. THE PRODUCT OR HOSTED SERVICE MAY USE THIRD PARTY COMPONENTS SUBJECT TO THIRD PARTY TERMS AND REQUIRE A SERVICE PROVIDER TO BE INDEPENDENTLY LICENSED DIRECTLY FROM THE THIRD PARTY SUPPLIER. AN AVAYA CHANNEL PARTNER'S HOSTING OF AVAYA PRODUCTS MUST BE AUTHORIZED IN WRITING BY AVAYA AND IF THOSE HOSTED PRODUCTS USE OR EMBED CERTAIN THIRD PARTY SOFTWARE, INCLUDING BUT NOT LIMITED TO MICROSOFT SOFTWARE OR CODECS, THE AVAYA CHANNEL PARTNER IS REQUIRED TO INDEPENDENTLY OBTAIN ANY APPLICABLE LICENSE AGREEMENTS, AT THE AVAYA CHANNEL PARTNER'S EXPENSE, DIRECTLY FROM THE APPLICABLE THIRD PARTY SUPPLIER.

WITH RESPECT TO CODECS, IF THE AVAYA CHANNEL PARTNER IS HOSTING ANY PRODUCTS THAT USE OR EMBED THE G.729 CODEC, H.264 CODEC, OR H.265 CODEC, THE AVAYA CHANNEL PARTNER ACKNOWLEDGES AND AGREES THE AVAYA CHANNEL PARTNER IS RESPONSIBLE FOR ANY AND ALL RELATED FEES AND/OR ROYALTIES. THE G.729 CODEC IS LICENSED BY SIPRO LAB TELECOM INC. SEE WWW.SIPRO.COM/CONTACT.HTML. THE H.264 (AVC) CODEC IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO: (I) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (II) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION FOR H.264 (AVC) AND H.265 (HEVC) CODECS MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE HTTP://WWW.MPEGLA.COM.

Compliance with Laws

Customer acknowledges and agrees that it is responsible for complying with any applicable laws and regulations, including, but not limited to laws and regulations related to call recording, data privacy, intellectual property, trade secret, fraud, and music performance rights, in the country or territory where the Avaya product is used.

Preventing Toll Fraud

"Toll Fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there can be a risk of Toll Fraud associated with your system and that, if Toll Fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Toll Fraud intervention

If You suspect that You are being victimized by Toll Fraud and You need technical assistance or support, call Technical Service Center Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. For additional support telephone numbers, see the Avaya Support website: https://support.avaya.com or such successor site as designated by Avaya.

Security Vulnerabilities

Information about Avaya's security support policies can be found in the Security Policies and Support section of https://support.avaya.com/security.

Suspected Avaya product security vulnerabilities are handled per the Avaya Product Security Support Flow (https://support.avaya.com/css/P8/documents/100161515).

Downloading Documentation

For the most current versions of Documentation, see the Avaya Support website: https://support.avaya.com, or such successor site as designated by Avaya.

Contact Avaya Support

See the Avaya Support website: https://support.avaya.com for product or Hosted Service notices and articles, or to report a problem with your Avaya product or Hosted Service. For a list of support telephone numbers and contact addresses, go to the Avaya Support website: https://support.avaya.com (or such successor site as designated by Avaya), scroll to the bottom of the page, and select Contact Avaya Support.

Trademarks

The trademarks, logos and service marks ("Marks") displayed in this site, the Documentation, Hosted Service(s), and product(s) provided by Avaya are the registered or unregistered Marks of Avaya, its affiliates, or other third parties. Users are not permitted to use such Marks without prior written consent from Avaya or such third party which may own the Mark. Nothing contained in this site, the Documentation, Hosted Service(s) and product(s) should be construed as granting, by implication, estoppel, or otherwise, any license or right in and to the Marks without the express written permission of Avaya or the applicable third party.

Avaya is a registered trademark of Avaya Inc.

All non-Avaya trademarks are the property of their respective owners. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Contents

Chapter 1: Introduction

Purpose

This document describes IP Office Contact Center network, architecture, suggested deployment topologies, system capacities and product interoperability. This document also describes the functional limitations of specific configurations. With this information, sales design specialists can make decisions about designs that meet the business needs of a customer.

Intended audience

This document is intended for people who determine the best IP Office Contact Center design to meet a customer's business needs.

Document changes since last issue

The following changes have been made to this document in this release:

- Updated server specifications and increased memory requirements. Ensure your server meets the latest specifications.

- Increased memory requirement for IP Office Contact Center User Interface for Chrome Devices to 4 GB.

- Referenced IP Office Contact Center port matrix document.

Related links

Related resources

Documentation

See the following related documents at the Avaya Support website at http://support.avaya.com.

* **Note:**

    Some documents are restricted and might not be available to all users.

Document title	Use this document to:	Audience
Overview		
Avaya IP Office Contact Center Feature Description	Understand IP Office Contact Center features and capabilities.	All users
Avaya IP Office Contact Center Documentation Catalog	Understand the structure of IP Office Contact Center documentation, and determine which document you should reference to obtain information on a specific subject.	All users
Planning		
Avaya IP Office Contact Center Reference Configuration	Understand IP Office Contact Center deployment topologies, network architecture, system capacities, product interoperability, and functional limitations of specific configurations.	• Sales and support personnel • Architects • Implementation engineers
Deploying		
Avaya IP Office Contact Center Installation Task Based Guide	Install IP Office Contact Center software.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center Telephony User Interface Configuration Task Based Guide	Configure IP Office Contact Center telephony.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center Contact Recorder Configuration Task Based Guide	Configure interoperability between IP Office Contact Center and Avaya Contact Recorder.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center Dialer Task Based Guide	Configure IP Office Contact Center dialer functionality.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center Task Flow Editor Telephony Task Based Guide	Configure the Task Flow Editor module for IP Office Contact Center telephony.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center IVR Scenarios Task Based Guide	Configure the IVR Editor module. This document also describes IVR editor script options and how to configure each option.	• Support personnel • Implementation engineers

Document title	Use this document to:	Audience
Avaya IP Office Contact Center Email and Chat Services Task Based Guide	Configure email and chat services. You must complete this configuration before you can use email and IM functionality on the IP Office Contact Center user interface.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center Reporting Task Based Guide	Configure the IP Office Contact Center Reporting module.	• Support personnel • Implementation engineers
Administering		
Using Avaya IP Office Contact Center Web Administration Portal	Understand how to use the web-based administration portal.	• Support personnel • Administrators
Avaya IP Office Contact Center Task Tag Reference	Understand task tags and their meanings.	• Support personnel • Implementation engineers
Avaya IP Office Contact Center Statistics Counter Reference	Understand the statistics counters.	• Support personnel • Implementation engineers
Administering Avaya IP Office Contact Center Configuration Module	Perform administration tasks on the Configuration module. With the Configuration module, you can update information for agents, teams, announcements, voice units, customers, destinations, and devices in the IP Office Contact Center interface. You can also assign privileges to agents and agent groups. ✱ **Note:** This document is also available as a help system through the product interface.	Administrators
Administering Avaya IP Office Contact Center Dialer	Administer and use the Dialer module in the IP Office Contact Center interface. ✱ **Note:** This document is also available as a help system through the product interface.	Administrators
Administering Avaya IP Office Contact Center Task Flow Editor	Create and edit task flow editor scripts. ✱ **Note:** This document is also available as a help system through the product interface.	Administrators
Administering Avaya IP Office Contact Center IVR Editor	Create and edit IVR editor scripts.	Administrators

Document title	Use this document to:	Audience
	Note: This document is also available as a help system through the product interface.	
Administering Avaya IP Office Contact Center Text Blocks	Create, edit, and administer text blocks for the IP Office Contact Center email feature. **Note:** This document is also available as a help system through the product interface.	Administrators
Administering Avaya IP Office Contact Center Address Book	Administer address books in the IP Office Contact Center interface. The address book feature simplifies agent tasks such as making calls and sending emails. **Note:** This document is also available as a help system through the product interface.	Administrators
Supporting		
Avaya IP Office Contact Center Maintenance Task Based Guide	Perform maintenance and upgrade tasks.	• Support personnel • Implementation engineers • Administrators
Avaya IP Office Contact Center Error Reference	Understand error codes and their meanings.	• Support personnel • Implementation engineers • Administrators
Using		
Using Avaya IP Office Contact Center for Windows	Use the IP Office Contact Center User Interface for Windows. **Note:** This document is also available as a help system through the product interface.	All interface users, including agents, supervisors, and administrators.
Using the Avaya IP Office Contact Center Chrome and Web Interfaces	Use the IP Office Contact Center User Interface for Chrome Devices.	Agents and supervisors.
Using Avaya IP Office Contact Center Wallboard	Use Wallboard functionality.	All interface users, including agents, supervisors, and administrators.

Finding documents on the Avaya Support website

About this task

Use this procedure to find product documentation on the Avaya Support website.

Procedure

1. Use a browser to navigate to the Avaya Support website at http://support.avaya.com/.

2. At the top of the screen, enter your username and password and click **Login**.

3. Put your cursor over **Support by Product**.

4. Click **Documents**.

5. In the **Enter your Product Here** search box, type the product name and then select the product from the drop-down list.

6. If there is more than one release, select the appropriate release number from the **Choose Release** drop-down list.

7. Use the **Content Type** filter on the left to select the type of document you are looking for, or click **Select All** to see a list of all available documents.

   For example, if you are looking for user guides, select **User Guides** in the **Content Type** filter. Only documents in the selected category will appear in the list of documents.

8. Click **Enter**.

Training

You can access training courses and credentials at http://www.avaya-learning.com. To search for a course, after logging in to the website, enter the course code or the course title in the **Search** field and press **Enter** or click **>**.

Table 1: IP Office Contact Center courses and certification credentials

Course code	Course title
ACSS-3003	ACSS — IP Office Contact Center credential
AIPS-4000	AIPS — IP Office Platform credential
ACSS-3000	ACSS — Avaya Midmarket Communications credential
4001	Avaya IP Office Platform Implementation Test
3002	Avaya IP Office Platform Configuration and Maintenance Exam
3003	Avaya IP Office Contact Center Implementation and Maintenance Exam
8S00010E	Knowledge Access: Avaya IP Office Contact Center Implementation and Support.
0S00100E	Knowledge Access: Avaya IP Office Contact Center Administration
0S00010E	Knowledge Collection Access: Avaya Midmarket Implementation and Support

Course code	Course title
8S00010I	Fast Track: Avaya IP Office Contact Center Implementation and Support Instructor Led
8S00010V	Fast Track: Avaya IP Office Contact Center Implementation and Support Virtual Instructor Led
10S00005E	Knowledge Access: Avaya IP Office Contact Center Platform Implementation
5S00004E	Knowledge Access: Avaya IP Office Contact Center Platform Support
2251E	Knowledge Access: Avaya IP Office Contact Center Platform Administration
2252C	Avaya IP Office Contact Center Expanded Configuration and Administration

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

Procedure

- To find videos on the Avaya Support website, go to http://support.avaya.com and perform one of the following actions:

  - In **Search**, type `Avaya Mentor Videos` to see a list of the available videos.

  - In **Search**, type the product name. On the Search Results page, select **Video** in the **Content Type** column on the left.

- To find the Avaya Mentor videos on YouTube, go to www.youtube.com/AvayaMentor and perform one of the following actions:

  - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.

  - Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the website.

  ⊛ **Note:**

    Videos are not available for all products.

Support

Go to the Avaya Support website at http://support.avaya.com for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service

request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Chapter 2: IP Office Contact Center overview

Avaya is the market leader in call center technology, and IP Office Contact Center can take your business to a new level. IP Office Contact Center provides integrated contact center capabilities specifically designed for businesses supporting between 5 and 250 contact center agents and supervisors.

IP Office Contact Center provides the following features and characteristics:

- All-in-one customer service solution that delivers consistent service to customers across multiple media channels and locations. IP Office Contact Center includes a user interface (UI) on Microsoft Windows, a Chrome UI for Chrome OS devices, and a web interface supported on multiple browsers with Windows and Mac.

  The IP Office Contact Center User Interface for Chrome Devices and IP Office Contact Center Web User Interface provide similar functionality.

- Fast implementation with minimum disruption to the business. IP Office Contact Center also includes an automatic synchronization feature for configuration. This feature can be enabled and disabled as needed during implementation.

- Access to Agent UI functionality, including call control, from a SalesForce (SFDC) plug-in or SAP CRM connector.

- Access to call control options with a Plantronics headset if you are using IP Office Contact Center User Interface for Chrome Devices.

- Email and chat capabilities on all UIs.

- Inbound and outbound voice calls with telephony and dialer capabilities.

- Skills-based routing.

- Address book access so agents can quickly find the contact information they need to make calls and send emails.

- Real time and historical reporting for all media channels.

- Interactive Voice Response (IVR) and Task Flow Editor scripts.

- User profile and agent group privilege configuration to determine which features are available to users of the interface. Administrators must assign privileges and create agent groups.

- Access to a web-based administration portal. You can use the administration portal to perform initial configuration, upload certificates, collect logs, and download email archives and the IP Office Contact Center User Interface for Windows. Advanced administration tasks must be

performed in the IP Office Contact Center User Interface for Windows. You cannot perform administration tasks with the IP Office Contact Center User Interface for Chrome Devices and IP Office Contact Center Web User Interface.

- Optional integration with Avaya Contact Recorder. Calls are recorded with Voicemail Pro and the details of the complete recording are stored in the Avaya Contact Recorder database. You can search for and manage recordings using a web browser.

- Option to easily integrate chat functionality into a web page. For more information, see *Avaya IP Office Contact Center Email and Chat Services Task Based Guide*.

- Access to a wallboard that displays IP Office Contact Center statistics. For more information about Wallboard, see *Using Avaya IP Office Contact Center Wallboard*.

Topology

IP Office Contact Center can be deployed using the following deployment configurations and options:

Configuration	Deployment options	Agents and trunks
IP Office Contact Center with IP500V2	IP500V2, IP Office Contact Center server, and an application server	Up to 30 agents on SIP and digital trunks.
IP Office Contact Center with IP Office Server Edition	IP Office Server Edition server and IP Office Contact Center server *and/or* a Linux expansion server (optional) *or* Hosted as a service in a cloud environment	Up to 250 agents on SIP trunks. Only 125 agents can be deployed on each Linux expansion node.
IP Office Contact Center with IP Office Server Edition and IP500V2 expansion	IP Office Server Edition server, IP500V2 expansion server, and IP Office Contact Center server	Up to 250 agents on SIP and digital trunks. Only 30 agents can be deployed on each IP500V2 node.
IP Office Contact Center with IP Office Server Edition in a distributed environment	IP Office Server Edition server, IP500V2 expansion server, IP Office Contact Center server, and a Linux expansion in a distributed environment	Up to 250 agents on SIP and digital trunks. Up to 30 agents can be deployed on each IP500V2 node, and up to 125 agents can be deployed on each Linux expansion node. Agents and trunks are distributed on any expansion server.

IP Office Contact Center IP500V2 topology

To support up to 30 agents using any supported endpoint on SIP or digital trunks, use the IP Office Contact Center IP500 V2 deployment configuration. This configuration supports Voicemail Pro, Avaya Contact Recorder, and WebRTC gateway on the Applications server. You require an additional hard disk drive (HDD) for Avaya Contact Recorder on the Applications server. IP Office Contact Center can be deployed on an Avaya-supplied server or a customer-supplied server in a virtualized environment.
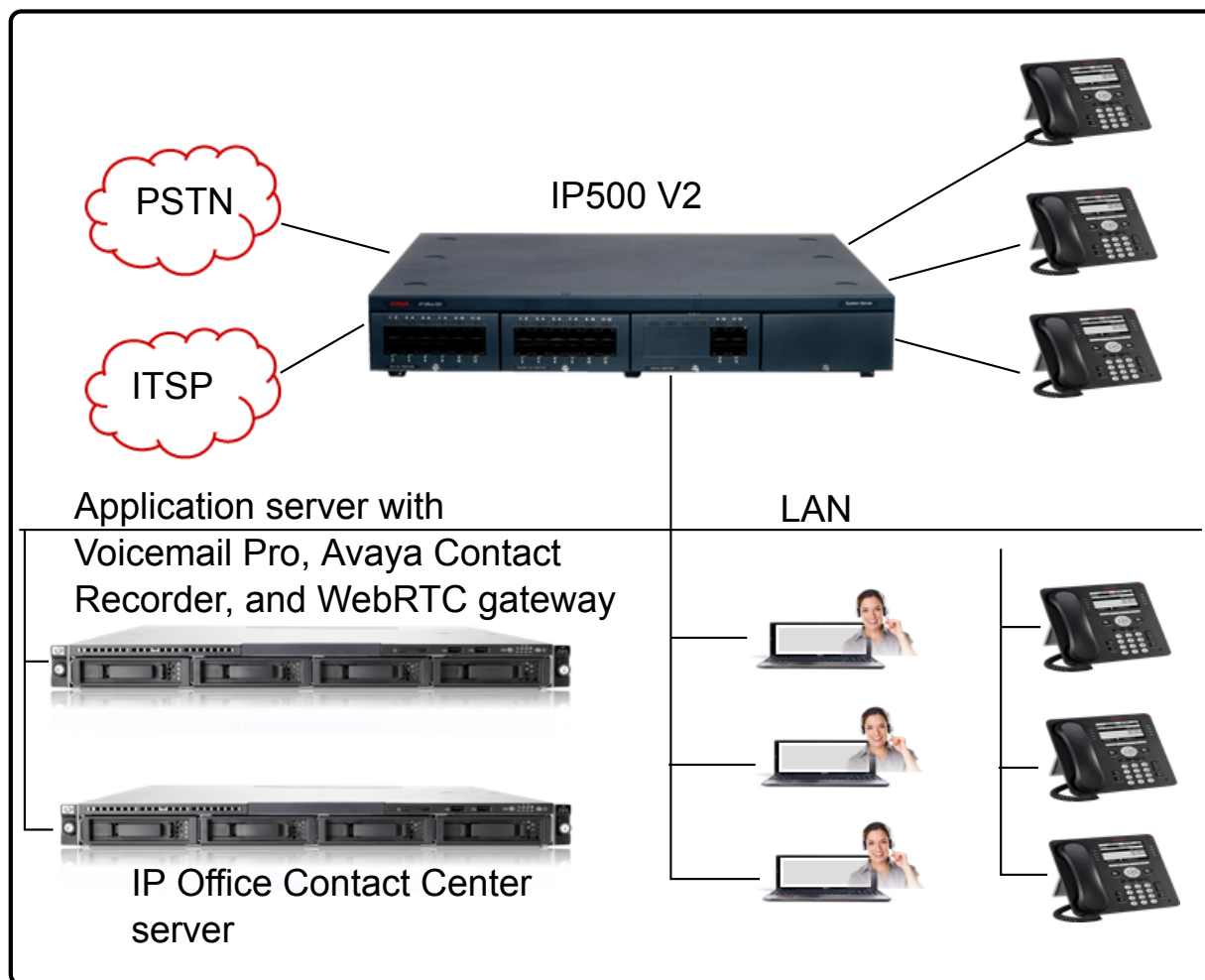

Figure 1: IP Office Contact Center IP500 V2 topology

IP Office Server Edition topology

To support up to 250 agents using supported IP endpoints on SIP trunks, use the IP Office Server Edition deployment configuration.

All IP Office Server Edition configuration options support Voicemail Pro, Avaya Contact Recorder, and WebRTC gateway on IP Office Server Edition. A secondary IP Office Server Edition server can be present, but IP Office Contact Center must be connected to the primary server. You require an additional HDD for Avaya Contact Recorder on the IP Office Server Edition server. IP Office Contact Center can be deployed on a small or large Avaya-supplied server, or a customer-supplied server in a virtualized environment.

* **Note:**

    If Avaya one-X® Portal for IP Office is deployed on the Applications Server, then you can also deploy Avaya Contact Recorder there.
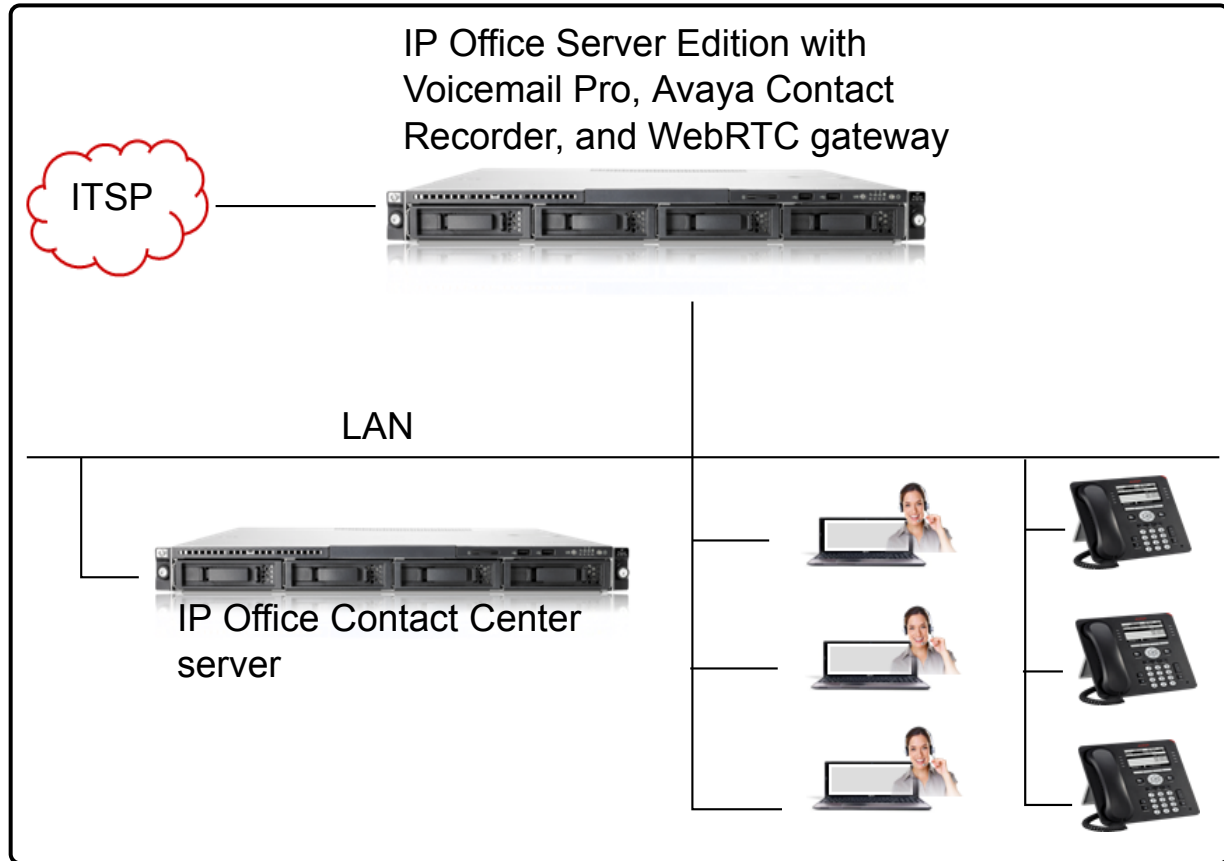

Figure 2: IP Office Server Edition topology

IP Office Server Edition with Linux expansion topology

A Linux expansion unit can be used as an alternative configuration. This configuration supports up to 250 agents on SIP trunks using IP endpoints. Only 125 agents are supported on the Linux expansion server.
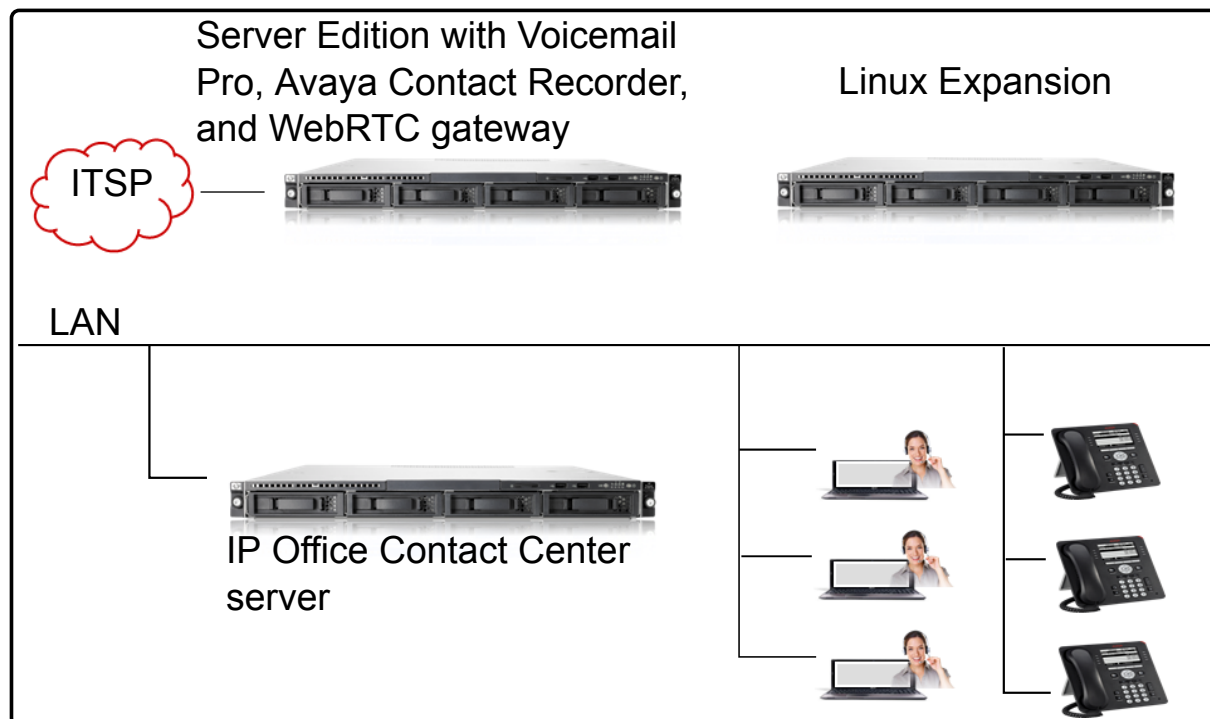
All IP Office Server Edition configuration options support Voicemail Pro, Avaya Contact Recorder, and WebRTC gateway on IP Office Server Edition. A secondary IP Office Server Edition server can be present, but IP Office Contact Center must be connected to the primary server. You require an additional HDD for Avaya Contact Recorder on the IP Office Server Edition server. IP Office Contact

Center can be deployed on a small or large Avaya-supplied server, or a customer-supplied server in a virtualized environment.

✳ **Note:**

If Avaya one-X® Portal for IP Office is deployed on the Applications Server, then you can also deploy Avaya Contact Recorder there.

Figure 3: IP Office Server Edition with Linux expansion topology

IP Office Server Edition cloud topology

In the cloud environment, providers host the equipment in a cloud data center, and supply IP Office Contact Center functionality to enterprises as a service. For more information, see *OnAvaya™ and Powered by IP Office and IP Office Contact Center Reference Configuration for Business Partners*.
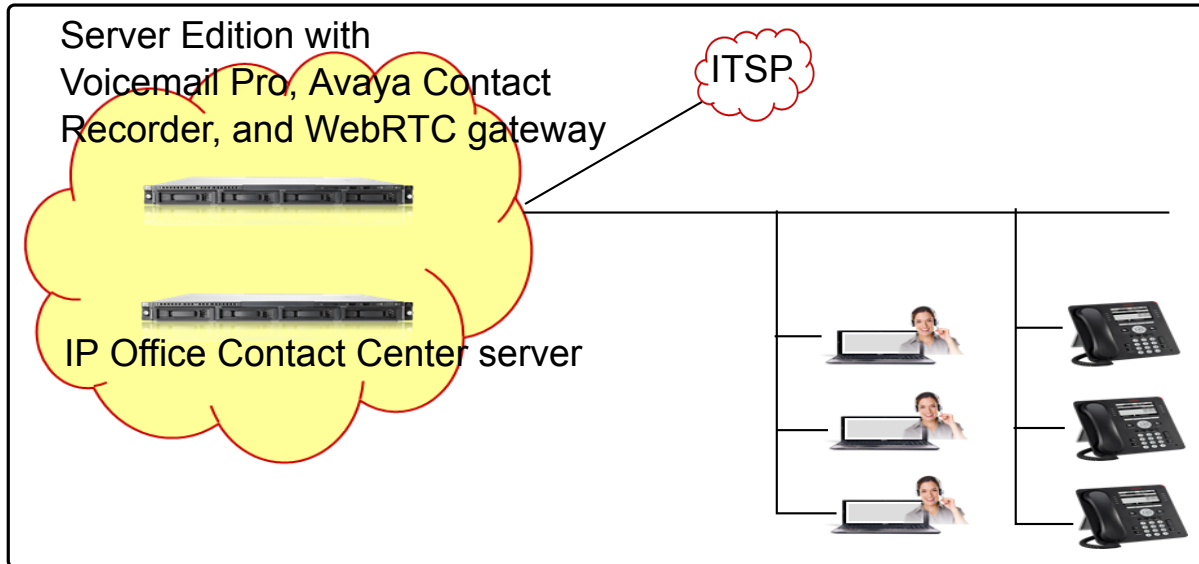
Figure 4: IP Office Server Edition cloud topology

IP Office Server Edition with IP500V2 expansion topology

An alternative configuration option is the IP Office Server Edition and IP500V2 expansion deployment. This deployment supports up to 250 agents on any supported endpoint using SIP or digital trunks. Only 30 agents are supported on IP500V2.

All IP Office Server Edition configuration options support Voicemail Pro, Avaya Contact Recorder, and WebRTC gateway on IP Office Server Edition. A secondary IP Office Server Edition server can be present, but IP Office Contact Center must be connected to the primary server. You require an additional HDD for Avaya Contact Recorder on the IP Office Server Edition server. IP Office Contact Center can be deployed on a small or large Avaya-supplied server, or a customer-supplied server in a virtualized environment.

❋ **Note:**

If Avaya one-X® Portal for IP Office is deployed on the Applications Server, then you can also deploy Avaya Contact Recorder there.
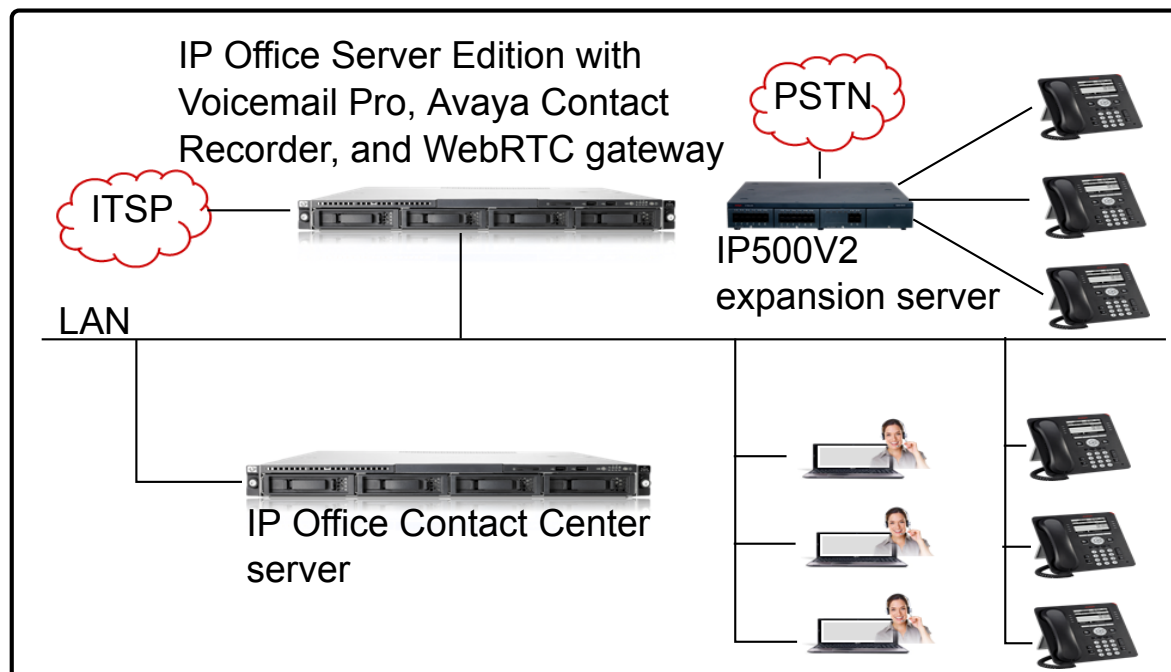
Figure 5: IP Office Server Edition with IP500V2 expansion topology

IP Office Server Edition with distributed expansion topology

IP Office Contact Center can be deployed in a distributed environment. The distributed configuration supports up to 250 agents using any supported endpoint on SIP and digital trunks. However, IP500V2 supports a maximum of 30 agents and the Linux expansion server supports a maximum of 125 agents. In this configuration, agents and trunks are distributed on any expansion server.

All IP Office Server Edition configuration options support Voicemail Pro, Avaya Contact Recorder, and WebRTC gateway on IP Office Server Edition. A secondary IP Office Server Edition server can be present, but IP Office Contact Center must be connected to the primary server. You require an additional HDD for Avaya Contact Recorder on the IP Office Server Edition server. IP Office Contact Center can be deployed on a small or large Avaya-supplied server, or a customer-supplied server in a virtualized environment.

 Note:

If Avaya one-X® Portal for IP Office is deployed on the Applications Server, then you can also deploy Avaya Contact Recorder there.
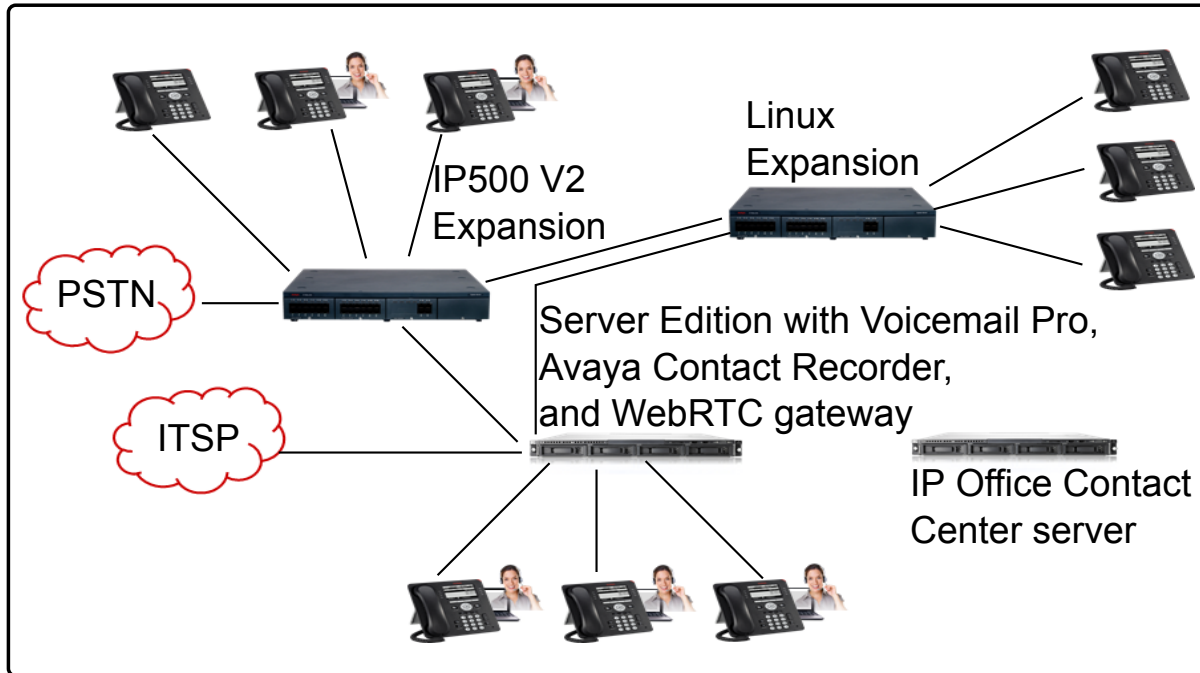
Figure 6: IP Office Server Edition with expansion servers in a distributed topology

Components

The following table describes supported IP Office Contact Center components. For information about supported versions of each component, see the IP Office Contact Center interoperability matrix at https://secureservices.avaya.com/compatibility-matrix/menus/product.xhtml?name=IP+Office+Contact+Center.

Component	Platform	Description
Infrastructure		
IP Office Contact Center server	Supplied by Avaya Business Partner or customer.	Contains: • WebLM and license clients • Contact Center Tomcat • Naming service • Trace system • Watchdog • Service tools • UI Session Manager • Common Hardware Abstraction Platform (CHAP) • PBX task server

Component	Platform	Description

		• IP Office Task server
		
		• Contact Center applications
		
		• IVR components
		
		• Address Book server
		
		• UM
		
		• Email routing
		
		• Statistics generator and viewer
		
		• Web Service Collection
		
		• PostGreSQL database and other supported databases including the following:
		
		  - Task Reporting (tr) database
		
		  - Address book
		
		  - Chat (media store) database
		
		  - UM (C3000) database
		
		  - UM Archive database
		
		• OpenJDK
		
		• Unified Media email components
		
		• Chat task server
		
		• Interactive Voice Response (IVR) components
		
		• Software drivers

IP Office server	IP500V2 (up to 30 agents) or IP Office Server Edition small server (up to 100 agents) or IP Office Server Edition large server (up to 250 agents) or Virtual Machine	Functions as a call center solution for telephony tasks and Voicemail Pro. This server must be the primary server and it can be used for other nodes.
Avaya Contact Recorder server (optional)	Avaya Contact Recorder is not installed on the IP Office Contact Center server by default. However, you can add Avaya Contact Recorder to an IP500V2 server or on the	You can add Avaya Contact Recorder to the IP Office Server Edition or Application Server associated with IP500V2. You require a second, separate hard drive for Avaya Contact Recorder. You cannot

Component	Platform	Description
	primary server in an IP Office Server Edition deployment.	share the same hard drive that is used for Voicemail Pro.
Extensible Messaging and Presence Protocol (XMPP) application server	The customer can provide their own XMPP server or use the server installed on Avaya one-X® Portal for IP Office.	Provides Chat functionality.
Endpoints		
Avaya desk phones	The following hard desk phones are supported: • 1400 series • 1600 series • 9500 series • 96x0 H.323 IP phone series • 96x1 H.323 IP phone series	IP Office Contact Center can interwork with these supported desk phones.
Soft phones	The Avaya Communicator for Windows soft phone is supported. ⊛ **Note:** The IP Office Video Soft phone is deprecated in IP Office 9.1 and is no longer available. For customers upgrading to IP Office and IP Office Contact Center 9.1 or higher, the IP Office Video soft phone is still supported.	IP Office Contact Center can interwork with an Avaya Communicator for Windows soft phone.
Applications		
Administration portal	Web-based administration portal.	You can use the administration portal to perform initial configuration, upload certificates, collect logs, and download email archives and the IP Office Contact Center User Interface for Windows. For more information, see *Using Avaya IP Office Contact Center Web Administration Portal*. ⊛ **Note:** Advanced administration tasks must be performed in the IP Office Contact Center User Interface for Windows. These types of tasks cannot be performed on this web portal.

Component	Platform	Description
IP Office Contact Center user interfaces	Included with the IP Office Contact Center server. The following interfaces are available: • IP Office Contact Center User Interface for Windows • IP Office Contact Center User Interface for Chrome Devices, also known as the Chrome UI • IP Office Contact Center Web User Interface IP Office Contact Center User Interface for Chrome Devices: • Supports WebRTC or Avaya desk phones. • Runs on devices with Chrome OS version 37 or later. IP Office Contact Center Web User Interface supports multiple browsers on Windows and Mac operating systems. Supported phones vary depending on the browser and OS you are using.	• IP Office Contact Center User Interface for Windows is a full featured interface for agents, supervisors, and administrators. Administration tasks include assigning privileges to agents and agent groups, and administering system topics or objects. • IP Office Contact Center User Interface for Chrome Devices and IP Office Contact Center Web User Interface are simplified interfaces for agents and supervisors.
IP Office Contact Center plug-ins and connectors	IP Office Contact Center supports a Salesforce (SFDC) CRM plug-in and SAP CRM connector. ✱ **Note:** The SFDC plug-in is not supported on Internet Explorer.	The SFDC plug-in and SAP connector provide agent UI functionality, including call control.
IP Office Contact Center Wallboard	IP Office Contact Center provides a web-based Wallboard application.	Wallboard allows you to view and organize statistics. You can access the Wallboard with different user roles. For more information about using and customizing Wallboard, see *Using Avaya IP Office Contact Center Wallboard*.
Other software		
Microsoft Excel	Provided by the customer	To create the `Dataimport.exe` and `.csv` files.

Customer requirements

IP Office Contact Center is a preconfigured solution designed for call center agents and supervisors. This solution meets the following customer requirements:

- Support for up to 250 agents using supported hard and soft endpoints.
- SIP only and SIP and digital hybrid trunking environments.
- Voice mail and contact recording applications reside on Avaya-provided servers.
- Distributed and cloud configuration options.

Use the following table to determine which deployment configuration matches your requirements.

Requirement	IP500V2	IP Office Server Edition	IP Office Server Edition with expansion
Hybrid environment with SIP and digital trunks	✔		✔
SIP only trunks	✔	✔	✔
30 agents or less	✔		
Between 30 and 250 agents		✔	✔
Distributed environment			✔
Cloud environment		✔	
Linux expansion server		✔	✔

Chapter 3: Design considerations

Caveats and limitations

The following known caveats and limitations exist for IP Office Contact Center.

Virtualization redundancy and high availability

Virtualized OVA deployments of IP Office Contact Center do not support fault tolerance. High availability (HA) is supported as long as the instance shares the same database.

Salesforce plug-in limitations

- When a Preview Dialer job is created, the agent does not see a Preview screen in the SFDC plug-in. The agent cannot preview customer information, and choose whether to make or decline the call. Instead, after the preview time configured expires, the call is made automatically.

- When an agent is on a call, a window with customer information displays. The plug-in seems to freeze, and the agent cannot enter digits in the **Dial Pad** field. The agent must click somewhere in the SFDC area of the screen to unfreeze the plug-in, and then enter digits in the **Dial Pad** field.

- The SFDC plug-in does not support short codes.

WebRTC limitations

- The WebRTC gateway does not support resiliency.

- IP Office Contact Center User Interface for Chrome Devices agents using an integrated WebRTC phone do not hear approximately 1 second of recording warnings. The customer does not experience this delay and is able to hear the recording warning properly.

Device and terminal limitations

Agents: When an agent logs into a device, the following functions are turned off on the device:

- Diversion

  Only the call diversion is turned off. You can adjust the call diversion through TAPI.

- Do Not Disturb

  If an agent is on a terminal with Do Not Disturb enabled, then the terminal is logged out of the system and all agent groups. If the agent logs back to an agent group, then Do Not Disturb is disabled.

Diversion to the mailbox: The ringing timeout time must be shorter than the call time. The call is redirected to the mailbox and then returned to the queue.

Call forwarding: You must turn off call forwarding for CHAP devices.

Waiting queues: The number of waiting positions in IP Office Contact Center is limited by hardware restrictions, such as the following:

- Servers that support up to 100 agents can support up to 120 queue devices.
- Servers that support 100 to 250 agents can support up to 300 queue devices.

The following limitations also exist for waiting queues:

- In a task flow, if Welcome announcements are played for each incoming topic call, the number of waiting positions is reduced.
- You must determine the number of free announcement channels in a task flow before routing to an announcement. Disconnect if agents and announcement channels are unavailable.
- You must ensure enough queue devices are available for incoming calls if you are using parallel dialer for outbound calls.

Phone monitoring: A TAPI deamon supports a maximum of 1500 lines. You can only monitor up to 1500 telephones.

Incoming topic calls: When you are using a soft phone with IP Office Contact Center, you cannot hang up an incoming topic call from the IP Office Contact Center interface. You must hang up the call from the soft phone.

Call actions in topic calls: Perform call actions in the IP Office Contact Center interface. Do not use short codes for topic calls. For more information, see Topic call best practices on page 27.

Simultaneous mode with Avaya Communicator for Windows

Simultaneous mode is not supported when an agent is logged in with Avaya Communicator for Windows. You cannot be logged in to other endpoints while you are logged in to Avaya Communicator for Windows.

Simultaneous mode with WebRTC

Simultaneous mode is not supported when an agent is logged in with WebRTC. You cannot be logged in to other endpoints while you are logged in to WebRTC.

Automatic synchronization

When automatic synchronization is enabled, if you change your CHAP SIP extension, you must manually delete the old IP Office short code for topic calls to work properly.

Deployments with IP Office Essential Edition

The following features are unavailable when IP Office Contact Center interworks with IP Office Essential Edition.

- Line reporting and real-time line information
- Coaching due to Silent Real-Time Information
- User numbers
- Overriding agent call diversion by ACD calls
- Multiple task server instances on one server
- Serial call
- Reporting counters
- Hold announcements

- Direct incoming call announcements
- Transferred call announcements

> ⊛ **Note:**
>
> IP Office Contact Center directly supports reporting counters.

The following features function differently when IP Office Essential Edition works within this reference configuration:

- If you route a call to a busy external destination, the call is canceled. The call does not reset in the queue.
- If you restart the PBX task server, agents who logged in before you restarted the server are logged out.
- You cannot set up a diversion from a telephone to a topic.

Related links

Topic call best practices

Avoid using short codes for IP Office Contact Center topic calls distributed to agents. Instead of using short codes, use the following best practices:

Call pickup

You can drag and drop or right-click the calls you want to pick up with the IP Office Contact Center Realtime Information module.

Call park

In the UI, transfer the call you want to park into a special topic. This way, IP Office Contact Center objects, such as the original topic and call tags, will not be lost.

Call steal

Avoid using call steal for a topic call. This functionality can be blocked depending on your system configuration.

Call transfer

Do not perform call transfers with your phone. Instead, use the **Consultation** and **Transfer** buttons in the UI.

Hold

For routed topic calls, use the **Hold** button to put a call on hold and to retrieve the call.

Dial inclusion

Do not use this functionality in IP Office Contact Center. You should not bring external customers onto the call.

Conference MeetMe

Use the **Consultation** and **Conference** buttons in the UI.

Functionality differences between IP Office Contact Center user interfaces

- IP Office Contact Center User Interface for Chrome Devices does not support video, email, and chat functionality.
- When a supervisor uses the IP Office Contact Center User Interface for Windows and an agent uses the IP Office Contact Center User Interface for Chrome Devices, the supervisor can log the agent out. However, the supervisor cannot log the agent back in to the UI.
- When a supervisor uses the IP Office Contact Center User Interface for Chrome Devices and an agent uses either UI, the supervisor cannot log agents in or out.

Capacity and scalability

Table 2: IP Office Contact Center for IP500V2 and IP Office Server Edition deployments

	Server Edition with small IP Office Contact Center server	Server Edition with large IP Office Contact Center server
Active agents (all media)	100	250
BHCC	4000	5000
Mail per hour	1000	2500
Chat per hour	1250	3250
Configured agents	500	1250
Voice calls queued	90	125
Calls being recorded	100	250
Wallboards	25	40

> **Note:**
>
> If you use all task types, the number of call, email, and chat session tasks must not exceed 5000.

Related links

Server specifications on page 29

IP Office Contact Center User Interface for Chrome Devices requirements on page 30

Capacity upgrade requirements on page 31

Server specifications

Customers can provide their own servers for IP Office Contact Center. The server must meet the minimum requirements specified in the following tables. For information about upgrading your server capacity, see Capacity upgrade requirements on page 31.

Table 3: ISO specifications

The following table provides the minimum ISO deployment requirements.

Component	Less than 100 agents	100 to 250 agents
Operating system	Windows Server 2008 R2 Standard 64–bit Edition SP1 Windows Server 2012 R2 Standard 64–bit Edition	
Processor	Quadcore 3.1 GHz	2x SixCore 2.6 GHz
Memory	16 GB	32 GB
Hard drive ⊛ **Note:** Avaya recommends adding an additional hard disk drive (HDD) and Raid to support IP Office Contact Center.	1 Seagate ST500DM002 500 GB 7200 RPM, SATA 6 G 16 MB Cache	2x 900 GB (Raid 1)
RAID controller	Any RAID controller	Any RAID controller
Media	DVD-ROM drive	DVD-ROM drive
Keyboard	Multifunction keyboard	Multifunction keyboard
Network	1 NIC 1 GB uplink ⊛ **Note:** IP Office Contact Center supports one NIC only. Disable all other NICs.	

Table 4: OVA specifications

The following table provides the minimum requirements for virtualized OVA deployments.

	Less than 100 agents	100 to 250 agents
VMWare	ESXi 5.1 and 5.5 ⊛ **Note:** Higher ESXi versions are not supported.	

	Less than 100 agents	100 to 250 agents
Operating system	Windows Server 2008 R2 Standard 64–bit Edition SP1	
	Windows Server 2012 R2 Standard 64–bit Edition	
Host CPU Clock	Quadcore 3.1 GHz ✱ **Note:** Reserve 4x maximum CPU clock speed. For example, for ESXi hardware with a CPU of 2.4 GHz clock speed, reserve 9600 MHz.	2x SixCore 2.6 GHz ✱ **Note:** Reserve 12x maximum CPU clock speed. For example, for ESXi hardware with a CPU of 2.6 GHz clock speed, reserve 31,200 MHz.
VM Disk	250 GB (thick provisioning)	900 GB (thick provisioning)
VM Memory	16 GB ✱ **Note:** Reserve a minimum of 12 GB memory.	32 GB ✱ **Note:** Reserve a minimum of 24 GB memory.
VM CPU	1 CPU, 4 core ✱ **Note:** Reserve 4x maximum CPU clock speed. For example, for ESXi hardware with a CPU of 2.4 GHz clock speed, reserve 9600 MHz.	2 CPU, 12 core ✱ **Note:** Reserve 12x maximum CPU clock speed. For example, for ESXi hardware with a CPU of 2.6 GHz clock speed, reserve 31,200 MHz.

IP Office Contact Center User Interface for Chrome Devices requirements

The IP Office Contact Center User Interface for Chrome Devices:

- Supports WebRTC or Avaya desk phones.
- Runs on devices with Chrome OS version 37 or later.

Minimum requirements

Memory	4 GB
Storage	16 GB
Screen resolution	1366 x 768 pixels or higher

Migration roadmap and limitations

You can upgrade directly from any previous IP Office Contact Center release to Release 9.1.6. If you are upgrading from Release 9.0.x to the current release, you must first migrate the database from Sybase to PostgreSQL. If you are planning to upgrade, you must back up your current databases. You might also need to restore those databases if migration fails.

If you are upgrading from Release 9.0.x, you can upgrade your system by installing IP Office Contact Center on a new system and performing a remote migration of the database from your old system. Database migration times vary depending on the database size.

Bug fixes and patches

Bug fixes and patches for each component within the solution are available from the Avaya Support website.

Related links

Capacity upgrade requirements

When you upgrade IP Office Contact Center, you can also upgrade your server capacity from:

- 30 agents to 250 agents
- 100 agents to 250 agents

Use the following information to upgrade the capacity of ISO, OVA, or Appliance deployments.

ISO deployment	For a capacity upgrade of a system using a customer-provided server:
	1. Obtain a new server that fits the specifications for the required capacity.
	2. Install the same version of software on the new server.
	3. Back up the data from the original server and restore that data to the new server.
	4. You can then upgrade to the latest software if necessary, and purchase and apply the required licenses. You must apply the appropriate base licenses and additional agent licenses. Ensure that you can transfer existing licenses to the new platform.
OVA deployment	For a capacity upgrade of a system deployed in a virtualized environment:
	1. Ensure that the host environment can support the specifications for the required capacity. If your existing host environment does not support the required specifications, you must move the OVF to another host environment.
	2. Adjust the resource parameters of the OVF to fit your resource requirements.

3. Purchase and apply the required licenses. You must apply the appropriate base licenses and additional agent licenses. Ensure that you can transfer existing licenses to the new platform.

Appliance deployment

For a capacity upgrade of a system using an appliance:

1. Obtain a new appliance that fits the specifications for the required capacity.

2. Upgrade your current server to the software version of the new appliance.

3. Back up data from the original server and restore that data to the new server.

4. Purchase and apply the required licenses. You must apply the appropriate base licenses and additional agent licenses. Ensure that you can transfer existing licenses to the new platform.

Security considerations

Virus scan software

IP Office Contact Center has been tested with the following virus scan software:

• McAfee 8.5.0i, 8.7.0i and 8.8.0i

⚠️ **Warning:**

If you are using a McAfee virus scanner, you might not be able to send messages. This can occur because Port 25, which is used for the SMTP protocol, is blocked in the default configuration of McAfee. To resolve this issue, you must configure McAfee with the following exceptions:

• `IVR.exe`: for voice mail

• `Scheduler.exe`: for sending automatically generated reports

• `Mailsend.exe`: for sending emails about alarm events using TTrace

• `SMTPConnector.exe`: for email routing through SMTP

Database access rights

The access rights and security features of the databases are governed by how the system is administered using the PostgreSQL administration tools. For more information about the PostgreSQL database, see http://www.postgresql.org/.

Related links

Port assignments

For current port assignments for each component within this reference configuration, see *Avaya IP Office Contact Center Port Matrix* at http://support.avaya.com/security.

Related links

Chapter 4: Configuration details

Network configuration

Only one network port can be enabled.

IP Office telephony integration

IP Office Contact Center uses the PBX within the Avaya IP Office for telephony tasks. IP Office Contact Center uses other processes for email and chat, and does not depend on IP Office for these services.

> ⓘ **Important:**
>
> The network segment between IP Office Contact Center and IP Office must correspond to the Avaya VoIP specification. For more information, see *Avaya IP Voice Quality Network Requirements* at http://downloads.avaya.com/css/P8/documents/003956293.

The following elements are required to connect to IP Office:

- CTI-Pro license
- Avaya SIP User License, one channel
- Essential and Preferred Edition IP500V2 server
- Server Edition Linux server

IP Office Contact Center uses the following elements to interact with the IP Office PBX:

- IP Office task server
- Voice Extension Adapter (VEA)
- Common Hardware Abstraction Platform (CHAP)
- Interactive Voice Response (IVR)

IP Office task server

The IP Office task server adapts the telephone-specific behavior of the TAPI Deamon. The task server then makes this available to the kernel process and the business logical components (BLCs) within the user interface.

Kernel process functions: The task server uses a standardized definition for voice and email task servers. Therefore, the kernel process does not have to differentiate between the individual media types and PBX types. The kernel process is notified by the task server interface regarding:

- Call routing
- Agent monitoring
- Device monitoring
- Pending topic calls

The kernel process uses the task server services to forward topic calls to the correct destinations. These destinations include the following:

- Agents
- Topics or queue devices
- Announcement scripts
- Telephone lines or external numbers
- IVR

User interface functions: The business logical components (BLCs) within the IP Office Contact Center user interface uses the task server to control agent telephones. Task server services are available to control basic telephone functions, such as:

- Connecting and disconnecting
- Consultation
- Holding
- Call waiting
- Forwarding
- Conferencing
- Call diversion

The task server also controls third-party contact center functions, such as:

- Job code input
- Logging in and out of agent groups
- Switching on wrap-up time
- Switching on pause

Voice Extension Adapter

The VEA controls the contact center routing and queuing devices using IP channels. IP Office Contact Center uses the VEA for the following task server functions:

- Signalling a topic call
- Queuing calls on the queue device
- Switching calls to announcement scripts

When there is a pending call at a routing device, the VEA signals the call as a route request. The task server notifies the kernel. The VEA receives the call destination, which is determined by the kernel and vector processes of the task server. The following destinations are possible:

- Available agent

- Queue without announcement

- Queue with announcement through CHAP

  When a call switches to a CHAP announcement, VEA routes the call to one of the queue devices. Queue devices are VoIP channels between IP Office and CHAP. CHAP sends the required announcements to the queue device.

- Queue with announcement through IVR

  When a call switches to an IVR announcement script, VEA starts a call transfer to an IVR channel.

- External destination

The IP Office task server and VEA can establish multiple connections in parallel and make them available for allocation to available agents. The system establishes the connection for a call and then transfers the call to an available agent.

Common Hardware Abstraction Platform

CHAP provides a specific adapter in the form of a dynamic linked library (DLL) for SIP over IP. CHAP also plays announcements that are stored in the database as WAV files. CHAP is also capable of DTMF recognition. A CHAPSync process connects the database and CHAP. CHAP does not connect to the database directly. CHAPSync registers changes to the CHAP configuration data in the database and forwards the changes to CHAP. CHAP then writes the data to a local properties file.

Component configuration

IP Office configuration

IP Office Contact Center Release 9.1.6 requires IP Office Release 9.1.6. You must upgrade your IP Office infrastructure before upgrading IP Office Contact Center. You can temporarily use a previous version of IP Office Contact Center with IP Office until the IP Office Contact Center upgrade is complete.

Avaya Communicator for Windows configuration

IP Office Contact Center supports the same release of Avaya Communicator for Windows as IP Office. Make sure you are using the latest release of IP Office and the appropriate version of the Avaya Communicator for Windows soft phone.

Related links

WebRTC gateway configuration

Use the following guidelines when configuring a WebRTC gateway:

- With IP500V2 deployments, WebRTC should be enabled on the Application server.
- If Avaya one-X® Portal for IP Office and the WebRTC gateway are not on the same server, configure the WebRTC gateway SIP server settings manually.
- All agents with Integrated Phone mode should be defined on the Primary server.

Related links

Packaging and order codes

The following tables describe IP Office Contact Center license bundles and material codes. IP Office feature licenses are also associated with the IP Office Contact Center license bundles.

⊛ **Note:**

IP Office feature licenses must be provisioned in PLDS.

Table 5: IP Office Contact Center bundles without IP Office Select

Material code	Description	IP Office licensing features provisioned in PLDS
308392 IPO R9+ IPOCC BASE SE LIC	IP Office Contact Center Base 250.	• IPO R9+ CTI PLDS LIC • IPO R9+ CONTACT RECORDER PLDS LIC • IPO R9+ AV IP ENDPT 1 PLDS LIC
308394 IPO R9+ IPOCC BASE IP500 V2 LIC	IP Office Contact Center Base 30.	• IPO R9+ CTI PLDS LIC • IPO R9+ CONTACT RECORDER PLDS LIC • IPO R9+ AV IP ENDPT 1 PLDS LIC
308393 IPO R9+ IPOCC IP500 V2 TO SE LIC	IP Office Contact Center migration from an IP500 V2 deployment to an IP Office Server Edition deployment.	No IP Office licenses need to be provisioned.
308395 IPO R9+ IPOCC MULTICH AGT LIC	IP Office Contact Center 1 multichannel license with email and chat.	No IP Office licenses need to be provisioned.

Material code	Description	IP Office licensing features provisioned in PLDS
308397 IPO R9+ IPOCC SPV LIC	IP Office Contact Center 1 supervisor license, which includes voice, email, and chat.	No IP Office licenses need to be provisioned.
339499 IPO R9+ IPOCC VCE AGT LIC	IP Office Contact Center 1 voice agent license with skills based routing, call recording, and outbound campaigns.	• IPO R9+ VM PRO 2 PLDS LIC

Table 6: IP Office Contact Center bundles with IP Office Select

Material code	Description	Licensing features provisioned
339552 IPO SL R9+ IPOCC BASE SE LIC	IP Office Contact Center with Select Base 250.	• IPO Select R9.1 CTI PLDS LIC • IPO Select R9.1 CONTACT RECORDER PLDS LIC • IPO Select R9.1 AV IP ENDPT 1 PLDS LIC
339553 IPO R9+ IPOCC Base 500v2 to SL SE LIC	IP Office Contact Center migration from IP500 V2 to an IP Office Contact Center with Select Server Edition deployment.	No IP Office licenses need to be provisioned.
339550 IPO SL R9+ IPOCC VCE AGT LIC	IP Office Contact Centerwith Select 1 voice agent license with skills based routing, call recording, and outbound campaigns.	• IPO Select R9.1 VM PRO 2 PLDS LIC
308396 IPO SL R9+ IPOCC MULTICH AGT LIC	IP Office Contact Center with Select 1 multichannel license with email and chat.	No IP Office licenses need to be provisioned.
339498 IPO SL R9+ IPOCC SPV LIC	IP Office Contact Center with Select 1 supervisor license, which includes voice, email, and chat.	No IP Office licenses need to be provisioned.

Related links

Licensing bundles for IP Office Contact Center plug-ins

The following table lists the licenses for IP Office Contact Center plug-ins.

Table 7: Licenses for plug-ins

Material code	Description
380801 IPO R9+ IPOCC WALLBRD USER LIC	IP Office Contact Center Wallboard license.

Related links

Packaging and order codes on page 37

Licensing bundles for IP Office

The following tables list new licensing bundles for IP Office with and without IP Office Select.

Table 8: Licenses without IP Office Select

IP Office material code	License name
273906	IPO R9+ CTI PLDS LIC
273905	IPO R9+ CONTACT RECORDER PLDS LIC
273900	IPO R9+ AV IP ENDPT 1 PLDS LIC
273953	IPO R9+ VM PRO 2 PLDS LIC

Table 9: Licenses with IP Office Select

IP Office material code	License name
339009	IPO Select R9.1 CTI PLDS LIC
339153	IPO Select R9.1 CONTACT RECORDER PLDS LIC
339175	IPO Select R9.1 AV IP ENDPT 1 PLDS LIC
339141	IPO Select R9.1 VM PRO 2 PLDS LIC

Related links

Packaging and order codes on page 37

Additional license requirements

To activate the Windows 2012 operating system, you need a valid product registration key. Contact Microsoft or an authorized reseller to procure the Windows operating system.

Microsoft operating system licenses are specific to the hardware and limited to only 4 processors on that hardware. If you run the software on more than 4 processors, then you need additional licenses.

Related links

Packaging and order codes on page 37

Quality of service considerations

To achieve acceptable quality of service (QoS), your network must meet the following requirements:

- 100 Mbps (recommended 1Gbps) and full duplex of bandwidth available in real time.
- Network delay of less than 180 ms.
- Packet loss of less than 3%.

IP Office quality of service mechanisms

IP Office Contact Center uses the same QoS mechanisms as IP Office. For more information about QoS mechanisms for IP Office, see the following documents:

- *Avaya IP Office Solution Description*
- *IP Office Manager*, document number 15-601011

IP Office acts as an IP telephony server with QoS support through DiffServ for call routing.

When transporting voice over low speed links it is possible for normal data packets (1500 byte packets) to prevent or delay voice packets from getting across the link. This can cause unacceptable speech quality. Therefore, all traffic routers and switches in a network must have some form of QoS mechanism. QoS routers are essential to ensure low speech latency and to maintain sufficient audible quality.

When making use of IP telephony, there are a number of data centric considerations such as which data types have priority on the IP network when there is contention. This is set with IP/TCP quality of service and should not be ignored. In situations where LAN bandwidth is limited, a quality of service capable LAN switch should be used to ensure voice packets are transmitted with the required priority on the network. If not, the conversation carried over IP appears as broken up due to delays or has unacceptable delays introduced in the conversation causing latency and jitter. With IP hardphones there is the need for Power over Ethernet (PoE), or local phone power supplies to be provided to the telephones as the IP telephones are not powered by IP Office.

Glossary

Agent	A user can be associated to an agent. Only agents can receive tasks from the call center routing. An agent can log in to one or more specific media types. The agent media states are independent from each other. An agent, for example, can be signed on for email and signed out for voice. Each agent can have different states for each media type. Agents can belong to one or more Agent Groups. An agent can sign on to an agent group when logged in.
Agent group	A list for organizing agents, used as a routing target and for statistics. An agent can be part of multiple agent groups and can have any number of skills allocated. Agents can sign on to an agent group to receive calls. Agent groups are used for inbound calls, outbound calls, and email.
Automatic Call Distribution	A programmable feature at the contact center. Automatic Call Distribution (ACD) handles and routes voice communications to queues and available agents. ACD also provides management information that can be used to determine the operational efficiency of the contact center.
Call Admission Control	A measure of dynamic traffic calls that can be completed in an average busy hour.
Customer Relationship Management (CRM)	IP Office Contact Center supports a SAP CRM connector and a Salesforce (SFDC) CRM plug-in. SAP and SFDC provide agent UI functionality by connecting the CRM system with IP Office Contact Center.
Digital Communications Protocol	A proprietary protocol that is used to transmit both digitized voice and digitized data over the same communications link. A Digital Communications Protocol (DCP) link consists of two 64-kbps information (I) channels, and one 8-kbps signaling (S) channel. The DCP protocol supports two information-bearing channels and two telephones or data modules.
First-level archiving	With first-level archiving, IP Office Contact Center archives documents using the UMR web client. You can view these documents using the UMR web client in a manner similar to unarchived documents. First–level archiving is achieved by giving an archive flag to the documents in the runtime database.

Interactive Voice Response (IVR)	With Interactive Voice Response, telephone callers can interact with a host computer through prerecorded announcements and prompts.
Private Branch Exchange (PBX)	A device for connecting internal telephones to each other and to the public telecommunications network. The PBX can also have data transfer functions.
Product Licensing and Delivery System (PLDS)	The Avaya licensing and download website and management system. Avaya Business Partners and customers use this site to obtain ISO image files and other software downloads.
Public Switched Telephone Network (PSTN)	A telephone network that includes many communication technologies such as microwave transmission, satellites, and undersea cables.
SAL	A centralized method that monitors Avaya equipment and software remotely. Secure Access Link (SAL) collects inventory information on equipment and software and automatically creates service tickets when there is a problem.
Second-level archiving	With second-level archiving, IP Office Contact Center stores documents in a secondary archiving database. The Archive Reporting on Demand (RoD) process performs archiving jobs.
Session Initiation Protocol (SIP)	A protocol used for controlling multimedia communication sessions over Internet Protocol (IP) networks.
Structured Query Language (SQL)	A language used to query, update, and administer relational databases.
Task	A media independent contact, such as a voice call or an email. A task can be an inbound call, outbound call, email, or chat. The task flow defines rules for handling a task or a contact.
Topic	The entry point in the system and source for Task objects. A topic can be an email address, a dialed number, or a chat session. When a contact for a topic is present, IP Office Contact Center decides how to handle the contact. If IP Office Contact Center cannot directly route the contact, the contact remains in the topic. You can make flexible routing decisions during the time on hold.
User	A user in the system can log into the IP Office Contact Center UI. A user has privileges for using and administering parts of the system. The agents, supervisors, and administrators do not have a strict set of roles. Combinations of privileges define these roles.

Index