Avaya IP Office Contact Center Feature Description

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Contents

Chapter 1: Introduction

Purpose

This document contains detailed descriptions of IP Office Contact Center features and capabilities, including privileges, reports, telephony, dialer options, scripts, and administrative functionality. This document also includes a chapter on interface navigation with a high-level description of the menus and configuration options available in the IP Office Contact Center interface.

Intended audience

This document is intended for people who want to understand IP Office Contact Center features and capabilities, when to use them, and why.

Document changes since last issue

The following changes have been made to this document in Release 9.1.6:

- Updated the list of training courses.
- Updated the list of features in IP Office Contact Center overview on page 13 to include key new functionality.
- Described key changes for this release in New in this release on page 14.
- Added a new item in the list of components.
- Described user roles in Roles and privileges on page 25.
- Added a UI comparison table.
- Updated privilege description for the Email Archive option.
- Added a note to say that the IP Office wrap up time must be less than the configured IP Office Contact Center wrap up time.
- Updated email and chat operation descriptions.
- Updated archiving administration content.

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

Table continues…

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

Table continues…

Document title	Use this document to:	Audience
Administering Avaya IP Office Contact Center IVR Editor	Create and edit IVR editor scripts. **Note:** This document is also available as a help system through the product interface.	Administrators
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 and the IP Office Contact Center Web User Interface.	Agents and supervisors.

Table continues…

Document title	Use this document to:	Audience
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

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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

Table continues…

Course code	Course title
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
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

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About this task

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Procedure

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

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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*.

Related links

Documentation on page 7

New in this release

The following new functionality has been added in this release:

New IP Office Contact Center interfaces

IP Office Contact Center supports the following new user interfaces:

- IP Office Contact Center User Interface for Chrome Devices
- IP Office Contact Center Web User Interface

The functionality available in each UI varies.

CRM integration

You can integrate IP Office Contact Center with a SalesForce (SFDC) plug-in or SAP CRM connector. Agents can use SAP and SFDC to access IP Office Contact Center UI functionality. SAP and SFDC include embedded call control to enable agents to make audio calls and access call control functionality.

Note:

SAP and SFDC do not support video calls with IP Office Contact Center.

Web administration portal

IP Office Contact Center now supports 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.

Wallboard module

You can access a web-based Wallboard to view agent and queue statistics. You can customize your wallboard to suit your needs.

Support for Cloud deployments

You can deploy IP Office Contact Center in a standard on-premise deployment or in a Cloud environment. For more information about the Cloud environment, see *OnAvaya™ and Powered by IP Office and IP Office Contact Center Reference Configuration for Business Partners*.

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.

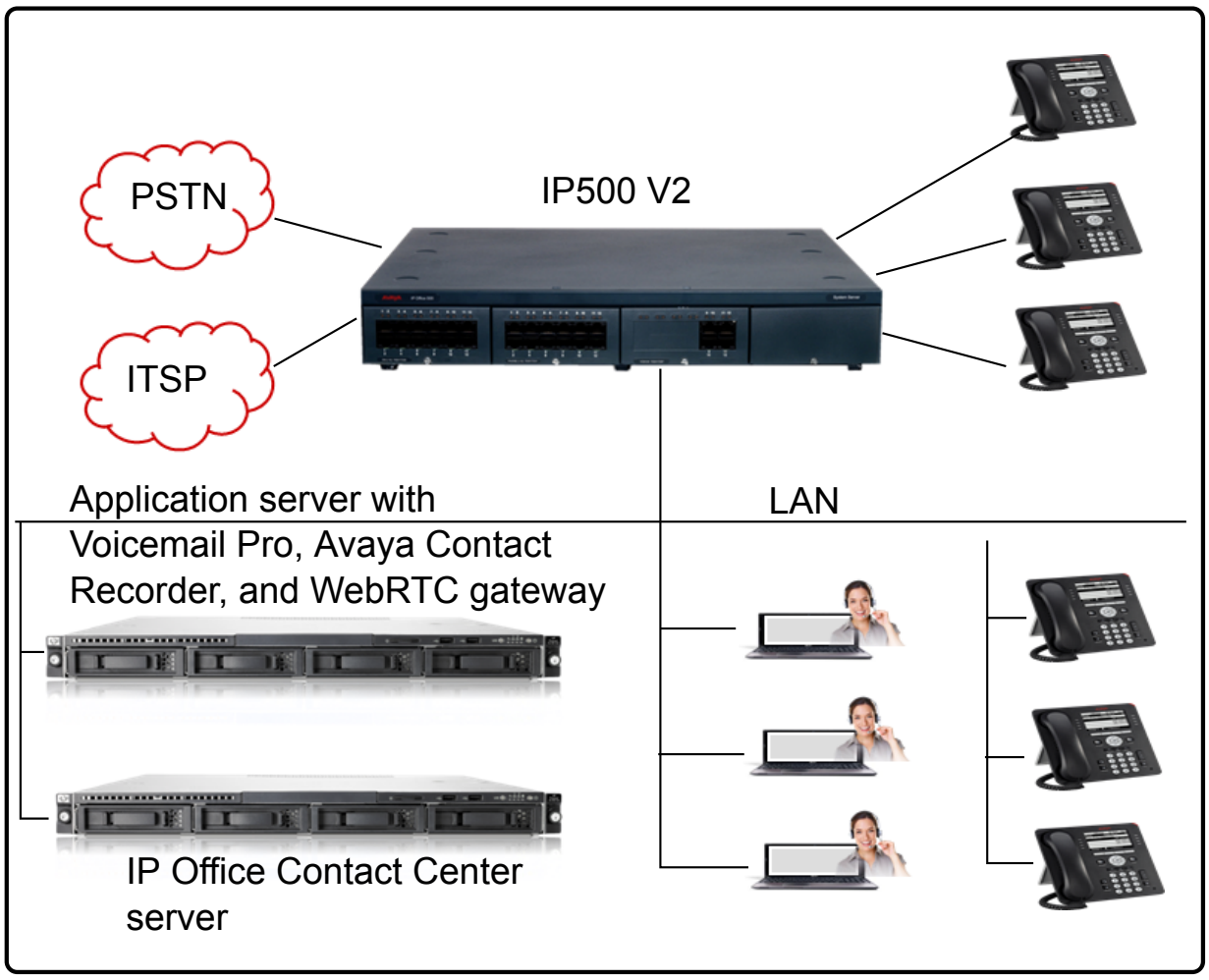


Figure 1: IP Office Contact Center IP500 V2 topology

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.

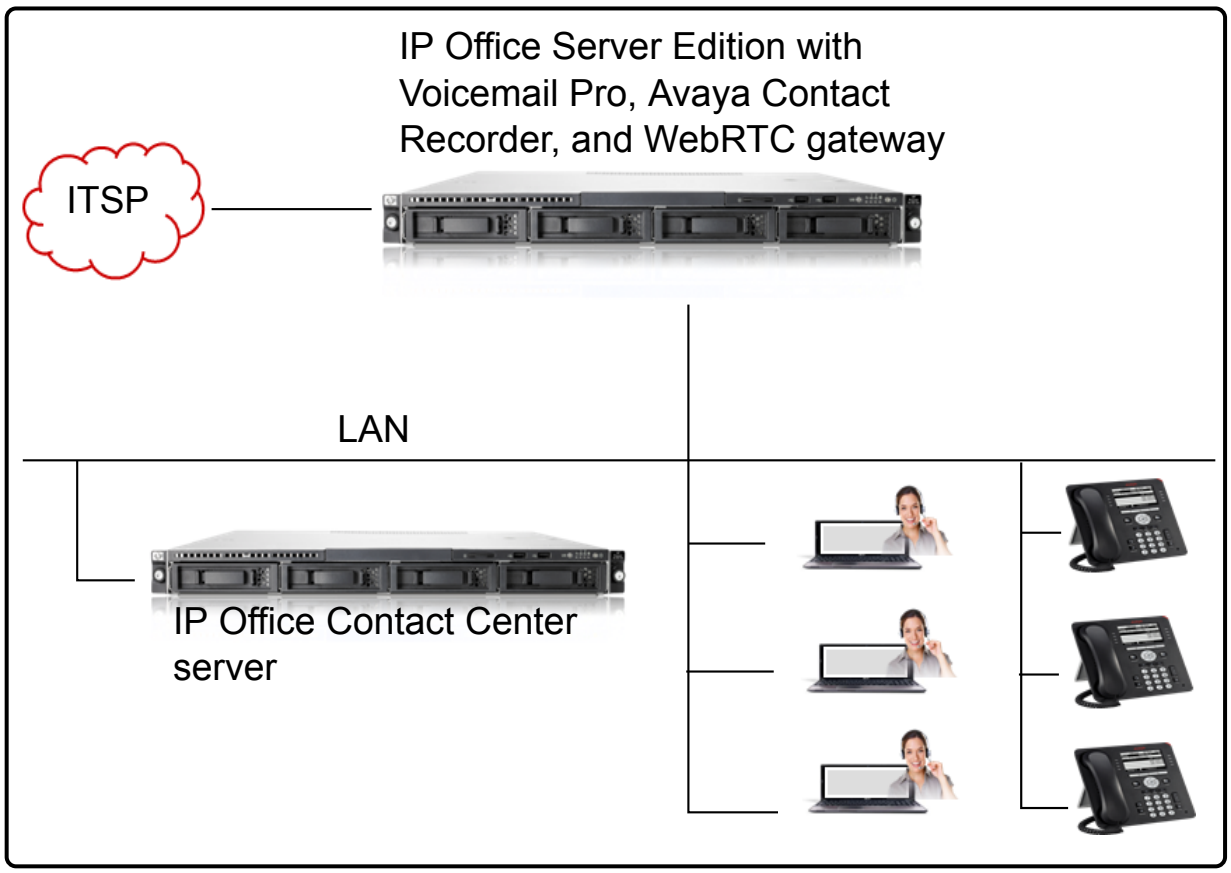


Figure 2: IP Office Server Edition topology

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.

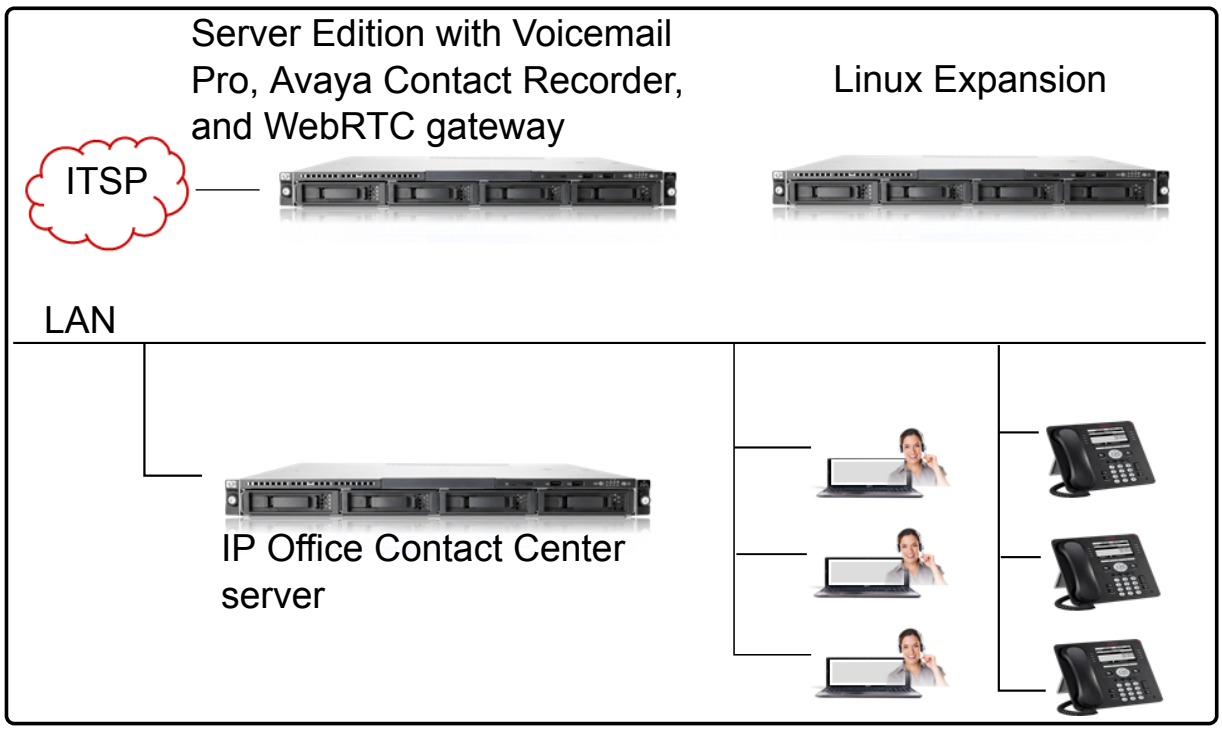


Figure 3: IP Office Server Edition with Linux expansion topology

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*.

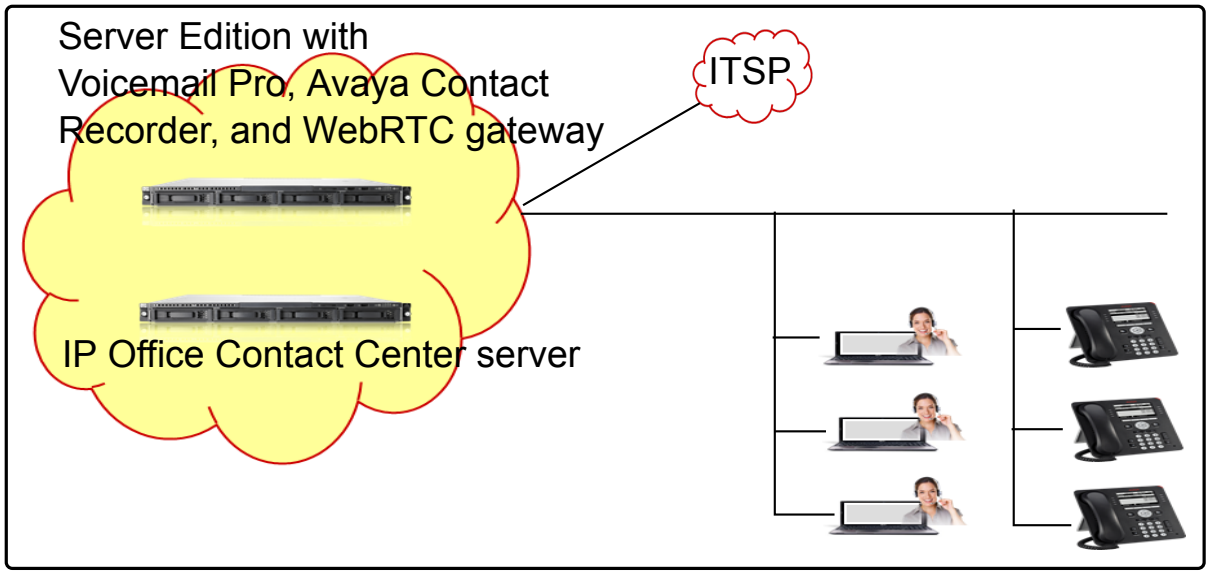


Figure 4: IP Office Server Edition cloud topology

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.

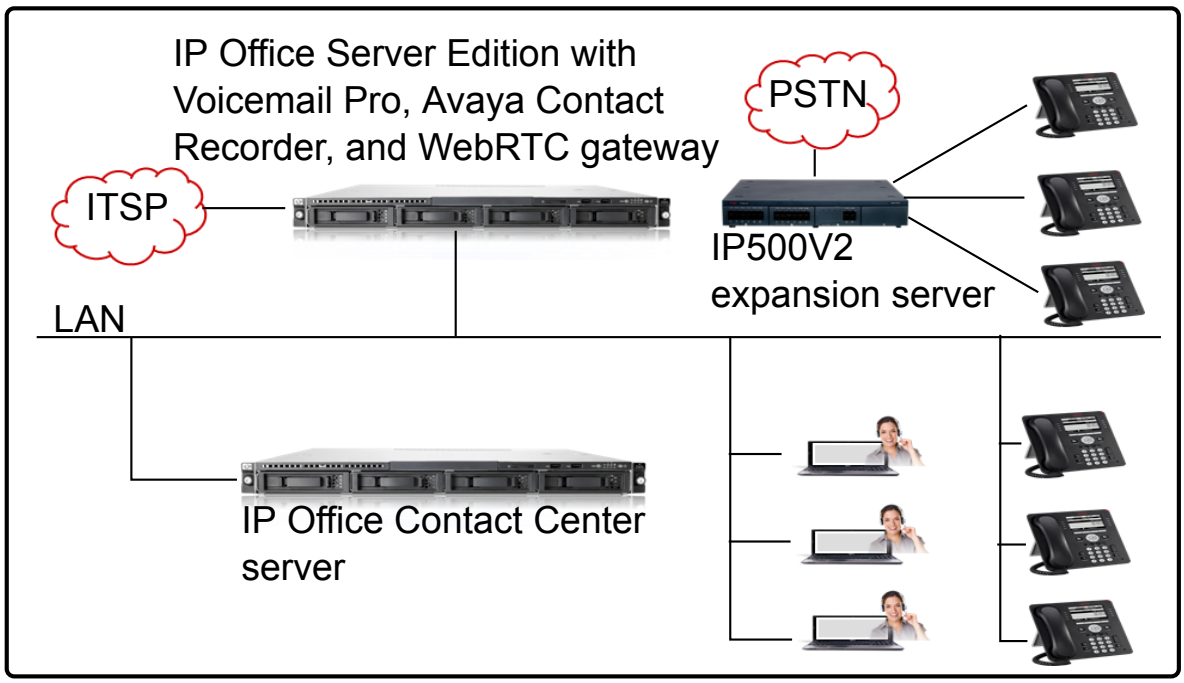


Figure 5: IP Office Server Edition with IP500V2 expansion topology

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.

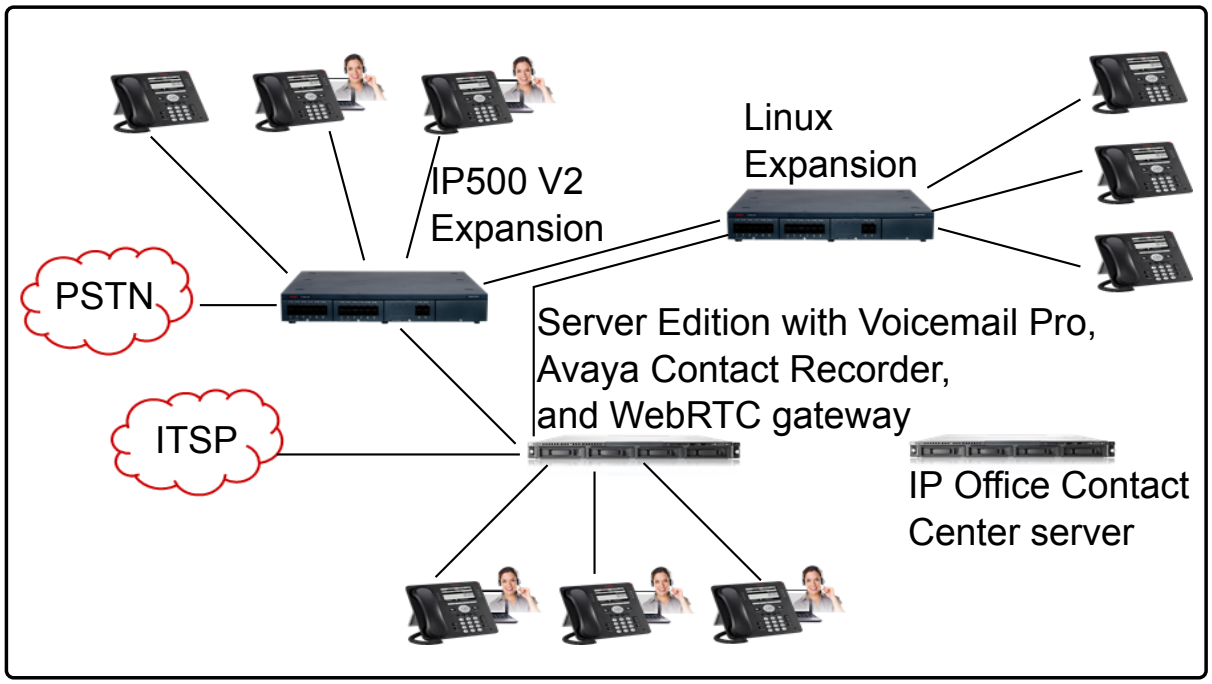


Figure 6: IP Office Server Edition with expansion servers in a distributed topology

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://support.avaya.com/CompatibilityMatrix/Index.aspx.

Component	Platform	Description
Infrastructure		
IP Office Contact Center server	Supplied by Avaya Business Partner or customer.	Contains: • WebLM and license clients

Table continues…

Component	Platform	Description
		• Contact Center Tomcat • Naming service • Trace system • Watchdog • Service tools • UI Session Manager • Common Hardware Abstraction Platform (CHAP) • PBX task server • 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	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.

Table continues…

Component	Platform	Description
	IP Office Server Edition small server (up to 100 agents) or IP Office Server Edition large server (up to 250 agents) or Virtual Machine	
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 primary server in an IP Office Server Edition deployment.	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 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		

Table continues…

Component	Platform	Description
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.
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.	The SFDC plug-in and SAP connector provide agent UI functionality, including call control.

Table continues…

Component	Platform	Description
	Note: The SFDC plug-in is not supported on Internet Explorer.	
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.

Chapter 3: Roles and privileges

The following user roles exist in IP Office Contact Center:

- Agents: Perform customer server tasks, such as making and receiving telephone calls. If configured, agents can also communicate using email and instant messaging chats.
- Team leader: Monitor the activities that agents perform in real time and historical reporting.
- Supervisors: In addition to monitoring agent activities, supervisors can also create, view, and edit reports and real time information in the interface. The reports that supervisors work with include historical reports for telephony, email, or chat.
- Administrators: Perform system administration, such as configuring email and chat services, and creating and editing topics, objects, call flows, and scripts. Administrators can also access supervisor functionality.

Note:

The Administrator account includes a Service account. When possible, use the Service user account instead of the Administrator account. The Administrator account requires Supervisor licenses. The Service user account uses its own special license, but it does not use Agent or Supervisor licenses.

The following table provides an overview of the types of features that agents and supervisors can access. The features each agent can access vary depending on the permissions assigned to the agent.

Feature	Available for agents	Available for supervisors
Telephony and call control	Yes. Agents can: • Make calls. • Receive calls. If configured, IP Office Contact Center can interoperate with an Avaya Communicator for Windows on IP Office soft phone.	Yes. Supervisors monitor the call activity of agents.
Instant messaging or Chat	Yes, if configured by an administrator.	Yes. Supervisors can monitor the IM activity of agents.
Email	Yes, if configured by an administrator.	Yes. Supervisors can monitor the email activity of agents.

Table continues…

Feature	Available for agents	Available for supervisors
	Depending on the email privileges assigned to you, you can access the following types of email options: • Configure email settings. • Create text blocks or signatures to insert into your emails. • Print and delete emails. • View emails in a queue for your assignments. • Defer emails to a Hold folder to address later.	
Log in to a specific agent group	Yes. If you are assigned to multiple agent groups, you can choose to sign in to a specific group after logging in to the interface.	Supervisors can act as agents.
Break times	Yes. You can set break times.	Yes.
Out-of-office notifications	Yes. You can create out-of-office notifications.	Yes.
Configuration module, including: • Configure agent profiles. • Configure teams and workplaces. • Configure IVR, and announcement, recorded, and chat scripts. • Enter and edit customer recognition data. • Create and edit destination details.	Yes. You can access the configuration options assigned to you.	Yes.
Variables	You can add, edit, and assign the variables for which you have permissions.	Yes.
Reports	If you have reporting privileges, you can view reports and create reports on certain topics.	Yes. Supervisors can also configure new reports and generate reports about agent activity.

Categorization of assigned privileges

As an administrator, you can assign privileges to an agent or a group of agents. The privileges you can assign are categorized into the following tabs:

- Agent
- UI
- Email
- Configuration
- Variables
- Reporting
- Realtime Information
- Task Flow Editor
- Others settings

For information about how to assign privileges, see *Administering Avaya IP Office Contact Center Configuration Module*.

Related links

Documentation on page 7

Agent privileges tab field descriptions

Name	Description
Change password	Specifies that an agent can change the passwords configured for the agent.
Change alias	Specifies that an agent can change the aliases of the agent. You can use the alias for reporting evaluations.
Call divert logged-out user	Specifies that an agent can activate a call routing for the time that the agent is logged-out.
Automatic sign on	Specifies that agents such as answering machines are automatically signed on to call distribution.
Agent group assignment	Specifies that agents can assign themselves to an agent group.
Job code input	Specifies that an agent can enter a job code. **Note:** The IP Office Contact Center PBXs do not require this privilege. The adjustment is set in the topic.
Mandatory job code input	Specifies that the agents must enter a job code for every call.

Table continues…

Name	Description
	The agents are in ACW until the agent enters a job code. If an agent selects the **Mandatory job code input** option, the agent must also select the **Job code input** option. If an agent does not select both the options, the agent cannot enter a job code. **Note:** The IP Office Contact Center PBXs does not require this privilege. The adjustment is set in the topic.
Outgoing job code	Specifies that the agent can enter a job code for outgoing calls.
Extend wrap-up	Enables agents to extend wrap-up time if needed.
Chat > **Automatic sign on**	Specifies that agents are automatically signed on to all assigned agent groups.
Chat > **Advanced archive view**	Specifies that agents can use the chat archive.
Server-specific > **Four-eye principle**	Specifies that two persons can survey certain data at a time. You need a second password to retrieve this data. You must define two passwords in the agent configuration. An agent with four-eye principle cannot log in to the system using the credentials. This agent can only log in with a second person with the second password.

UI tab field descriptions

Name	Description
Home	
Select own home file	Specifies that agents can select and view the required real time information.
Home configuration	Specifies that agents can configure the real time information for all agents.
Telephony	
Select own telephony file	Specifies that the agent can select a telephone.
Telephone configuration	Specifies that the agent can configure the telephones for other agents.
Change own contact bar	Specifies that agents can change the contact bar of the agent.
Contact bar configuration	Specifies that agents can configure the contact bar for all agents.
Show quick bar	Displays the quick bar on the agents screen.
Select own quick bar file	Specifies that agents can select a file for the quick bar.

Table continues…

Name	Description
	For more information about selecting quick bar, see *Using Avaya IP Office Contact Center for Windows*.
UI config	
UI configuration	Specifies that the agent can use the UI Configuration module.
Default interface	Specifies that the agent can configure the default view of an agent.
UI configuration application	Specifies that the agent can select an active view. After starting the IP Office Contact Center application, the selected view, for example, monitoring, starts automatically. In the **UI configuration** of a system, profile, or agent, the **Application** tab displays with the privilege. You can select the active view in the **Application** tab.
Configuration grid colors	Specifies that agents can configure the background and text colors.

Email field descriptions

The following privileges are required for email:

Note:

- The **Email** tab was previously called the **UMR** tab.
- The email privilege settings determine whether you can use individual functions.

Name	Description
Email administrator	With this privilege, you can use the following functions: • **Email configuration** • **Address book administration**
Keyword based email routing	With this privilege, you can configure scripts for Email with text search keywords. The privilege **Email administrator** includes the privilege **Keyword based email routing**.
Textblock administrator	With this privilege, you can use the Text Block Administration module. For more information about how to perform this role, see *Using Avaya IP Office Contact Center for Windows*.
Email supervisor	With this privilege, you can work as a supervisor. As a supervisor, you can use the following functions:

Table continues…

Name	Description
	In the Overview folder: • Delete document. • Delegate document to agents. • Delegate document to topics in the Deleted folder. In the Deleted folder: • Delegate document to topic. In the Dictionary: • Manage • Import
Use textblocks	With this privilege, you can use text blocks in documents. The text blocks are set up using the Text Block Administration module.
Defer emails	With this privilege, you can put documents on hold. These documents are then be placed in the Deferred folder.
Print emails	With this privilege, you can print documents.
Agent queue view	With this privilege, you can view the overview of the Email queue for the authorized topics. You can also select emails from the Email queue.
Delete emails	With this privilege, you can delete active emails. Later, you cannot retrieve the emails.
Automatic sign on	With this privilege, you are automatically logged into the agent group configured for you.
Email archive	With this privilege, you can access archived or completed emails in the Archive folder.
Reply as agent	With this privilege, you can select whether to reply as an agent. The system uses the corresponding email address as the address of the sender.

Configuration tab field descriptions

You can configure the following privileges for the Configuration module:

Name	Description
Configuration	Specifies that the agent can start and use the Configuration module.
Topic	Specifies that the agent can configure topics.
Blocking periods	Specifies that the agent can configure blocking periods.
Agent group	Specifies that the agent can configure agent groups.

Table continues…

Name	Description
Agent	Specifies that the agent can configure agent details.
Edit alias	Specifies that the agent can edit the agents alias details. If an agent has privileges to configure agents details, the agents can also edit the agents alias details.
Edit Windows user account	Specifies that the agent can edit the Windows user account.
Edit password	Specifies that the agent can edit the password.
Agent profile	Specifies that the agent can configure agent profiles.
Team	Specifies that the agent can configure teams.
Workplace	Specifies that the agent can configure workplaces.
Skill	Specifies that the agent can configure skills.
Announcement	Specifies that the agent can configure announcements.
Announcement script	Specifies that the agent can configure announcement scripts.
IVR	Specifies that the agent can configure Interactive Voice Responses (IVR). **Note:** IVR was previously known as Voice Units.
Chat script	Specifies that the agent can configure chat scripts.
Customer recognition	Specifies that the agent can change and enter data for customer recognition.
External destinations	Specifies that the agent can change and enter external destinations.
System	Specifies that the agent can configure general system settings.
Interface for staff planning	Specifies that the agent can configure the interface for staff planning.
Configuration report	Specifies that the agent can create a configuration report.
Shift plan	Specifies that the agent can configure the shift plan.
Delete statistic data	Specifies that the agent can delete the statistic data.

You can also set the following service privileges in the Configuration module:

Name	Description
Reporting filters	Specifies that the agent can configure reporting filters.
Special settings	Specifies that the agent can configure special settings.
Telephone settings	Specifies that the agent can configure telephone default settings.
PBX	Specifies that the agent can configure PBXs.
Country	Specifies that the agent can configure country settings.
Queue device	Specifies that the agent can configure queue devices.
Telephone/Telephone group	Specifies that the agent can configure the telephones or telephone groups.

Table continues…

Name	Description
CHAP server	Specifies that the agent can configure CHAP servers.
Access code agents	Specifies that the agent can configure access codes for agents.
Access code topics	Specifies that the agent can configure access code topics.
E-mail settings	Specifies that the agent can configure email settings.
Chat server	Specifies that the agent can configure the settings for the chat server.
Chat settings	Specifies that the agent can configure chat settings.

Variables

You can use the Variables privilege to determine whether the agent can configure variables for certain objects. You can also determine whether the agent can change or assign values. You can change the value in **Realtime information** if you have the necessary privilege. You can configure the variables for the following objects if you have the necessary privileges:

- Global
- Topic
- Agent group
- Agents
- PBXs
- IVR scripts
- External destinations

Reporting tab field descriptions

You can configure the following privileges in the Reporting module:

Name	Description
Team	
Reporting	Specifies that the agent can start and use the Reporting module.
Topic	Specifies that the agent can create reports on topics.
Agent group	Specifies that the agent can create reports on agent groups.
Agent	Specifies that the agent can create reports on agents.
Show alias only	Specifies that the agent can create reports on agents using aliases.
Team	Specifies that the agent can create reports on teams.
Telephone	Specifies that the agent can create reports on workplaces.
Trunk Line	Specifies that the agent can create reports on lines.

Table continues…

Name	Description
Outbound ACD	Specifies that the agent can create reports on outgoing ACD connections.
IVR	Specifies that the agent can create reports on Interactive Voice Responses (IVR).
Skill	Specifies that the agent can create reports on skills.
System	Specifies that the agent can create reports on the system.
PBXs	Specifies that the agent can create reports on PBXs.
Automatic reporting	Specifies that the agent can create automatic reports.
Delete data	Specifies that the agent can delete the reporting data of a certain period.
Set report parameters	Specifies that the agent can open predefined reports in the Inspector and adjust the report period.
Supervisor	
Definition	Specifies that the agent can configure the file manager to create new reports.

Realtime information tab field descriptions

You can configure the following privileges for the Realtime Information module:

Name	Description
Agent	
Callback from call list	Specifies that the agent can use the **Callback from call list** function.
Call Redirect	Specifies that the agent can use the **Call Redirect** function.
Pick up call	Specifies that the agent can use the **Pick up call** function.
Queue Call Redirect	Specifies that the agent can use the **Queue Call Redirect** function. An agent can accept or switch tasks from the queue, or reserve the tasks for oneself or for other agents.
Delete from call list	Specifies that the user can delete an entry from the call list in the Realtime Information module.
All agents (Authorization)	Specifies that user can view all members of an agent group or team, and the agents for which the user does not have authorization.
Team	
Realtime information	Specifies that the agent can start and use the Realtime Information module.

Table continues…

Name	Description
Remote functions	Specifies that the agent can use the **Remote functions**. For more information about the available functions, see *Using Avaya IP Office Contact Center for Windows*.
Trunk realtime information	Specifies that the agent can use the **Trunk realtime information** function.
Out of office notice	Specifies that the agent can edit the out of office notice of other agents. **Note:** Agents also needs the privilege **Variable – Agents** to use this function.
Agent history	Specifies that the agent can use and edit the agent history.
Supervisor	
Configuration	Specifies that the agent can use the **Configuration** function to create or change the private or the system-wide real time information.
Supervisor Emergency	Specifies that the agent can use the **Supervisor Emergency** function. The agent also needs the **Configure Supervisor Emergency** privilege to configure the function.
Silent Monitoring	Specifies that the agent can use the **Silent Realtime information** or **Coaching** function in the telephone contact bar.
Supervisor Assistance	Specifies that the agent can use the **Supervisor Assistance** and the **Silent Monitoring** functions.

Note:

You need supervisor licenses for using the privileges.

Task Flow Editor field descriptions

You can configure the following privileges in the Task Flow Editor module:

Name	Description
Task Flow Editor	Specifies that the agent can start and use the Task Flow Editor module.
Edit task flow set	Specifies that the agent can edit a task flow set. If you do not select this privilege, the agent only has read-only access.
Activate task flow set	Specifies that the agent can edit and change the default task flow set. During a system failure, the IP Office Contact Center system uses the default task flow set. This default task flow set is protected separately.
Use default task flow set	Specifies that the agent can define a task flow set as the default task flow set.

Table continues…

Name	Description
Edit predefined conditions	Specifies that the agent can edit and change the predefined conditions. A user can edit private conditions without a special privilege.
Advanced mode	Specifies that you cannot open task flow sets with the following elements if you do not have the Advanced mode privilege: • Logic • Distributor (equal) • Distributor (cyclic)

Others settings tab field descriptions

You can configure the following privileges for the other modules in the IP Office Contact Center system:

Name	Description
Dialer	Specifies that the agent can use the Dialer module.
IVR-Editor	Specifies that the agent can use the IVR Editor module.
Addressbook Admin	Specifies that the agent can use the Address Book Administration module.
Task reporting	
Agent Status Reports	Specifies that the agent can use non call-related agent events.
Contact Detail Reports	Specifies that the agent can use the Contact Detail Reports module.
Start/stop reports	Specifies that the agent can start or stop the reports.

Chapter 4: Interface navigation

IP Office Contact Center includes the following user interface applications:

- IP Office Contact Center User Interface for Windows
- IP Office Contact Center User Interface for Chrome Devices
- IP Office Contact Center Web User Interface

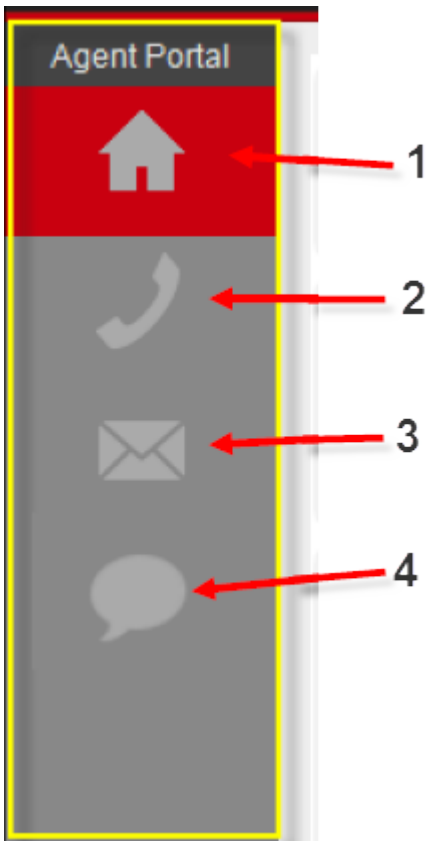
You can also access agent UI functionality, including call control, from a SalesForce (SFDC) CRM plug-in or SAP CRM connector.

You can access agent, agent group, and topic statistics from the Wallboard application. The IP Office Contact Center administrator can create Wallboard accounts. When logged in with one of these accounts, your browser can be used to display queue statistics for any queues, plus other information, such as messages sent or scheduled by supervisors. For more information about Wallboard navigation and using Wallboard, see *Using Avaya IP Office Contact Center Wallboard*.

Interface tabs

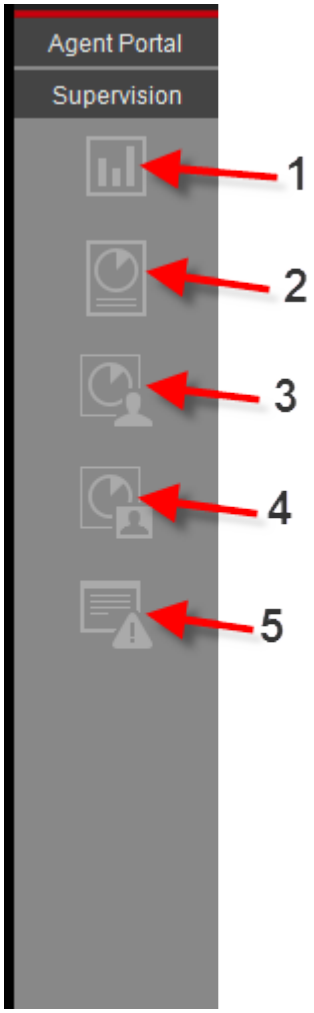
Agent tab

The following image shows the Agent tab with the email and chat features configured. The **Email** and **Chat** buttons do not appear on the tab unless an administrator has configured these features.



Number	Button	Description
1	**Home** button	Displays the main Home screen for the interface. You can view supervisor messages and general statistics from this screen.
2	**Telephony** button	Displays telephony options and statistics.
3	**Email** button	Enables you to send, receive, and organize emails. This button only appears if your administrator has configured the email feature.
4	**Chat** button	Displays your options for communicating with customers using IM. This button only appears if your administrator has configured the chat feature.

Supervision tab



Number	Button	Description
1	**Realtime information** button	Enables you to monitor objects and agents in real time. You can also create a folder structure to organize your Realtime Information module. Objects that are updated periodically cannot be monitored in real time. You can monitor the following objects in real time: • Topics • Agents and agent groups • Teams • PBX

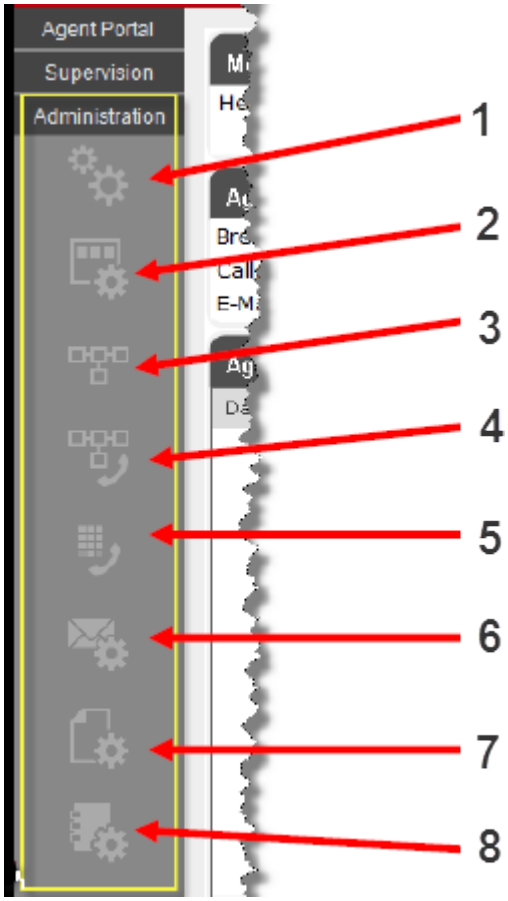
Table continues…

Number	Button	Description
		• Voice units
2	**Reporting** button	Enables you to view and create different types of reports.
3	**Agent Status Reports** button	Enables you to track and update status reports for different agents and agent groups. For example, you can track details of calls between an agent and customer, such as the length of the call and the result at the end of the call.
4	**Contact Detail Reports** button	Enables you to track and update customer records.
5	**Error list** button	Displays system errors.

Administration tab

Important:

The Administration tab is only available in the IP Office Contact Center User Interface for Windows.



Number	Button	Description
1	**Configuration** button	Enables you to perform general configuration, including creating additional agents and agent groups. For more information about using this module, see *Administering Avaya IP Office Contact Center Configuration Module*.
2	**UI configuration** button	Displays interface configuration options.
3	**Task Flow Editor** button	Allows you to view, create, and edit Task Flow Editor scripts. For more information about working with Task Flow Editor scripts, see *Administering Avaya IP Office Contact Center Task Flow Editor* .
4	**IVR Editor** button	Allows you to view, create, and edit IVR Editor scripts. For more information about working with IVR Editor scripts, see *Administering Avaya IP Office Contact Center IVR Editor* .
5	**Dialer** button	Enables you to configure dialer calls, such as automatic outbound calls. For more information about using this module, see *Administering Avaya IP Office Contact Center Dialer* .
6	**Email Configuration** button	Enables you to configure email functionality.
7	**Text Block Administration** button	Enables you to set up text blocks that agents can use when sending emails. For more information about using this module, see *Administering Avaya IP Office Contact Center Text Blocks*.
8	**Address Book Administration** button	Enables you to create address book entries that agents can use. For more information about using this module, see *Administering Avaya IP Office Contact Center Address Book* .

Interface comparison

The following table provides a comparison of the features available on each IP Office Contact Center UI:

Functionality	Supported with IP Office Contact Center User Interface for Windows	Supported with IP Office Contact Center User Interface for Chrome Devices	Supported with IP Office Contact Center Web User Interface
Real time monitoring	✔	✔	✔

Table continues…

Functionality	Supported with IP Office Contact Center User Interface for Windows	Supported with IP Office Contact Center User Interface for Chrome Devices	Supported with IP Office Contact Center Web User Interface
Configuration of real time information screen	✔	N	N
Administration	✔	N **Note:** You can perform some administration with the web administration portal.	N **Note:** You can perform some administration with the web administration portal.
Access to IVR Editor	✔	N	N
Access to call flow editor	✔	N	N
Telephony	✔	✔	✔
Inbound and outbound service support	✔	✔	✔
Email (if configured)	✔	✔	✔
Chat or IM (if configured)	✔	✔	✔
Ability to design historical reports	✔	N	N
Ability to view historical reports	✔	✔	✔
Customizable Home screen	✔	N	N
Supported in Cloud deployments	N **Note:** BPs must still use this UI to perform administration tasks, but end users in the Cloud cannot use it.	✔	✔
Integration with Plantronics headsets	N	✔	N

Table continues…

Functionality	Supported with IP Office Contact Center User Interface for Windows	Supported with IP Office Contact Center User Interface for Chrome Devices	Supported with IP Office Contact Center Web User Interface
WebRTC support	N	✔	✔
Support for multiple operating systems, such as Windows, Mac, and Chrome OS.	N, Windows only	N, Chrome OS only	✔

CRM functionality

Agents can access IP Office Contact Center UI functionality from an SFDC CRM plug-in or SAP CRM connector. SFDC and SAP provide UI functionality by connecting the CRM system with IP Office Contact Center. You can obtain the SFDC plug-in at https://appexchange.salesforce.com/ or http://www.salesforce.com/. The SAP connector is distributed with the IP Office Contact Center ISO image, which also includes OVA and Appliance images.

Note:

Supported browsers for the SFDC CRM plug-in are Google Chrome (minimum version 39) and Mozilla Firefox (minimum version 32). Internet Explorer is not supported.

Standard agent options

SAP and SFDC support the following agent functionality:

- Log in and log out of the UI.
- Log in and log out of all agent groups or specific agent groups.
- Start and end breaks.
- Perform Wrap Up and After Call Work (ACW) tasks.

Telephony options for agents

You can do the following with both SAP and SFDC:

- Make outgoing calls.
- Answer ringing incoming calls.
- Drop or end calls.
- Hold and retrieve calls.
- Make consultation calls.
- Transfer calls.
- Make and handle conference calls.
- Enter DTMF digits.

Note:

SAP and SFDC do not support video calls with IP Office Contact Center.

Chapter 5: Dialer and telephony

Telephony options

You can perform the following types of telephony tasks in the IP Office Contact Center interface:

- Answer incoming calls.
- Make calls and re-dial numbers.
- Enter job codes.
- Start conference or consultation calls.
- Transfer or toggle calls between two parties.
- Hold and retrieve calls.
- Enter DTMF digits during a call.
- Request assistance or report an emergency situation during a call.
- Access address books to quickly find the information required to make outgoing calls.
- Select job codes defining the outcome of a call.
- Set real time telephony options if your administrator has assigned the required privileges to you.

Telephony contact bar

The Telephony module contact bar contains a contact information area and a function bar. The contact information area displays text-based call details. The function bar contains icons that can be clicked to execute telephony commands. If you have the appropriate privileges, you can modify the icons displayed in the function bar.

Contact information area

The contact information area displays the following call information with one line for each call.

- Message text.
- Call direction, inbound or outbound.
- Call status. For example, dialing, busy, or on hold.
- Topic name.
- Conversation length.

- The remaining wrap up time.

  If time is activated manually, 12:00:00 a.m. is displayed because the time is not limited. In this case, wrap-up time must also be closed again manually.

  Note:

  Set up IP Office wrap up time to be less than the configured IP Office Contact Center wrap up time. Typically, the wrap up time configured in IP Office should be less than 10 seconds.

- The name of the customer, if known, or the telephone number.

Dialer options

The IP Office Contact Center Dialer feature allows you to automate outgoing calls. The dialer calls that the system processes are referred to as *jobs*.

You must set up Dialer scripts using the Task Flow Editor module. These scripts indicate exactly how IP Office Contact Center handles and distributes calls. Using the Task Flow Editor, you can also select how you want the system to process dialer calls.

An administrative user must configure the Dialer and Task Flow Editor modules. For more information, see:

- *Administering Avaya IP Office Contact Center Dialer*
- *Administering Avaya IP Office Contact Center Task Flow Editor*

Inbound voice routing

The inbound voice capability of the Dialer module allows you to route calls to the appropriate agent. IP Office Contact Center provides customer information to the agent, so the agent can successfully handle the request.

The following routing options are available:

- Call with ID (CLID) routing
- Skills based routing
- Advanced routing

CLID routing

CLID based routing identifies the transmitted phone number of the caller, so you can answer calls based on priority. You can set the treatment or priority of calls using the Task Flow Editor. For example, you can set a customer phone number as a VIP customer. Callers can be identified based on individual, company, region, country, and VIP status.

Skills based routing

With skills based routing, IP Office Contact Center automatically distributes the call to the agent who is best qualified to handle the request. For example, a call can be distributed to an agent who speaks a specific language or who has the required product knowledge.

IP Office Contact Center routes customer contacts from all channels, such as calls, emails, voicemail, or chat, through a topic. A topic represents a service or task. You can configure multiple topics per switch in a Task Flow Editor workflow script. These types of topics are usually routed to an agent group, where the tasks are then distributed to the next available agent. Supervisors can move agents in and out of agent groups. Supervisors can also move agents to an inbound voice queue if the existing agents in the queue are not able to meet the required service level.

Advanced routing

You can configure additional routing options with advanced routing. For example, a supervisor can:

- Add an announcement to every incoming call.
- Turn the announcement on or off as needed by changing variable values in real time.

Outbound voice

The outbound voice capability is based on agent availability for blended interactions. Agents can be dedicated to outbound calling, or given opportunities based on availability or by campaigns. You can set up outbound dialer calls in the following ways:

- IP Office Contact Center makes the outgoing call automatically. After the connection with the called party is established, IP Office Contact Center immediately distributes the call to an agent to handle.
- IP Office Contact Center distributes details about the call to an agent in preview mode. The agent then makes the call manually.

Dialer categories

The outbound category is based on the target numbers that you enter for dialer jobs. The outbound categories are:

Category	Description
Campaign dialer	In IP Office Contact Center, a campaign is associated with a topic. When you enter the target number, the active task flow call distribution process determines how jobs are assigned to agents.
Agent dialer	When you enter the target number, the job is automatically assigned to an agent.

Types of dialers

The dialer type used varies depending on how a call is established. You can select the dialer type and the corresponding parameters in the Dialer module.

Dialer type	Description
Mechanic	The system automatically starts a call to a customer. When a connection is established, the call is routed to an agent. A possible risk with this method is that the agent might not available. The advantage of this method is that agents do not waste time dealing with unavailable customers or invalid numbers.
Direct	The agent uses their phone to start the call. This method ensures that the agent is available on contact when the connection with the customer is established. The disadvantage of this method is that agents might need to deal with unavailable customers or invalid numbers.
Preview	The agent receives customer data. After reviewing the data, the agent can make the call. This method is similar to Direct Dialer.

Mechanic dialer modes

You can select the required operation modes and the corresponding dialing parameters in the Dialer module. For mechanic dialing, the IP Office Contact Center system supports the following modes:

Dialer mode	Description
Auto dialer	Starts a call only when an agent is available. This action requires a fixed dial factor of 1.0. The dial factor determines the number of calls started in comparison to the number of signed-on agents.
Power dialer	Starts as many calls as possible. Calls that cannot be assigned to an agent are terminated. A fixed value, such as 2, is used for the dial factor. With a dial factor of 2, two calls are started for each available agent.
Progressive dialer	Dialer settings are adjusted progressively as calls are made. The dial factor is adjusted depending on the drop rate.

Web Callback through the Common Gateway Interface

Web Callback is a feature that allows a user navigating to a web page to schedule a callback.

This feature requires that a **Call me** button be added to the web page. When the user clicks the **Call me** button, the browser opens an HTML form for entering the telephone number and additional contact information.

The Common Gateway Interface (CGI) collects and sends the form data to IP Office Contact Center.

In IP Office Contact Center, the CGI server stores the form data as a call job for the outbound dialer.

Callback request mechanism

- The customer submits the HTML form to the web server.
- The Web server processes the HTML form and forwards a request to the CGI script, **`cgicc.exe`**.
- The CGI script connects to the CGI server process, cgi_srv.
- The cgi_srv process on IP Office Contact Center creates a call job and sends an HTML response to the web server.

Components

The web callback feature has the following components:

- Web server
- CGI script
- CGI process
- HTML forms

Web server

You can use any web server that can execute CGI scripts.

The callback in IP Office Contact Center is tested with Microsoft Internet Information Server versions 7.5 and 8.5.

On the IP Office Contact Center DVD, you can find an example in `Examples\CGI Examples`.

CGI script

The CGI script, **`cgicc.exe`**, is the interface between the web server and the CGI process.

The CGI script has the following functions:

- Create socket connections to **`cgi_srv`**.
- Interpret variables.
- Pack variables in a buffer.
- Transport the buffer through a socket connection to be processed by **`cgi_srv`**.
- Retrieve and read the response.
- Close socket connection.
- Send the response to the web server.

For Microsoft operating systems, the CGI script is included in the IP Office Contact Center server software setup as an additional feature.

Running the web server on other platforms is possible within the frame of a customer-specific project.

The configuration file for the CGI script, `cgicc.txt`, is stored in the Scripts folder of the web server.

CGI process

The **`cgi_srv`** process runs on IP Office Contact Center and is installed as part of Additional setup.

The initialization of the CGI process consists of:

- Creating a CORBA connection to the component, **`db_srv`**, and creating the database session.
- Opening the server port to receive requests from **`cgicc`**.

To handle web requests, a new thread is created for every **`cgicc`** connection.

HTML forms

With HTML forms, information from IP Office Contact Center can be added to the web pages on the web server.

Chapter 6: Scripts: IVR Editor and Task Flow Editor

You can create Interactive Voice Response (IVR) Editor and Task Flow Editor scripts to define IP Office Contact Center telephony and dialer options.

For more information about IVR Editor and Task Flow Editor script elements and how to administer these scripts, see:

- *Administering Avaya IP Office Contact Center IVR Editor*
- *Administering Avaya IP Office Contact Center Task Flow Editor*

IVR Editor scripts

Interactive Voice Response (IVR) Editor scripts contain the following type of information:

- Description of a requested process
- Specification of what to do with a connection
- Announcements played to callers
- Options for callers
- Specification of how to handle caller entries, such as voice mails and database entries

You can use IVR Editor scripts to define how the system should use Voice Control features to handle call routing. You can configure the following types of Voice Control features in IP Office Contact Center and include them in IVR Editor scripts:

- DTMF tone recognition for evaluating subscriber entries.
- Text to speech to enable the read out loud feature for text.

  Microsoft TTS (Speech Platform 11) that is integrated into the system to enable TTS.
- Announcement creation with `.WAV` files or TTS. You can write TTS text in a script element, a text file, or a CallTag.
- Voice mail recording and distribution. You can also forward the voice mails to an agent through email.
- Read and write access to content stored in external databases.

- Script features, such as create scripts and add or edit elements.
- Telephony functions with querying elements, such as call, refer back, and transfer.

To access certain Voice Control features, you must configure IP Office Contact Center to interwork with other products and applications, such as Avaya Contact Recorder and Voicemail Pro.

You can also reference Task Flow Editor scripts within IVR Editor scripts.

IVR script types

You can use an IVR script as an announcement, a greeting, or an automatic agent.

Announcement script

- The control of the call remains with the task flow.
- You can withdraw the call from Voice Control at any time.
- You can start an announcement or greeting script.

Greeting script

- The control of the call remains with the task flow.
- The script is the task flow greeting.
- You can start an announcement or greeting script.
- The time that a caller spends with a greeting script is not counted as wait time in the statistics. This time is calculated separately.

Automatic agent script

- The system transfers the control of the call to Voice Control.
- You can only start automatic agents scripts.

Task Flow Editor scripts

The Task Flow Editor module controls routing configuration for voice, email, and chat tasks within IP Office Contact Center. A task flow set is a graphical representation of the message distribution within IP Office Contact Center. The messages can be phone calls, voice mails, or emails. The message distribution determines how IP Office Contact Center handles messages and the processes that the system starts.

A task flow set has two groups:

- Macro
- Task flows

You require a macro to use the same process in more than one task flow without creating the sequence of processes again in each task flow. After creating a task flow, you can do the following:

- Start
- Set the task flow as the default
- Print
- Export

Task Flow Editor menu field descriptions

Name	Description
Task flow set	Displays the task flow set commands.
Edit	Displays the edit commands.
Tools	Displays the tools commands.
Windows	Displays the windows commands.
Help	Displays the help commands.

Task Flow Editor menu icons

The Task Flow Editor menu icons display the frequently used menu commands.

Icon	Name	Description
	**New**	Creates a new task flow set.
	**Open**	Opens a task flow set.
	**Save**	Saves an open task flow set.
	**Activate**	Activates a loaded task flow set.
	**Print**	Prints the selected task flow of an open task flow set.
	**Task flow set**	Minimizes or maximizes the task flow set.
	**Tool bar**	Minimizes or maximizes the **Tool bar** menu.
	**Arrange**	Displays all open task flow windows on the screen without overlaps.
	**Cascade**	Displays all open task flow windows in a cascading mode.

Chapter 7: Email and chat

IP Office Contact Center agents and supervisors can communicate with their call center customers using email and instant messaging (IM). Administrators must configure Email and IM capabilities in the IP Office Contact Center interface. You require multichannel agent licenses for the agents and agent groups that will be using the Email and IM features.

In IP Office Contact Center, you must do the following:

- Ensure appropriate access privileges are assigned to agents. These privileges determine the types of Email and Chat features that agents can access.
- From the Configuration module, create Email and Chat topics.
- Create Email and Chat flows in Task Flow Editor.
- Add required Email and Chat scripts to topics.

For detailed instructions on Email and Chat configuration, see *Avaya IP Office Contact Center Email and Chat Services Task Based Guide*.

Unified media routing

The IP Office Contact Center Unified Media Routing (UMR) server enables a multichannel routing platform for voicemail, email, and IM chat channels.

Email routing process

IP Office Contact Center receives emails through SMTP, POP3, or IMAP4. The SMTP protocol enables you to send and forward customer messages in IP Office Contact Center.

An email message arrives at the UMR server from the STMP server and SMTP connector. The UMR server saves the email message in the database and submits the email for further processing through vectoring. The vectoring process determines how the email is treated and routed. The UMR server then authorizes the email client to read the email in the database.

Email operations

You can perform the following tasks from the Email screen if you enable email when you sign in to your agent groups:

- View unread emails. When you receive a new email, a visual notification displays in the UI.
- Create and send emails.
- Reply to the sender of an email or to all users on the email distribution list.
- Forward an email to one or more people.
- Delete emails. You can only delete topic emails if your administrator has given you the appropriate privilege.
- Save email drafts. For example, if you start typing an email but cannot finish right away, then you can save the draft and finish typing the email later.
- Add attachments, such as files and images, to an email before sending it.
- View customer details at the bottom of a customer email.
- Reassign or delegate customer emails to another agent or supervisor.
- Update the status of emails. After you finish addressing a customer action, you can set the email status to “Completed”. If you cannot address a customer issue right away, you can set the email status to “Defer” and then follow up on the email later.
- Select job codes that define the outcome of the email exchange.
- Print emails.
- View archived emails if your administrator has given you the appropriate privilege.

Text blocks in email

IP Office Contact Center uses text blocks to facilitate email communications. Text blocks are standard pre-formatted responses. Agents can insert text blocks into emails to provide consistent responses to customers. The text block capability also saves time and enhances agent productivity. For more information about setting up the text block capability, see *Administering Avaya IP Office Contact Center Text Blocks*.

Chat operations

You can perform the following tasks from the Chat screen if you enable chat when you sign in to your agent groups:

- View unread instant messaging (IM) notifications. When you receive a new IM, you can see a visual notification in the UI.

- Respond to an IM from a customer. Agents cannot start a new IM conversation.
- Work with multiple IM conversations at a time. The default is three.
- Use spell check if you have internet access. This feature is not supported with the IP Office Contact Center User Interface for Windows.
- Print an IM conversation.
- View customer details during an IM conversation.
- View completed or archived conversations.

Chapter 8: Reporting

IP Office Contact Center allows you to configure Realtime and Historical reports. You must have the required Realtime and Reporting privileges to access all reporting options.

Realtime reports

You can configure Realtime reports for objects that you can monitor live. The following Realtime reporting options are available:

- Topic reporting
- Agent reporting
- Agent group reporting
- Team reporting
- PBX reporting
- Interactive Voice Response (IVR) reporting

Historical reports

Historical reporting displays the data created upon completion of a task. For example, you can generate historical reports for incoming and outgoing calls, emails, and IM chats. Using the data from Historical reports, you can identify trends that allow you to plan for increases in call and email activity.

The following Historical reporting options are available:

- Agent report
- Agent group report
- Telephone report
- Dialer report
- Skill combination report
- System report
- Team report
- Topic report
- IVR report

Related links

Realtime information tab field descriptions on page 33
Reporting tab field descriptions on page 32

Reporting options

The following table summarizes reporting methods and options for all report types.

Table 2: Summary of reporting options

Item	Description
Manual and automatic settings	You can choose to generate manual or automatic reports. • Manual reporting: The user generates a report manually at any time. • Automatic reporting: You can configure IP Office Contact Center to automatically generate reports at specified times, such as every evening. **Note:** Automatic reporting is only available in the IP Office Contact Center User Interface for Windows.
Reporting methods	You can use one of the following reporting methods: **Warning:** Do not mix these reporting operations. • Interval reporting: All call counters display as events on a time axis. You can view conversation times, call times, and other event information in intervals. • Back office reporting: All report values, such as counters, times, and job codes, appear in the interval during which IP Office Contact Center first processed the event. Times exceeding the duration of the interval still appear under the first interval. IP Office Contact Center does not record data for all further intervals in an event.
User access options	You can choose to restrict who can access your reports using one of the following options: • Private: You can enable private reporting for the user who defined the report. • Public: You can enable reporting as public, so that all users with privileges can view the configured report type.
Display options	You can choose to display report results in the following ways: • Tabular format: The report displays as a table. The order of events is organized based on custom groupings. • Graphical display: The report displays as a line graph, bar chart, or pie chart. This display is not available for all agent groups and topic counters.
Output options	You can either view report outputs directly in the UI or export the output to a file.

Task Reporting

In this section, the term *task* is a collective term for: calls, emails, and Internet connections.

In contrast to counter-based reporting, Task Reporting makes specific processes of an IP Office Contact Center system transparent for further evaluation.

Reporting types

Reporting type	Description
Task-related evaluation	A task-related evaluation contains statistical data collected from the IP Office Contact Center system. The system selects the data related to a task, edits the data if required, and then copies the statistics to the Task Reporting database of the IP Office Contact Center provider. Thus, the IP Office Contact Center provider has access to an extensive overview of the customers. This section describes the task-related evaluation only.
Agent logging	Events that are unrelated to a task are stored in the task reporting database. Non-task related events are: • Log in or log off for agents • Sign on or sign off for agent groups • Break with reason code • Wrap-up time without a call This data is available with the agent status reports function available to supervisors in the IP Office Contact Center User Interface.

Difference between Task Reporting and counter-based reporting

The main difference is that counter-based reporting is interval based and displays mean values. Thus, counter-based reporting delivers precalculated figures such as average values. Task Reporting provides raw information such as total talking time for each call.

Task Reporting does not replace or substitute the counter-based reporting of IP Office Contact Center.

Mode of operation

Tasks come into IP Office Contact Center from the PBX or the Mail server.

The IP Office Contact Center server distributes the tasks to agents. The information from the processed tasks is sent to the Task Reporting Server, and from the Task Reporting Server to the Task Reporting database.

If the system cannot write data to the database, the system stores the data in a log file.

The tr_srv process normally runs on the IP Office Contact Center, but individual computers can also run the process.

Evaluation of contact data

The Task Reporting Server can evaluate and provide output data on three levels: Level 1, Level 2, and Level 3. A default trigger in the IP Office Contact Center Task Reporting database creates Level 0 data automatically.

Level	Description	Stored data
Level 0	Level 0 describes a contact, for example a customer call.	• Aggregated connection data of a customer. • For each Level 0 record, there can be multiple Level 1 records such as consultation or transferred connections. • A default trigger creates Level 0 data using data from Level 1 and Level 2.
Level 1	Level 1 describes a connection. A contact can consist of several connections such as consultation, conference, or transfer.	• General information of a Task, based on connections: Task ID, Time stamp, Task Type, Customer name if available through CLIP routing, Calling number, Called Number, Chargeable connecting time, Type of call, and Task Tags. Call type examples: internal, external, routed, and direct.
Level 2	Level 2 describes special target and topic events.	• Details about a connection of Level 1. • Target: Agent or Foreign Target, Topic View, Target name, Talking time, Waiting time. The waiting time for agents is until the connect or abort operation, and the total waiting time for topics. • For each Level 1 record, there can be multiple Level 2 records. For example: ringing timeout has expired, chain call, Topic-Topic-Overflow.
Level 3	Level 3 describes events.	**Warning:** Level 3 is disabled, and you must not enable Level 3.

The Task Reporting Server does not distinguish between the calling and called subscriber. A connection from A to B is equivalent to a connection from B to A.

Whether the Task Reporting server evaluates a connecting device depends on whether the server monitors the device.

When the server monitors one of the devices in a connection, a contact can be a call, an email, a VoiceMail, a Fax, or an SMS. In case of a call, actions such as retrieve, conference, or transfer can form a contact. The devices in the connection can be trunks or subscribers.

In the Task Database, each connection is represented by a record. All data records belonging to a contact are marked with a unique key called TrackId, and the system can aggregate the records for

evaluation. All data records of a connection are marked with a unique TaskId. The TrackId is equal to the TaskId of the first connection of the contact.

Interpreting contact data

- If the system distributes a task to a personal contact, last agent, or current agent, the system enters the default agent group configured for the topic `AG Name`.
- If the system distributes a task to a busy external destination, the data for the Level 2 Target has the value 0.
- Manually created emails are undistributed and disabled.
- For Order code: in Level 2, the system only uses the first order code that each agent enters.
- A transfer can only follow after a consultation call. A contact with one transfer contains three Level 1 data sets: original incoming call, consultation call, and resulting transferred connection.
- Several consultation calls can follow each other.
- A conference contains two Level 1 data sets.
- A Topic-topic-overflow for one connection contains one Level 1 data set and two Level 2 Topic Data sets.
- Ringing Time Out: Agent A does not answer and after a configured time-out the system distributes the call to the next agent: one Level 1 data set, two Level 2 Topic data sets, one Level 2 Agent data set for every Agent.
- Outbound call, mechanic campaign type: the system signals the call as an inbound topic call, but marks the call with the attribute TA_OutboundDialer. CCK_CallingAddress contains the destination number.
- Recorded Voicemail (IVR): If the IVR script records a voicemail, the attribute TA_Voicemessage is 1. The system counts the Voicemail when the system records the Voicemail, and not after you play the voicemail message.
- Played Voicemail: The field CCK_CallingAddress contains the telephone number of the original caller, who recorded the message. If the telephone number is unavailable, the system stores the number of VoiceUnit trunk lines in CCK_CallingAddress.
- Attributes for transferred call: If the original call is a routed call and the consultation call is a direct call, the system marks the resulting transferred call as a direct call.
- Call Tags after transfer: The system copies all call tags from the original call and the consultation call to the resulting transferred call. If the original call and the consultation call have the same call tag but with different values, the value from the original call is valid for the transferred call.

  Note:

  To get the call tag value of the transferred call from the consultation call, you must configure the CCK_Called_Address tag in the IP Office Contact Center User Interface.
- Call Tags after conference: The system copies all call tags from the original call and from the consultation call to the resulting call. In a conference, the tags contain the first data sequence of the contact.

Note:

To get the original tag value for a conference or the consultation tag value for a consultation call, you must configure the CCK_Called_Address tag in the IP Office Contact Center User Interface.

Configuration

Configuration of tr_srv

Before starting tr_srv, you must start the statistic_srv process.

During installation, the system creates the following Task Reports:

- LevelOne(System)
- LevelTwoAgent(System)
- LevelTwoTopic(System)
- LevelOneCustomerHist(System)
- AgentLogging

You can start or stop the Task Reports using the IP Office Contact Center Administration User Interface.

The Task Reporting Server is installed simultaneously with IP Office Contact Center. The Watchdog starts the tr_srv process.

The data storage time is configurable. When set to 0, the system does not delete data. The deletion of old data occurs at 01:00. With the default configuration, the system deletes task reporting data after 400 days.

When configured with a value greater than 0, every night at 01:00 tr_srv calls a stored procedure named TRTidyUp. This procedure performs the task of deleting data. If the parameter is set to 0, the system does not perform data deletion.

Startup parameters for tr_srv

The default startup command for the tr_srv process is the following:

```
tr_Srv -nsh <OrbHost> -nsp 2809 -tt <TTraceHost>
```

Where:

- `<OrbHost>` is the name of the computer running the Avaya omniORB Naming Service.
- `<TTraceHost>` is the name of the computer running the TTrace Server service.

Table 3: Special startup parameters

The following table contains special startup parameters for the tr_srv process:

Startup parameter	Description
-L1 n1	Shows when the system issues the first warning about the size of the log file. You can scan this warning in the ttrace file. The setting n1 is in Kilobytes. This startup parameter is optional.
-L2 n2	Shows when the system issues the second warning about the size of the log file. The setting n2 is in Kilobytes. This startup parameter is optional.
-L3 n3	Shows when the system issues the third warning about the size of the log file. You can scan this warning in the ttrace file. The setting n3 is in Kilobytes. This startup parameter is optional.
-L4 n4	Shows when the system issues the fourth warning about the size of the log file. You can scan this warning in the ttrace file. The setting n4 is in Kilobytes. This startup parameter is optional.
-MS ms	Shows the maximum size of the log file. The setting ms is in Kilobytes. When the log file reaches this limit, the system opens a new file. This startup parameter is optional.
-NGN	Stands for New line go new line. This parameter applies to Sybase databases.
-SN	Stands for Semicolon new line. This parameter applies to Oracle and PostgreSQL databases and is the default parameter.
-N	Stands for New line. This parameter applies to Microsoft SQLServer.
–DP hh:mm	Stands for DeletePoint. This parameter shows the time when tr_Srv deletes old data, as configured in the configuration UI. The default value is 00:00.

Important:

To use the warning threshold, you must start the tr_srv process with the L1, L2, L3, L4, and MS parameters.

Database connection

The tr_srv process writes the data of a report to a task database through the ODBC interface. The necessary ODBC driver must be installed on the computer running the tr_srv process. A corresponding ODBC driver must be installed for each task database. See the respective database documentation for how to configure the ODBC driver for the task database.

Note:

If the Taskreporting database and the tr_srv process run on the same computer that runs the db_srv process and the IP Office Contact Center database, use the PostgreSQL Unicode driver that the system installs automatically.

For default IP Office Contact Center reports, a System DSN with the name TRS-DSN is created during the installation of IP Office Contact Center if the PostgreSQL Unicode ODBC driver is found. For private reports, you must configure a system DSN for each task.

Warning:

If you use a 64-bit operating system, you must use the 32-bit version of ODBC Administrator, located in the following folder: `C:\Windows\SysWOW64\odbcad32.exe`

Do not use the ODBC Administrator available in Administrative Tools on x64 systems.

Task Reporting database

During the installation of IP Office Contact Center, the system creates default reports and the corresponding task reporting database.

The Task Reporting database contains the following tables:

- For contact evaluation:
  - LevelZeroData
  - LevelOneData
  - LevelTwoAgentData
  - LevelTwoTopicData
- For customer history:
  - LevelOneCustHistory

Level zero contact data

Item	Type	Description
CCK_TrackId	character (16)	The unique reference number for a contact, necessary for identifying the connections of a contact.
TA_TimeStamp	Time stamp without the time zone	The date or time when the task was created.
TA_TaskType	Smallint	The task type. The values are: 1 for voice, 2 for email, 3 for chat.
CCK_CallingNumber	character varying (30)	The number called for this connection even if the call is diverted.
CCK_CallerName	character varying (40)	The caller name from the customer recognition (CLIP). You must configure the customer name in IP Office Contact Center before the task is active. If no information is available, the field is blank.
CCK_CustomerNumber	character varying (20)	The customer number from the customer recognition (CLIP). You must configure the customer number in IP Office Contact Center before the task is active. If no information is available, the field is blank.
CCK_Priority	character varying (5)	The customer priority from the customer recognition (CLIP). If no information is available, the field is blank.
CCK_CalledNumber	character varying (30)	This field contains the first contact number called or the email address.
FirstTopicName	character varying (30)	The name of the first topic involved during the contact.

Table continues…

Item	Type	Description
DirectACDContact	Smallint	The field that displays whether the first connection is an ACD call. 1: first connection is an ACD-call, 0 is something else
ExternContact	Smallint	The field that displays whether the contact is external. 1: contact with trunk, 0 is something else
InboundContact	Smallint	The field that displays whether the contact is an inbound contact. 1: inbound contact, 0 is something else
ContactConnectionState	character varying (30)	The connection state of the first connection: • ConnectedDirect: Connected without queue • ConnectedQueued: Connected with queue without announcement • ConnectedQueuedAnnounce: Connected with queue and announcement • DroppedOverload: Disconnected by the system because of overload • DroppedBusy: Disconnected by the system, busy Target • DroppedCanceled: Disconnected by the system by call flow or B subscriber • AbandonedAlerting: Disconnected after distribution of the call to an agent or ForeignTarget by caller during a call ringing • AbandonedQueued: Disconnected by caller in queue without announcement • AbandonedQueuedAnnounce: Disconnected by caller in queue with announcement
OutccContact	Smallint	The field that determines whether the contact begins as a manual outbound call. 1: Contact begins as a manual outbound call (outcc), 0 is something else.
DialerContact	Smallint	The field that determines whether the contact begins as a dialer call. 1: Contact begins as a dialer call, 0 is something else.
VoiceMessage	Smallint	The field that determines whether the contact begins with recording a voice mail message. 1: Contact begins with recording a voice mail message, 0 is something else.

Table continues…

Item	Type	Description
CustomerTasks	Smallint	The total caller connections for the entire contact.
ConnectedCustomerTasks	Smallint	The total caller conversations for the entire contact.
CustomerISDNConnectTime	Int	The total chargeable caller connection times for the entire contact.
CustomerAlertingTime	Int	The total caller call times for the entire contact at all agent telephones.
CustomerSpeechTime	Int	The total caller conversation times for the entire contact.
CustomerHoldTime	Int	The total caller hold times for the entire contact.
CustomerWaitTime	Int	The total caller wait times for the entire contact.
CustomerFirstWaitTime	Int	The wait time of the oldest connection of the entire contact.
ConsultTasks	Smallint	The number of attempted consultations for the entire contact.
ConnectedConsultTasks	Smallint	The number of consultations with connection for the entire contact.
ConsultSpeechTime	Int	The total conversation times in consultation for the entire contact.
ContactACWTime	Int	The total ACW time for the entire contact.
NetworkOverflows	Int	The total number of network overflows for the entire contact.
FirstRoutedTopicName	character varying (30)	The name of the routed topic involved in the first routed connection of the contact.
FirstTopicNameTimeStamp	Time stamp without the time zone	The Help column that the trigger uses for determing the FirstTopicName.

Level one connection data

Field	Type	Description
TA_TaskId	character (16)	Displays the task or connection identifier.
TA_TimeStamp	Time stamp without the time zone	Displays the date and time of the task creation.
TA_TaskType	Smallint	Identifies the task type. The options are: • 1: voice • 2: email • 3: chat

Table continues…

Field	Type	Description
TA_ConsultationCall	Smallint	Indicates whether the call is a consultation call. The options are: • 1: consultation call • 0: other
TA_ExternTask	Smallint	Indicates whether the call is from an external trunk. The options are: • 1: call using an external trunk • 0: other
TA_InternTask	Smallint	Indicates whether the call is internal. The options are: • 1: internal call • 0: other
TA_OutboundDialer	Smallint	Indicates whether IP Office Contact Center started the call. The options are: • 1: an IP Office Contact Center Dialer started the call • 0: other
TA_VoiceMessage	Smallint	Indicates whether a Voice mail message was recorded. • 1: recorded • 0: other
TA_DirectCall	Smallint	Displays whether the call is a direct, non-ACD call. • 1: direct, non-ACD • 0: ACD
TA_RoutedCall	Smallint	Displays whether the contact is an ACD call. • 1: ACD call • 0: other **Note:** If a consultation call is marked as an ACD call, this field also applies to the transferred connection.
TA_Outbound	Smallint	Displays whether the contact is an outgoing call from the perspective of the A-subscriber. • 1: outgoing call from A-subscriber view • 0: other
TA_Inbound	Smallint	Displays whether the contact is an incoming call from the perspective of the A-subscriber. • 1: incoming call from A-subscriber view • 0: other

Table continues…

Field	Type	Description
TM_CallConnected	Int	The total chargeable connection time and the total connection time without wrap-up time. Counts the time that the caller is connected through ISDN. For a call to a topic with an announcement, the counter starts when the first announcement starts and counts until the call is released. If the call is assigned to an agent directly, the counter starts when the agent answers the call. For emails, the time is always 0.
TM_Alerting	Int	The total call time for all B-subscribers or the time that an email remains unread.
TM_Hold	Int	The total hold time for all B-subscribers.
TM_ACW	Int	The total ACW time for all B-subscribers.
TM_Speech	Int	The total conversation time of all B-subscribers for conferences greater than the chargeable connection time or the email processing time.
TM_Wait	Int	The total wait time for all B-subscribers. The wait time is the time between the start of the connection and the contact with the agent. The total wait time includes all the times in the queue and the call times with the agent. The total wait time is the total of all the wait times for the associated agent records.
CCK_CallerName	character varying (40)	The caller name from IP Office Contact Center customer recognition (CLIP). If information is unavailable, this field is blank.
CCK_CustomerNumber	character varying (20)	The customer number from IP Office Contact Center customer recognition (CLIP). If information is unavailable, this field is blank.
CCK_TrackId	character (16)	The unique reference number for a contact, necessary to identify the connections of the contact.
CCK_DialedTheme	character varying (30)	The first routing topic. If a consultation to a call center topic is made, the transferred call also contains the name of the routing topic.
CCK_RoutedTheme	character varying (30)	Displays the last used topic. This field can be useful in case of a topic overflow, for example.
CCK_CalledNumber	character varying (30)	The number called for this connection even if the call was diverted.
CCK_CallingNumber	character varying (30)	The caller number or email address. If information is unavailable, the field contains ?.

Table continues…

Field	Type	Description
CCK_Priority	character varying (5)	The customer priority from IP Office Contact Center customer recognition (CLIP). If information is unavailable, this field is blank.
TA_ConnectionState	character varying (30)	Connection state: • ConnectedDirect: Connected without queue • ConnectedQueued: Connected with queue without announcement • ConnectedQueuedAnnounce: Connected with queue and announcement • DroppedOverload: Disconnected by the system because of overload • DroppedBusy: Disconnected by the system, busy Target • DroppedCanceled: Disconnected by the system by call flow or B subscriber • AbandonedAlerting: Disconnected by the caller during a call • AbandonedQueued: Disconnected by the caller in queue without announcement • AbandonedQueuedAnnounce: Disconnected by the caller in queue with announcement
TA_IsNetworkOverflow	Smallint	Displays whether the connection contains a network overflow. • 1: the connection contains a network overflow • 0: other

Level two target data

The target data in the following table is also called Agent or Foreign Target.

Field	Type	Description
TA_TaskId	character (16)	Displays the task or connection identifier.
TA_TimeStamp	Time stamp without the time zone	Displays the date and time of the task creation.
TA_OrderCode	character varying (30)	The order code or job code. If the agent enters more than one code, the first order code is stored.
Tm_Alerting	Int	The ringing time for the agent telephone or external destination for agent extensions. The destination is B-

Table continues…

Field	Type	Description
		subscriber when the agent is A-subscriber or the external destination is 0.
Tm_Hold	Int	The hold time for agent extensions. The destination for this connection, in case of agent extensions. The destination is the B-subscriber when the Agent is A-subscriber 0.
Tm_ACW	Int	ACW for agent extensions. The destination for this connection, in case of agent extensions. The destination is the B-subscriber when the Agent is A-subscriber or the external destination is 0.
Tm_Speech	Int	The connection time for agent extensions. The destination for this connection, in case of agent extensions. The destination is the B-subscriber when the Agent is A-subscriber. The total connection time is the sum of speech time and hold time.
Tm_Wait	Int	The total wait time of the caller, until the call is connected to this agent. The total time includes all the times in the queue and the call times. The agent-specific wait time restarts from zero after a conversation with an agent.
CCK_AgentName	character varying (30)	The destination name: agent or external destination.
CCK_AgentNumber	character varying (30)	The destination number: agent or external destination.
CCK_AGName	character varying (30)	The agent group used to route the call to the agent.
CCK_DialedTheme	character varying (30)	The name of the routing topic used to route the call to the agent or to the external destination.
TA_TargetType	character varying (20)	*Agent*: Agent, *ForeignTarget*: external destination.

Level two topic data

Field	Type	Description
TA_TaskId	character (16)	Displays the task or connection identifier.
TA_TimeStamp	Time stamp without the time zone	Displays the date and time of the task creation.
Tm_Wait	Int	The wait time in the waiting queue for the topic. This value represents the time without the welcome announcement.
Tm_AnnTime	Int	The wait time in the topic queue. This value includes the time of the welcome announcement.

Table continues…

Field	Type	Description
Tm_AnnTime_DSPF	Int	The wait time in the topic queue with a VEA announcement, including the welcome announcement.
Tm_AnnTime_VU	Int	The wait time in the topic queue with an IVR announcement, including the welcome announcement.
Tm_WaitWelcome	Int	The wait time in the topic queue with a welcome announcement: VEA, DSPF, or IVR.
CCK_AgentName	character varying (30)	The agent name or the name of the external destination when the system routes the call to an agent. If no information is available, this field is blank.
CCK_DialedTheme	character varying (30)	The routing topic. The topic can vary from the dialed topic in case of a topic overflow.

LevelOneCustHistory

Table 4: Fields from the LevelOneCustHistory table

The following table describes the fields from the customer history view.

This information is in the TR-Datenbank database.

Field	Type	Description
TA_TaskId	character (16)	Displays the task or connection identifier.
CCK_TrackId	character (16)	The contact identifier.
CCK_ForeignTargetAddress	character varying (40)	The number or email address of the external destination.
CCK_ForeignTargetName	character varying (30)	The name and address of the external destination.
CCK_LastAgentName	character varying (30)	The name of the agent that made the last connection with the caller.
UM_Subject	character varying (255)	The subject of the email.
CCK_CustomerInfo	character varying (255)	The content of the field in the first screen of the IP Office Contact Center UI, in which the agent can write any comment.
OD_Pers_Note	character varying (255)	The content of the field in the first screen of the IP Office Contact Center UI, in which the agent can write any comment. When the outbound dialer starts the call, the system stores this tag in the call job.
CCK_CCIT_Key	character (16)	The customer data identification number: customer CCId.

Best practices for troubleshooting

TTrace categories of the tr_srv process

The tr_srv process supports the TTrace interface. You can enable or disable categories using TTConsole during runtime. The following table lists the possible categories and explains the effects.

Category	Description	Default
TRS_ERR	Errors or warnings concerning the Task Reporting server	On
TRS_EVENT	Important events in regular behavior, for each task one entry with TaskId	On
TRS_DATA	Detailed information about the data flow in the task reporting server	Off
TRS_INFO	Detailed information about the contents of the data records	Off
TRS_DELETER	Detailed information about data deletion	Off

statistics_srv process

The tr_srv process contains all data of the IP Office Contact Center statistics_srv process.

If the statistic_srv process fails, all the database connections remain established, but the messages of IP Office Contact Center are no longer received. In this case:

- A status message of the **Task Reporting Server Configuration** application shows the connection failure.
- The tr_srv process checks the connection **every minute** and tries to reestablish the connection.
- When the statistic_srv process runs again, the system receives the data related to the activated report and writes the data to the database.

Xstat Server

The xstat_srv process handles the statistics data of IP Office Contact Center. This data is available in internal tables in a complex structure.

To make the statistics data easily accessible to external applications, you can process the data according to topics, agents, or agent groups. The system then makes the data available to external applications through the ODBC interface.

Configuration

Statistics ID

The xstat_srv process generates the configured statistics data daily or hourly for every client. To do this, the client for which you save the configuration needs a number (statId) so that you can read the client data later on.

Avaya issues the statId, which must be unique for all clients.

With the IP Office Contact Center UI, you can process a report with StatId 123. In this case, configuration through SQL scripts is unnecessary.

The following table displays the default statId values:

statId	Client
1	Avaya test
123	Personnel planning system

Evaluations for the past

If the xstat_srv does not perform an evaluation because of an IP Office Contact Center server malfunction, the xstat_srv process does not perform this evaluation at a later date. However, you can manually perform the daily evaluation for up to the past 14 days.

Use the XSTAT_DAYSBACK environment variable for the manual evaluation. You must set the environment variable for each missing interval, after which you must restart xstat_srv. For normal operation this variable must not be set to 0.

INVISION configuration

To see all the elements in the INVISION tree structure, you must edit some entries in the registry database on the client side.

System variables

The following table lists the system variables used by the Xstat Server:

System Variable	Default value	Description
XSTAT_BUFFERLIMIT	100000	The size of the Cobra packets in bytes with which the statistics data are written to the database.
XSTAT_DAYSBACK	0	One-time extraction of the statistics. See above.
XSTAT_HOURSBACK	0	One-time extraction of the statistics. See above.
PABXSHORTNAME_EN	0	IP Office Contact Center provides each phone number with the code of the associated PABX to clearly identify an entry in the system. Example: TK1_1400 for agents

Table continues…

System Variable	Default value	Description
		with phone number 1400 on the PABX "TK1." Because unique names are used in the IP Office Contact Center, this flag is superfluous.

The Xstat Server generates the report for the configured counters of **all** objects: topics, agents, and agent groups. The objects can be allocated to a report through a technical agent created with the name XStatUser<statId>.

Example: XStatUser123 for standard statistics. Restriction: The Id must be three digits in length. The objects to be used for the respective report are determined by the rights of the agent in the configuration UI.

Database access options

You can gain access to the IP Office Contact Center database using the configured data sources of the ODBC Data Source Administrator. Use this method when the client application requires access to the IP Office Contact Center database even without a logged-in user.

Note:

For gaining access to the tables used by xstat_srv in the IP Office Contact Center database, use the user name `xstatuser`. Avaya issues the password for the user `xstatuser`.

Database structure

This section describes the database tables used for storing the Xstat Server information.

The Xstat Server processes statistics daily for every client. The following tables contain entries for managing the statistics:

- XStatControl
- XStatTopicCntIds
- XStatAgentCntIds
- XStatAGCntIds

The client is the application employed for staff planning. For example, Invision.

The following tables contain the results of the analyses:

- XStatData
- XStatTopicCntData
- XStatAgentCntData
- XStatAGCntData

The client of the staff planning application or the xstat_srv process can delete the results from the tables after a set hold time.

The xstat_srv process also uses the following tables:

- XTopics: to store the topics configured in the IP Office Contact Center system
- XAgents: to store agent information
- XAGs: to store agent groups

The client of the staff planning application can gain access to the tables through ODBC.

To save data from telephone systems that do not provide phone numbers for agents, the system saves the names instead of a phone number in the following tables: XStatAGCntData, XStatAgentCntData, and XStatTopicCntDataXStatCntData.

XstatControl

You must put the entries for each client in the XstatControl table.

For statistics with statId 123, you can also carry out the configuration using the IP Office Contact Center UI.

You do not need to restart the xstat_srv process when you edit the XStatControl table or other tables.

Table 5: Entries

The following fields from the XstatControl table must contain exactly one entry for each client.

Field name	Data type	Example value	Description
statId	int	1	Client statistics ID
tRun	int	7500	The local time, in seconds from midnight, when the xstat_srv process performs the evaluation for this client. Example: 2:05 corresponds to 7500. The *Hourly evaluation* subsection describes the hourly evaluation.
tStart	int	28800	The start time, in seconds from midnight, for the evaluation period. Example: 8:00 corresponds to 28800.

Table continues…

Field name	Data type	Example value	Description
tDura	int	7200	Total length of the evaluation period in seconds. Example: From 08:00 to 10:00 corresponds to 7200.
tIntervall	int	900	The length of a specific interval, in seconds. The length is saved in XStatData.tIntervall after the evaluation because the minimum possible interval length is configured in the IP Office Contact Center system. Example: 15 minutes correspond to 900.
tHold	int	2419200	Hold time of the data in seconds. The system removes old data from XStatData and XStatCntIds with every operation. Example: 4 weeks corresponds to 2419200.
odbcConnect	char[255]	DRIVER={Mi crosoft Access Driver (*.mdb)};DB Q=data.mdb	Connect string for xstat2odbc for registering an external database. The entire string must be indicated with the driver. The exact content of the string greatly depends on the ODBC driver used. **Important:** This configuration is unsupported in IP Office Contact Center.

Hourly evaluation

You can specify the execution interval directly using the `tRepeatInterval` field. For the hourly evaluation, set the `tRepeatInterval` field to 3600.

When configuring the Xstat statistics, think about the overall performance of the system. The performance depends on the number of topics, agents, and agent groups on the number of configured counters and the interval resolution. Avaya recommends that you coordinate the configuration within the scope of a customer project, especially if the configuration is outside of the daily standard.

Results Data

Once a day, for every client, the xstat_srv process analyzes the data of the previous day:

- In a specified range: from XStatControl.tStart to XStatControl.tDura
- At a specified evaluation period: XStatControl.tRun
- With the specified interval length: XStatControl.tIntervall

The xstat_srv process writes the results to the XstatData, XstatTopicCntData, XstatAgentCntData, and XStatAGCntData tables. The actual duration of data processing can be greater than the duration that you initially specify when the IP Office Contact Center saving interval is greater than the length specified in XStatControl.tIntervall.

The XTopics table contains the topics configured in IP Office Contact Center.

The XAgents table contains the agents configured in IP Office Contact Center.

The XAGs table contains the agent groups configured in IP Office Contact Center.

XStatTopicCntIds, XStatAgentCntIds, XStatAGCntIds

The client-specific counters that IP Office Contact Center uses for the topics, agents, and agent group statistics are stipulated in the XStatTopicCntIds, XStatAgentCntIds, and XStatAGCntIds tables.

The tables must contain only the defined counters for the respective statistics type, otherwise the reports do not display any data.

For statistics with statId 123, you can also carry out the configuration in the IP Office Contact Center.

You do not need to restart the xstat_srv process when you edit the XStatTopicCntIds, XStatAgentCntIds, and XStatAGCntIds tables.

Warning:

Only enter the counters required by the client application. Do not enter all the possible counters because more counters use more memory and CPU resources.

Table 6: Entries

The XstatTopicCntIds, XstatAgentCntIds, and XStatAGCntIds tables all have the following identical structure:

Field name	Data type	Example value	Description
statId	int	1	Client statistics ID
CntId	int	2000	Counter ID (cntId)
ColName	char[30]	‘Q_totNNew’	Brief description (optional)
ColCmt	char[255]	'Total of calls per topic'	Comments field (optional)

XStatTopics, XstatAgents, XAGs

The xstat_srv process saves the names and numbers of all topics, agents, and agent groups configured in IP Office Contact Center in the XTopics, XAgents ad XAGs tables.

Table 7: Entries

The XStatTopics, XstatAgents, and XAGs tables all have the following identical structure:

Field name	Data type	Example value	Description
No.	char[30]	17792	The number of topics, agents, or agent groups (AGs), if available. Otherwise, the CCId of the object for AGs and agents.
Name	char[30]	Orders	The name of the topic, agent, or agent group.

XStatAgentItemData

Results for agent counters that require further aggregation are saved in the XStatAgentItemData table.

Currently, only the *Total of calls per job code* counter is implemented.

Table 8: Entries

The XStatAgentItemData table has the following structure:

Field name	Data type	Example value	Description
statId	int	1	Statistics ID
tStart	CS_DATETIME	13–Nov-1998 09:00	Start of the interval
nr	char[30]	4711	Number of agents
cntId	int	87	Counter ID (cntId)
val	int	5	Counter value
Item	char[255]	11	For example: ACode

XStatTopicCntData, XstatAgentCntData, XStatAGCntData

The XStatTopicCntData, XStatAgentCntData, and XStatAGCntData tables contain accumulated values for all counters in the XStatTopicCntIds, XStatAgentCntIds, and XStatAGCntIds tables.

Table 9: Entries

The XStatTopicCntData, XstatAgentCntData, and XStatAGCntData tables all have the following identical structure:

Field name	Data type	Example value	Description
statId	int	1	Client statistics ID
tStart	CS_DATETIME	13-Nov-1998 09:00	Start of the interval
name	char[30]	topic1	Name of the topic, agent, or agent group
CntId	int	2000	Counter ID (cntId)
val	int	5	Value

XStatData

The Xstat Server writes a summary data record to the XStatData table after every evaluation.

Table 10: Entries

The XStatData table has the following structure:

Field name	Data type	Example value	Description
statId	int	1	Statistics ID
tStart	CS_DATETIME	13–Nov-1998 09:00	Start of the evaluation interval (XStatControl.tStart +yesterday 00:00).
tDura	int	7200	Length of the evaluation interval in seconds, as specified in XStatControl.
tIntervall	int	3600	Length of an interval in seconds, for example: 15 minutes -> 900. As a rule, tDura is the same as the interval specified in XStatControl.tIntervall. The duration can deviate if the interval length with which the IP Office Contact Center statistics server writes the data is greater than the value

Table continues…

Field name	Data type	Example value	Description
			specified in XStatControl.tIntervall.
errorCode	int	0	0: Evaluation OK 1: Error during evaluation
exported	int	0	0: Not yet exported ODBC 1: Exported using ODBC **Important:** This configuration is unused in IP Office Contact Center.

Chapter 9: Administration and maintenance options

You can perform some administration tasks directly in the Windows UI. An administration web portal also provides set up and administration options. For more information about the web-based administration portal for IP Office Contact Center, see *Using Avaya IP Office Contact Center Web Administration Portal*.

In addition, the following advanced administration and maintenance options are available with IP Office Contact Center. You must be familiar with the PostgreSQL database and drivers before working with these administrative options.

- Archiving content.

  Note:

  The following sections primarily describe second-level archiving.

- Monitoring administrative applications with Watchdog.
- Using the TTrace console to view process outputs and log files.
- Using the Task Reporting server or Xstat server for reporting statistics. For more information, see Reporting on page 56.

Related links

Task Reporting on page 58
Xstat Server on page 71

Archiving

The runtime database of the IP Office Contact Center system becomes full in time, so archiving is a mandatory task that you must perform periodically.

IP Office Contact Center provides multilevel archiving. You can archive email documents stored in a C3K database after the system processes the documents. You can start the archiving process cyclically.

The archiving process transports data from the runtime database into an archiving database. The archiving database can be on the same database server or on a different database server.

The following archiving levels are available:

- First level archiving: Documents are displayed in a Completed folder and stored in the default C3000 database for the UMR component.
- Second level archiving: Documents are stored in a secondary database and deleted from the primary database. Second-level archiving uses a process called Archie, which is a Reporting on Demand (RoD) process of the C3K database. The email administrator can start an archiving cycle using a Scheduler.

Important:

The Archiving tool is not meant for long-term usage. The archive database does not have level indications, automatic backup, or disk overflow prevention functionality.

The Email Exporter component is intended for long-term archiving of emails that are more than 100 days old. The Email Exporter component moves archived emails into a zip file stored on the IP Office Contact Center server. You can download zip files with archived emails from the web administration portal.

The following sections describe the configuration and operation modes for second-level archiving.

Properties of second-level archiving

Second-level archiving provides the following features:

- Deleting documents from the runtime database
- Writing the documents to an archiving database and deleting those documents from the runtime database
- Starting delete and archiving jobs using the Scheduler

Rules for archiving documents

Before you decide to set an archiving job, ensure that:

- All documents that belong to one task are always archived or deleted together. This process revolves around the main document. The main document is the document that starts the process, which is the document with the earliest time of creation.
- The main document must meet the following criteria:
  - The document is archived in the archived state.

    This guarantees that only Call Center messages are archived.
  - The creation date of the document is before a specified time.

Secondary databases for archiving

IP Office Contact Center uses a secondary database for the following reasons:

- The primary C3000 runtime database becomes full over time. Some archived data must be stored in a secondary database.
- Data can be easier to find when organized between two databases.

Second-level archiving is supported on the PostgreSQL database.

Database tables

The following table contains the source and target database tables used for archiving:

Source tables	Target tables
C3K_DOCUMENT	C3K_DOCUMENT_ARCHIVE
C3K_DOCPROP	C3K_DOCPROP_ARCHIVE
C3K_DOCUMENT_INDEX	C3K_DOCUMENT_INDEX_ARCHIVE
C3K_CONFIG_DOCINDEX	C3K_CONFIG_DOCINDEX_ARCHIVE
C3K_REQUEST	C3K_REQUEST_ARCHIVE
C3K_USER	C3K_USER_ARCHIVE
C3K_USER2	C3K_USER2_ARCHIVE=

Operation of the archiving and deletion process

The following section describes the operation of the scheduler and archiving process in UMR Administrator.

Database entries can be deleted or archived. The system controls the execution of archiving and delete jobs using the Scheduler.

The Scheduler works in the background. You can operate the scheduler using the following tabs in the Archive/Delete page from WebAdmin:

- **Archiving UMR documents**
- **Delete UMR documents**

Note:

The system does not update the information on these two tabs automatically. You must click the **Update** button when you expect changes.

The Scheduler receives a standard archiving job following the UMR installation in IP Office Contact Center.

The default archiving job, set to run once a week, on Sunday at 2.00 am, is an example. You can change the schedule for the archiving job anytime.

Note:

For a high message volume, perform the archiving job when operations are slow.

Prerequisites

To display and process archiving jobs and delete jobs, you need the UMR Administrator privilege.

Operation modes

Mode	Description
once	The system performs the archiving or delete job one time.
repeat after	The system performs the archiving or deletion job at regular intervals (cyclic archiving/deleting). Enter a number in the field and select a unit from the drop–down list (minutes, hours, days, weeks, months).

Job status

An archiving or deletion job can take the following statuses:

Status	Description
disabled	The job is not enabled, and the system does not perform the job.
ready	The job is ready, and the system performs the job at the set time.
executing	The system is running the job.
OK	The system has completed the archiving/deletion process.

Job execution

To see the status of the previous job execution, see the icons in the **Previous Execution** column.

The following table contains the description of the execution columns:

Color	Description
Green	Previous execution OK
Red	System error
Red	Parameter error

If the system cannot process an archiving or delete job, the system passes the information to the scheduler with an error code. The UMR Administrator displays a technical error message in English. The message is the partially forwarded original message of the faulty component.

If an archiving or delete job fails, the system does not repeat the job. Instead, the system waits for the next periodic job.

Best practices

Frequency of archiving

The intervals recommended for archiving your runtime database depend on factors such as:

- The number of documents
- The size of the documents and database

The archiving process must start when the runtime database is 75% full.

Handling a full database

When the database is full, the system can no longer write documents to the database. You can observe the corresponding outputs in the TTrace console. If the database does not have enough space, the system issues an error message.

To configure an email alert for this situation, you can use the TTrace console for adding a trigger on the corresponding error output.

Watchdog

The Watchdog is an operating system service that starts, stops, and monitors the applications.

One or more computers can perform the start, stop, and monitoring operations. This capability is called distribution.

The Watchdog also tracks: dependencies between programs and sequences of programs, network issues, and computer malfunctions.

The Watchdog performs the following tasks:

- Starting programs in a defined sequence
- Monitoring the existence of processes and hosts
- Establishing the defined status and restarting programs when a process is lost
- Switching to an alternative scenario or restarting the system to the possible extent when a host is lost
- For distributed systems, recording the runtime of a ping to perform a simple performance analysis
- Executing macros

Note:

The Watchdog does not monitor the outputs of servers or programs. The Watchdog does not communicate with the processes. It only checks whether the started components exist as a process in the operating system.

TTraceConsole logging

Watchdog communicates using the TCP/IP protocol.

The outputs of the Watchdog process are logged in the TTraceConsole program. Additional outputs for installing or uninstalling the Watchdog are provided in the standard terminal output.

With the TTraceConsole program, you can send a command to the Watchdog, to protect existing core dumps from being overwritten when certain errors occur.

Configuration

You can configure the Watchdog functionality using the *WDConfig* tool.

System context

The correct functioning for Watchdog depends on the following factors:

- If Watchdog monitors applications that depend on other sub-components that are not monitored, Watchdog functions correctly only if each of the sub-components is functional.
- If Watchdog is installed on more than one computer, you must ensure that the Watchdog configuration is the same on every computer.
- The Watchdog process starts with Administrator privileges on the operating system. Only the system environment variables are available to Watchdog and to the applications started by Watchdog.

WDConfig tool

To configure Watchdog, you must set the necessary parameters in the configuration file. To facilitate this task and avoid errors, use the WDConfig tool to create and modify the configuration file.

Warning:

Do not edit the copy of the configuration file that is currently being used by the Watchdog application. If you distribute this configuration file, then the correct functioning of the Watchdog application is no longer guaranteed.

If you start the Watchdog application without a configuration file, Watchdog runs in standby mode until you distribute a configuration file.

With the WDConfig tool, you can:

- Configure general settings for the Watchdog application
- Configure scenarios
- Configure macros
- Import parts of another configuration file
- Distribute the configuration file

Watchdog configuration

Setting	Default value	Description
Port	10001	The IP port that Watchdog uses to communicate with other computers that run Watchdog in a distribution. You must provide the port number in decimal format. The WDConfig tool also uses this port.

Table continues…

Setting	Default value	Description
AliveInterval	5	The interval, in seconds, that Watchdog uses to verify if the connections to other Watchdog applications are still active.
AliveTimeout	20	The interval, in seconds, after which the connection between two Watchdog applications is considered interrupted. AliveTeimeout must be a multiple of AliveInterval. The recommended factor is 4.
BootTimeout	60	The interval, in seconds, that Watchdog applications in a distributions have to connect to each other. If this value is exceeded, the system switches to a different scenario for the Watchdog applications that are not connected. If a Watchdog application is added at a later time, the application is integrated with the processes and added to the system. When you set this value, you must take into account factors such as the distance between the computers and the duration of the system startup phase.
WatchInterval	15	The interval, in seconds, that Watchdog uses to verify if all the programs started by the application are still running.
DefaultDelay	15	The time interval, in seconds, to pass after a successful program start, before the next program is started. This setting is needed because some interdependent programs need time to initialize before they can provide dependent programs with the necessary services. **Important:** Select this value depending on computer performance.
SwitchDelay	30	The time interval, in seconds, before the alternative scenario becomes available.
Server	localhost	The **Server** field must contain all the computers that run the Watchdog application, with one computer name on every consecutive line. Restrictions: • The computer name is case sensitive.

Table continues…

Setting	Default value	Description
		• The computer name must be short, without appended domain information. For example: `ccserver` instead of `ccserver.domain.com`. • For your computer, use the name provided by the host name program. • For a standalone system, you can use localhost. • If more network adapters are installed, the system uses the computer names associated with the faster network connections. • This setting is updated automatically when a scenario is maintained.

Scenarios

A scenario describes the actions that a distributed system can take.

Run level configuration

Setting	Description
As level	Indicates the run level. The WDConfig tool sets the run level automatically. To change the level of a run, click the **Up** and **Down** arrows.
Name	The name of the run level (optional).
Containing runs depends on each other	Indicates that the runs on the current level are interdependent. Clear this check box if you want the runs to be independent. Independent runs continue when one process on a run level is terminated and the subsequent run levels are ended.
Optional	Indicates that the application can be skipped if the run level does not start.
Termination	Indicates which run levels are terminated. You can select one or more run levels, separated by commas.

Run configuration

A run is a process or an application that Watchdog must start.

A selected run is marked in the WDConfig tool with a gray border.

Setting	Description
Symbolic name of run	Indicates the symbolic name of the run.
Run installed service	Indicates whether the application runs as a service. When this check box is clear, the application runs as a common executable program.

Table continues…

Setting	Description
Start executable	Indicates the executable program. **Note:** Use **Start executable** if the application runs as an executable and **Start service** if the application runs as a service.
Start service	Indicates the service. **Note:** You must enter the name of the service, not the display name.
Located at directory	Indicates the directory that contains the program.
Program arguments	Indicates the startup parameters for the program. You can use variables.
Working directory	Indicates a working directory.
Start on host	Indicates the host name.
Delay until next start	Indicates the delay, in seconds, until the start of the next process. If you do not specify this setting, the DefaultDelay setting is used.
Stop timeout	Indicates the time in seconds after which as program is ended. A default setting of 30 seconds is used.
Process priority	Indicates the priority of a process.
Window size	Indicates the format of the window.
Text color	Indicates the text color.
Background color	Indicates the background color.
No TTrace display	Indicates whether the process appears in the TTraceDisplay application. When this check box is selected, the process does not appear in TTraceDisplay. This setting can be useful for auxiliary tools.

Macros

With a macro, you can configure a succession of steps for Watchdog to perform.

For example: You can use a macro to end the processes in a specific order for a complete computer shut down.

Macro configuration

Setting	Description
Name	The name of the macro.
Temporarily disabled	The setting to enable or disable a macro. If this check box is selected, the macro is temporarily disabled.
Version	The macro version. You cannot set the macro version to 100.
Comment	The field for entering comments.

Table continues…

Setting	Description
Precondition	The precondition to fulfill for the macro can run.
Steps	The steps to perform with the macro.

Precondition

Use the Runs command to determine whether the Watchdog application performing the check is executing or monitoring the specified run.

The following table describes the usage of the Runs command:

Setting	Description
Runs(%PARAM%)	Specifies a run. The name of the run is indicated with user-specific symbols.
Runs(<Name>)	Specifies a run. You must enter a name for the run.
Runs(<Level>, <Run>)	Specifies a run. You must enter the level and the run.

Steps

You can add, copy, edit, and delete steps in the macro. You can specify the order of step in the macro using **Up** and **Down**.

PauseWatching

The PauseWatching step pauses the functions of the Watchdog application for a defined period.

The functions resume after the configured period expires.

Setting	Description
Duration	The duration of the time period.

ContinueWatching

The ContinueWatching step deactivates a pause of the PauseWatching step. No settings are required.

SetRegistryString

The SetRegistryString step writes a specified string to a specific key in the Windows registry.

Setting	Description
Key	Displays the registry key. You can select a registry key.
Subkey	Displays the subkey. You can select a symbol with %..%
Valuename	Displays the key name. You can select a symbol with %..%
Value	Displays the value. You can select a symbol with %..%

StoreRegistryString

The StoreRegistryString copies a specified string from the Windows registry to the internal storage of the macro.

Each macro has a corresponding storage. If a macro is called by another macro, this macro can also access the storage of the calling macro.

You can use this function to move information from one macro to another macro.

The settings for the StoreRegistryString step are the same as for SetRegistryString.

Execute

The Execute step executes a specified command on the local computer.

Setting	Description
CmdLine	Displays a command to execute on the local computer. You can select a symbol with %..%

CallMacro

The CallMacro step calls another macro. You can use this step to create subroutines.

Note:

The local storage of the macro is also used by the subroutine.

To test the macro, you can use the TTrace application to send a command with the name of the macro to the Watchdog application.

Setting	Description
Name of the macro	Specifies the name of the macro. You can select a symbol with %..%
Parameter	Specifies the parameters of the macro. You can select a symbol with %..% Multiple parameters are separated by a comma (,).

AddToStorage

The AddToStorage step saves the value in the storage.

Setting	Description
Storage	Indicates the storage location.
Value	Displays a value. You can select a symbol with %..%

Symbol insertion

You can insert symbols in the steps.

A run can be named explicitly with a two-digit index or using a symbolic name.

The following settings are possible:

Setting	Description
%PARAM%	Displays the value from the parameter field of the command from TTraceConsole.
%DIR(<Level>, <Run>)% %DIR(<Name>)%	Displays the contents of the *Located at* directory field from the configuration of a run.
%PID(<Level>, <Run>)% %PID(<Name>)%	Displays the current process ID of the operating system for the run.
%STORAGE(<Name>)%	Specifies the contents of the storage.

Best practices

OmniORB naming service

With OmniORB naming service, you must make sure that the path containing the log files for OmniORB naming service is enclosed in additional quotation marks.

For example:

```
<Runlevel No=1>
<Run Dir="F:\programs\omniORB" Exe="omniNames.exe" Args="-logdir \"F:\programs\
omniORB\"" Host="localhost" Delay=10
</Runlevel>
```

TTrace

TTrace stands for Avaya Trace System.

TTrace organizes the outputs of processes to avoid displaying multiple command prompt windows for every output.

The outputs are separated according to the originator and are stored in a file system. Because the file system on a server is a critical resource, you can file the outputs on a remote computer.

You can view the outputs using an application. Access to the files containing the records is not restricted in any way.

Attributes of TTrace

- Central generation and administration of log files
- Online evaluation of log contents with the option of responding automatically to certain contents: escalation
- Easy to turn categories on and off
- Short explanation of the categories
- Low network load because of the compact protocol
- Capability to send simple commands to the TTrace clients
- Categories managed in the component: Library, Executable

- Ability to debug
- Flexible and ability to use TTrace without predefined instrumentation macros

TTrace components

Table 11: TTrace components

The following table lists the TTrace components and their functions:

Component	Function
TTrace server	The TTrace server is the central component of TTrace. The TTrace server receives the outputs of the processes through a socket connection and saves them to the file system. The TTrace server executes the rules for automatic output analysis.
TtraceConfig	The TTraceConfig (tt_config.exe) application creates and modifies the TTrace configuration file.
TTraceConsole	You can view the working processes online using the TTraceConsole (tt_console.exe). You can also use TTraceConsole to turn categories on and off for each component, to send commands to the various processes, and to query the version information.
Log files	The TTrace server generates a corresponding log file for every process. The TTrace server generates an extra service log file for each process.
TTrace configuration file	The TTrace configuration file contains the settings for the TTrace server. You can change the settings using the TTraceConfig application.

TTrace console configuration

Selecting a TTrace server

You can select a different TTrace server at any time. The TTrace server makes available the information for the **TTraceConsole** application.

An application can only be linked with one TTrace server. However, multiple instances of the application can be started.

You can also specify the host name of the TTrace server as a startup parameter in a linkage.

Settings for connecting to a TTrace server

Name	Description
Host	Specifies the host name of the TTrace server to be connected.
Name	Identifies a connection with a name.

Table continues…

Name	Description
Port	Specifies the port number of the TTrace server to be connected.
No automatic opening of process window	Indicates whether a window is opened automatically for the process.
List	Shows the connections. Use Remove to remove an entry from the list.

Structure of the TTraceConsole application

You can view current outputs with the TTraceConsole application, tt_console.exe. You can also use TTraceConsole to turn categories on and off, and to send specific commands to processes.

TTraceConsole icon

You can see the following TTraceConsole icon in Windows Explorer and in the TTraceConsole title bar:

Menus

The following menus are accessible in the **TTraceConsole** application:

- File
- Extra
- View
- Window
- Help

The following table describes key TTrace menu functionality. This table does not list every menu command.

Function	Description
File menu	
Other Server	Enables you to enter the host name for a different TTrace server and see data for that server.
Extra menu	
Starting Maintenance and **Finished Maintenance**	Enables you to start or end maintenance on the system. When you start maintenance, you can set the expected duration of maintenance work. The system does not send messages during the set time. After the set time has elapsed, the system automatically reactivates the logscan.
Global Separator buttons	Enables you to insert standard or advanced separators in process outputs.
Settings	Specifies a folder for local log files.
View menu	

Table continues…

Function	Description
All	Shows and hides the toolbar, status bar, or Service window.
Window menu	
Arrangement buttons: • **Cascade** • **Title** • **Arrange Icons**	Arranges processed outputs to prevent overlap, by title, or by minimized icons.
Disconnected process buttons: • **Close all disconnected** • **Reuse window on connect**	Enables you to close disconnected process outputs. When the process reconnects to the server, you can turn on **Reuse window on connect** to reuse the same process window.
Small Font	Sets the font size for the process outputs. To apply the change, you must close the process outputs and reopen them.
Display buttons: • **Hide name switchable categories** • **Process name / Host name / Process ID**	Shows and hides categories and processes. With the **Process name / Host name / Process ID**, you can display up to eight processes at a time.

Processes

The TTraceConsole can display processes in color, which assists in structuring a specific installation.

The following table describes the process information displayed in the TTraceConsole application:

Information	Description
Process name	Shows the process names.
Application ID	Shows the application-id. The application-id assigns a service-related message in the service-window to the process.
Host name	Shows the host name of the computer where the process is working.
Process ID	Shows the process identification number.

Categories

The **TTraceConsole** application shows the categories in the lower left side of the application window.

You can use categories to determine which messages are displayed process outputs and which are not. A category can be used for error messages, warnings, and messages about interface functions and other messages.

A process makes general categories available and might make object categories available. Make sure that the categories and all the information (outputs) for the process are being made available. If a process is not running, the **TTraceConsole** application does not receive any information.

The following table describes the categories that are available for all the processes:

Name	Description
TC_General	Shows general messages. You cannot disable this category.
TC_Warning	Shows warnings. You cannot disable this category.
TC_Error	Shows error messages. You cannot disable this category.
TC_LicenseWarning	Shows license warnings. You cannot disable this category.
TC_LicenseError	Shows license errors. You cannot disable this category.

Information

The Categories area displays the following information:

Information	Description
Category name	Shows the category name and whether the category is enabled or disabled. When the check box is clear, the category is disabled. The corresponding process output shows no information for this category. When the check box is selected, the category is enabled. The corresponding process output shows information for this category.

Tabs

The following table describes the tabs used for organizing the categories:

Name	Description
Std	Shows the general categories in alphabetical order. Some processes only have general categories.
Cat per Obj	If categories for objects are possible, they can be arranged by objects such as PBX system or by category. The object categories are arranged by objects such as PBX system in the display.
Obj per cat	The object categories are arranged by category in the display.

Enabling and disabling categories

A process has general categories and can have object categories. The categories are not displayed when you activate the service view for the TTrace console. An object category is always linked to the corresponding general category. The general categories are available in the default view. When you enable a general category, the corresponding object categories are enabled.

When you enable or disable a category and a process does not react accordingly, a grey field appears before the category.

Process outputs

The title bar of a process output shows the process name, the host name, and the process ID. If needed, you can delete the contents of the process outputs. A process output shows a history from the log file of around 300 lines or 32 KB.

Output view

The process output shows the time, category, and other command information. The system writes the outputs consecutively. The newest outputs appear at the bottom of the display.

Process output without history

You can also open the process output without a history. You can use this function when the transmission rate is low.

Functions of a process output

A process output provides the following functions. A process output has two function levels. The process output functions are inactive when you enable the service view for TTraceConsole.

- **Command**: Specify a command.
- Specify a parameter for the command.
- Open the command dialog box.
- **Send**: Send the selected command with the specified parameters. The Enter key provides the same function.
- **Sep**: Add a flag to the output to identify a particular section.
- **V**: Show version information in the process output.
- **Info**: Display the categories and available commands.
- **Trace**: Change back to displaying the outputs after using the Info function.
- **2**: Change to function level 2.
- **X**: Deactivate the selections in the process output. The Escape key provides the same function.

Other actions that you can perform on process outputs include:

- Editing entries
- Searching for a term
- Deleting a process output
- Changing the font size

Best practices

Maintenance

To prevent messages being generated unnecessarily during maintenance work in IP Office Contact Center, you can interrupt the logscan. You can set a duration for the maintenance work. The logscan is reactivated automatically after that.

After the set duration of maintenance has elapsed, the logscans activate automatically and messages are sent again.

TTraceDisplay application

To obtain a quick overview of the process statuses, you can use the TTraceDisplay application. This application gives you quick and clear information on processes working locally and even those working on other PCs. A green or red LED indicates the state of a process.

To use the TTraceDisplay application, you must use the Watchdog application.

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.
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.
ISDN	Integrated Services for Digital Network.
module	An IP Office Contact Center component or application. The components for the Agent, Supervision, and Administration tabs in the IP Office Contact Centerinterface are examples of modules. The Wallboard application is also referred to as a module.
Open Database Connectivity (ODBC)	Database driver that provides programmers and implementation engineers with the possibility to use any database server. With ODBC, you can integrate data from any application into a database system. Modern programming environments use ODBC to enable uncomplicated access to

	a wide range of database management systems using ready-made data-sensitive control elements.
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.
Public Switched Telephone Network (PSTN)	A telephone network that includes many communication technologies such as microwave transmission, satellites, and undersea cables.
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.

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