



Avaya Interaction Center
Release 6.1.3
Installation and Configuration

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Preventing toll fraud

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

Avaya fraud intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, call Technical Service Center Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. For additional support telephone numbers, see the Avaya Web site:

<http://www.avaya.com>

Select **Support**, then select **Escalation Lists**. This Web site includes telephone numbers for escalation within the United States. For escalation telephone numbers outside the United States, select **Global Escalation List**.

Providing telecommunications security

Telecommunications security (of voice, data, and video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or person working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Use (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischievous (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including, but not limited to, human and data privacy, intellectual property, material assets, financial resources, labor costs, and legal costs).

Your responsibility for your company's telecommunications security

The final responsibility for securing both this system and its networked equipment rests with you, an Avaya customer's system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources, including, but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

Warranty

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Avaya support

Avaya provides a telephone number for you to use to report problems or to ask questions about your contact center. The support telephone number is 1-800-242-2121 in the United States. For additional support telephone numbers, see the Avaya Web site:

<http://www.avaya.com>

Select **Support**, then select **Escalation Lists**. This Web site includes telephone numbers for escalation within the United States. For escalation telephone numbers outside the United States, select **Global Escalation List**.

Comments

To comment on this document, send e-mail to crminfodev@avaya.com.

Acknowledgment

This document was written by the CRM Information Development group.

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Release 6.1.3
Installation and Configuration**

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Before you begin

This section includes the following topics:

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- [Contacting Technical Support](#) on page 16.
- [Product documentation](#) on page 17.
- [Educational services](#) on page 19.

Typographical conventions

This guide uses the following font conventions:

Font Type	Meaning
<code>command</code>	This font signifies commands, information that you type into the computer, or information contained in a file on your computer.
<i>commandvariable</i>	This font indicates variables in a command string.
<i>italics</i>	This font is used to add emphasis to important words and for references to other chapter names and manual titles.
link	Blue underlined text in online documents indicates a hypertext jump to related information. To view the related material, click the blue underlined text.

Notes, tips, and cautions

Note:

A note calls attention to important information.

 **Important:**

An important note calls attention to a situation that has the potential to cause serious inconvenience or other similar repercussions.

Tip:

A tip offers additional how-to advice.

 **CAUTION:**

A caution points out actions that may lead to data loss or other serious problems.

Contacting Technical Support

If you are having trouble using Avaya software, you should:

1. Retry the action. Carefully follow the instructions in written or online documentation.
2. Check the documentation that came with your hardware for maintenance or hardware-related issues.
3. Note the sequence of events that led to the problem and the exact messages displayed. Have the Avaya documentation available.
4. If you continue to have a problem, contact Avaya Technical Support by:
 - Logging in to the Avaya Technical Support Web site <http://www.avaya.com/support>
 - Calling or faxing one of the following numbers from 8:30 a.m. to 8:30 p.m. (Eastern Standard Time), Monday through Friday (excluding holidays):
 - Toll free in the U.S. and Canada: 1-888-TECH-SPT (1-888-832-4778)
 - Direct line for international and domestic calls: 1-512-425-2201
 - Direct line for faxes: 1-512-997-4330

- Sending email with your question or problem to crmsupport@avaya.com. You may be asked to email one or more files to Technical Support for analysis of your application and its environment.

Note:

If you have difficulty reaching Avaya Technical Support through the above URL or email address, please go to <http://www.avaya.com> for further information.

Product documentation

Most Avaya product documentation is available in both printed and online form. However, some reference material is available only online, and certain information is available only in printed form. A PDF document with detailed information about all of the documentation for the Avaya Interaction Center is included in the `Doc` directory on the product CD-ROM. This PDF document is also included on the separate documentation CD-ROM.

Readme file

The Readme file is a PDF file included on the Avaya Interaction Center software CD-ROM. This file contains important information that was collected too late for inclusion in the printed documentation. The Readme file can include installation instructions, system requirements, information on new product features and enhancements, suggested work-arounds to known problems, and other information critical to successfully installing and using your Avaya software. Avaya may also deliver an Addendum to the Readme, which will be posted on the Avaya Technical Support Website. The Readme Addendum will contain similar information uncovered after the manufacture of the product CD-ROM. Review the Readme file and the Readme Addendum before you install your new Avaya software.

Electronic documentation

The electronic documentation (in PDF or HTML format) for each Avaya Interaction Center product is installed automatically with the program. Electronic documentation for the entire Avaya product suite is included on the product CD-ROM and the documentation CD-ROM.

You can also view the documentation set online at <http://www.avayadocs.com>.

Printed documentation

You can purchase printed copies of these manuals separately. For details, see [Ordering information: Avaya Publications Center](#) on the back of this manual's title page.

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Before you begin



Chapter 1: Introduction

Use the following information and procedures to install and configure an out-of-the-box Avaya IC system. If your Avaya IC system includes some customizations, install a development system first. You must test your customizations on the development system before you deploy your production system.

This section describes useful information that you should know before you install and configure an Avaya IC system. This section includes the following topics:

- [Avaya IC installation files](#) on page 22.
- [Installing Avaya IC with other system components](#) on page 23.
- [Customizing Avaya IC](#) on page 24.
- [Port assignments](#) on page 26.
- [Ephemeral ports](#) on page 38.

Avaya IC installation files

Avaya™ Interaction Center (Avaya IC) provides the installation files on the CD-ROMs described in the following table. With these CD-ROMs, you can install all of the components in an Avaya IC system.

CD-ROM	Contents
Avaya IC CD-ROM 1	Contains the following files: <ul style="list-style-type: none"> ● Installer files for servers on Windows ● Installer files for Design & Administration Tools ● Installer files for the Agent Site Preparation wizard ● Documentation ● Connectors for supported IVRs ● Server SDK
Avaya IC CD-ROM 2	Contains the following files: <ul style="list-style-type: none"> ● Installer files for servers on Solaris and AIX ● Connectors for supported IVRs ● Server SDK
Avaya IC CD-ROM 3 Business Advocate for Avaya IC	Contains files required to install Business Advocate components.
Avaya IC CD-ROM 4 Avaya IC for Siebel 7	Contains files and documentation required to integrate Avaya IC with Siebel 7.
Avaya Full Text Search Engine 1.0 CD-ROM	Contains files required to install and configure the Avaya Full Text Search Engine.
Avaya IC Documentation CD-ROM	Contains the complete set of documentation for Avaya IC with a search function that lets you search across the entire set.

Installing Avaya IC with other system components

Avaya IC requires the following Avaya components that you install Avaya OA and Avaya FTSE from separate CD-ROMs:

- Avaya Operational Analyst (Avaya OA)
- Avaya Full Text Search Engine (Avaya FTSE)

Both Avaya IC and Avaya OA require access to the IC Repository database.

You must consider the requirements of Avaya OA when you plan, install, and configure your Avaya IC system.

This section describes the correct order to install and configure Avaya IC with Avaya OA and Avaya FTSE. This section includes the following topics:

- [Installation order](#) on page 23.
- [Database properties](#) on page 24.

 **CAUTION:**

For an Avaya IC deployment that includes Avaya IC and Avaya OA components on the same machine, to avoid potential port conflicts, always start the Avaya IC components first, then start the Avaya OA components.

Installation order

The installation and configuration of Avaya Full Text Search Engine (Avaya FTSE) is part of the configuration of Avaya IC. You must follow the correct installation order to ensure that IC Repository is correctly configured and that the Avaya IC system functions correctly.

Install and configure the components of Avaya IC, Avaya OA, and Avaya Full Text Search Engine (FTSE) in the following order:

1. Install and configure all prerequisites in the following documentation, including the installation of your database software and the creation of your database instance:
 - a. For Avaya IC, see *IC Installation Planning and Prerequisites*.
 - b. For Avaya OA, see *Operational Analyst Installation Planning and Prerequisites*.
2. Install the Avaya IC servers and create the primary server environment, as described in [Installing Avaya IC servers](#) on page 49 and [Creating the primary server environment](#) on page 58.
3. Install the Design & Administration Tools, as described in [Setting up Design & Administration Tools](#) on page 62.

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4. Install Avaya FTSE, as described in *Avaya Full Text Search Engine Installation and Configuration*.
5. Configure Avaya IC, as described in this manual.
6. Configure Avaya FTSE, as described in *Avaya Full Text Search Engine Installation and Configuration*.
7. Install and configure Avaya OA for Avaya IC, as described in *Operational Analyst Installation and Configuration*.

Database properties

Both Avaya IC and Avaya OA use the values shown in the following table for their database properties.

Property	DB2	Oracle	SQL Server
Database Administration Login	db2inst1	sys	sa level user name
Database Administration Password	db2inst1 password	sys password	sa level password
IC Repository database name See Configuring the IC Repository database connection on page 91.	Database name that you enter in Database Designer. For example, repository .	Database name for the Oracle user that you enter in Database Designer. For example, repository .	Database schema name that you enter in Database Designer. For example, repository .

Customizing Avaya IC

Use the information and procedures in this guide to install and configure an out-of-the-box Avaya IC system with little or no customization. If your Avaya IC system includes customization requirements, use this guide to install a development system. Use the development system to test and, if desired, customize your Avaya IC system.

For more information on how to customize Avaya IC components, see the other documentation in the Avaya IC documentation set. The introduction provided on the Avaya IC documentation CD-ROM includes a complete description of all documentation in the Avaya IC documentation set.

The following table describes some of the Avaya IC documentation that you can use to customize an Avaya IC system.

Avaya IC Component	Documents
Avaya Agent	<ul style="list-style-type: none"> ● <i>Avaya Agent Integration</i> ● <i>IC Administration Volume 2: Agents, Customers, & Queues</i>
Avaya Business Applications	<ul style="list-style-type: none"> ● <i>IC Database Designer User Guide</i> ● <i>IC Scripts Language Reference</i> ● <i>IC Scripts VBA Scripting Reference</i> ● <i>WebQ Reference</i>
Avaya IC databases and data models	<ul style="list-style-type: none"> ● <i>IC Database Designer User Guide</i> ● <i>Data Model Reference files</i>
Servers	<ul style="list-style-type: none"> ● <i>IC Administration Volume 1: Servers & Domains</i> ● <i>Agent Data Unit Server Programmer Guide</i> ● <i>Electronic Data Unit Server Programmer Guide</i> ● <i>IC Telephony Connectors Programmer Guide</i> ● <i>Core Services Programmer Guide</i> ● <i>IC Client and Server Programmer Design Guide</i> ● <i>Vox Server Programmer Guide</i>
Telephony	<ul style="list-style-type: none"> ● <i>IC Administration Volume 1: Servers & Domains</i> ● <i>IC Telephony Connectors Programmer Guide</i> ● <i>Vox Server Programmer Guide</i> ● <i>External Function Library for Avaya IVR Programmer Guide</i> ● <i>Telephony Services for Aspect CallCenter Migration Guide</i>
Workflows	<ul style="list-style-type: none"> ● <i>Avaya Workflow Designer User Guide</i> ● <i>Avaya IC Workflow API Reference</i> ● <i>Media Workflow Reference</i> ● <i>Agent Script Workflow Reference</i> ● <i>IC Scripts Language Reference</i> ● <i>IC Scripts VBA Scripting Reference</i>
Avaya Business Advocate	<ul style="list-style-type: none"> ● <i>IC Business Advocate Configuration and Administration</i> ● <i>Media Workflow Reference</i>
Avaya IC for Siebel 7	<ul style="list-style-type: none"> ● <i>Avaya IC for Siebel 7 Integration</i>

Port assignments

The Avaya IC servers require several ports to communicate with other Avaya IC servers and third-party servers and applications. Whenever possible, use the default ports and locations in the Avaya IC configuration to reduce potential conflict.

If an Avaya IC server uses a port that is already assigned to a network application or another server, either the server or the application may not function.

This section describes the guidelines for assigning ports and the default port assignments in Avaya IC and Avaya OA. This section includes the following topics:

- [Guidelines for assigning ports](#) on page 26.
- [Ports used by Avaya IC components](#) on page 28.
- [Ports used by Business Advocate components](#) on page 32.
- [Ports used by Avaya OA components](#) on page 33.
- [Ports used for Siebel Integration](#) on page 34.
- [Ports used for third party servers](#) on page 34.
- [Changing the default ICM service ports](#) on page 35.
- [Changing default service ports for servers](#) on page 36.



CAUTION:

To avoid potential port conflicts, for an Avaya IC deployment that includes Avaya IC and Avaya OA components on the same machine, always start the Avaya IC components first, then start the Avaya OA components.

Guidelines for assigning ports

This section includes the following topics:

- [Allowable values](#) on page 27.
- [Multiple server instances](#) on page 27.
- [Automatic settings for Avaya IC core servers](#) on page 27.
- [Primary and secondary Avaya IC servers](#) on page 27.
- [Port verification](#) on page 27.
- [Changing default port assignments](#) on page 28.

Allowable values

All ports must be numeric and in the range of 1024-65535.

Multiple server instances

Multiple instances of a server that run on the same machine require different port numbers for each instance.

Automatic settings for Avaya IC core servers

Port numbers for the Avaya IC core servers are sequential. Avaya IC assigns port numbers to all core servers according to the port assigned to the ORB server. For example, Avaya IC automatically assigns the ports in the following table to the servers that are added when you configure the primary server environment. When you configure the other servers, IC Manager assigns port numbers sequentially, starting with 9005.

Server	Default Port
ORB server	9001
Directory server	9002
Alarm server	9003
License server	9004

Primary and secondary Avaya IC servers

If you install primary and secondary servers, use the default port number of 9001 for the primary port. You can use the same number for the secondary servers on another machine. If you select a different port, Avaya IC assigns ports sequentially from that port number.

Port verification

Avaya IC servers use TCP/IP ports for communication with the other Avaya IC servers. These ports start at 9001 and increment from there. Before you install these servers, verify with your network administrator that no other network applications use the same ports.

Review the current port numbers in IC Manager to verify that there are no conflicts when you assign ports.

Changing default port assignments

You can change the default port numbers:

- When you configure Avaya IC servers
- In IC Manager

For more information, see [Configuring core servers](#) on page 113 or *IC Administration Volume 1: Servers & Domains*.

Avaya OA does use some other ports. However, the CORBA third party product (ORBacus) does not allow you to specify a range for those ports. ORBacus dynamically gets whatever port the operating system provides. You can tell the operating system what range of port it can assign to applications. For more information, see [Ephemeral ports](#) on page 38.

Ports used by Avaya IC components

The following table contains default port assignments for the Avaya IC servers and some third-party servers. To make sure that you assign unique ports to each server, write your port assignments in the empty cells of the Assigned Port column.

 **CAUTION:**

By default, Solaris runs the HTTP Input Method Server (`htt_server`) on port 9010. On non-English Solaris machines, this port assignment creates a conflict with any Avaya IC server that you configure to run on port 9010. To avoid the conflict, you can update `htt_server` to use a different port, or not assign an Avaya IC server to port 9010. In a typical installation, with the primary ORB server on port 9001, IC Manager automatically assigns port 9010 to the Report server.

Server	Default port	Assigned Port	Notes
ORB server	9001		Default port assignment.
Directory server	9002		Sequential from ORB server.
Alarm server	9003		Sequential from Directory server.
License server	9004		Sequential from Alarm server
Blender server	Sequential		Sequential from the previous server created in IC Manager.
Workflow server	Sequential		Sequential from the previous server created in IC Manager.

Server	Default port	Assigned Port	Notes
ADU server	Sequential		Sequential from the previous server created in IC Manager.
Data server	Sequential		Connects to the following ports: <ul style="list-style-type: none"> ● Oracle database on 1521 ● SQL Server database on 1433 ● DB2 database on 50000 For DB2, this port is the default for the first DB2 instance that is created. Additional instances use a different port Sequential from the previous server created in IC Manager.
EDU server	Sequential		Sequential from the previous server created in IC Manager.
Report server	Sequential		Sequential from the previous server created in IC Manager.
HTTP Connector server	Sequential		Connects to HTTP protocol on port 80. Sequential from the previous server created in IC Manager.
Notification server	Sequential		Sequential from the previous server created in IC Manager.
WebACD server	Sequential		Sequential from the previous server created in IC Manager.
ComHub server	Sequential		Sequential from the previous server created in IC Manager.
Paging server	Sequential		Sequential from the previous server created in IC Manager.
Attribute server	Sequential		Sequential from the previous server created in IC Manager.
IC Email server	Sequential		Connects to the following ports: <ul style="list-style-type: none"> ● POP3 server on 110 ● SMTP server on 25 Sequential from the previous server created in IC Manager.
DUStore server	Sequential		Sequential from the previous server created in IC Manager.

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Server	Default port	Assigned Port	Notes
Telephony server	Sequential		Sequential from the previous server created in IC Manager. Note: Some switch interfaces require additional ports. For more information, see the documentation for your switch.
TS Queue Statistics server	Sequential		Sequential from the previous server created in IC Manager.
VOX server	Sequential		Connects to the IVR through default port 3000. You can change this port assignment in the IVR. Sequential from the previous server created in IC Manager.
Dialing Kernel server	Sequential		Sequential from the previous server created in IC Manager.
Softdialer server	Sequential		Sequential from the previous server created in IC Manager.
Content Analyzer Administration server	Sequential		Sequential from the previous server created in IC Manager.
Content Analyzer Operation server	Sequential		Sequential from the previous server created in IC Manager.
WebACD server - Service port (Legacy services)	4010		If you must change this port, see Changing the service port for the WebACD server on page 36.
ComHub server - Service port (Legacy services)	4001		If you must change this port, see Changing the service port for the ComHub server on page 36.
Paging server - Service port (Legacy services)	4200		If you must change this port, see Changing the service port for the Paging server on page 37.
Attribute server - Service port (Legacy services)	2300		If you must change this port, see Changing the service port for the Attribute server on page 37.
HTTP Connector server - HTTP request port	9170		Can change default if required.
WebQ	9180		Can change default if required.
WebQ Router	9190		Can change default if required.
Ports reserved for ICM and CIRS	9500 to 9520		See cells below for details.

Server	Default port	Assigned Port	Notes
Internet Call Manager service - ICM agent	9501		Change this port in the ICM Directory server table through Configuration tab of IC Manager.
Internet Call Manager service - ICM caller	9502		Change this port in the ICM Directory server table through Configuration tab of IC Manager.
Internet Call Manager service - ICM bridge in Attribute server port	9503		Change this port in the ICM Directory server table through Configuration tab of IC Manager.
Internet Call Manager service - ICM administration (Util port)	9504		Change this port in the ICM Directory server table through Configuration tab of IC Manager.
Internet Call Manager service - ICM tunnel	9505		If you must change this port, see Changing the ICM tunnel port on page 35.
CIRS service - CIRS servlet port	9506		If you must change this port, see Changing the CIRS servlet port on page 35.
CIRS service - CIRS administration (Util port)	9507		Change this port in the CIRS Directory server table through Configuration tab of IC Manager. This port is used to monitor the CIRS server.
CIRS service - CIRS caller	9508		Change this port in the CIRS Directory server table through Configuration tab of IC Manager.
VMM server - VOIP caller port	8120		Used for Voice Chat.
Dialing Kernel server - serverport	7800		Used for outbound voice contacts.
IC Email server - Email provider port	19113		Used by Web Agent to retrieve email contacts from the IC Email server.
IC Email server - HTTP port for administration interface	19114		Used by Email Template Administration to send changes to the IC Email server.

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Server	Default port	Assigned Port	Notes
Website, Email Template Administration, QKnowledge, Letter Generator, Agent Installer, and ICM tunneling	Http - 80 Https - 443		HTTP and HTTPS connections for web applications.
Tomcat servlet	9600		HTTP port. Change through the Configuration Tool. If you configure multiple Web applications on one machine, the Configuration Tool uses the following sequential ports: <ul style="list-style-type: none">● baseport+1 for Web License Manager● baseport+2 for Website● baseport+3 for Email Template Administration● baseport+4 for QKnowledge● baseport+5 for Letter Generator● baseport+6 for IC Test

Ports used by Business Advocate components

The following table lists the ports used for Business Advocate, plus additional information on how to control those ports:

Component	Default port	Assigned port	Notes
Business Advocate Resource Manager server	Sequential		Sequential from the previous server created in IC Manager.
Business Advocate Telephony Services Adaptor server	Sequential		Sequential from the previous server created in IC Manager.
Web Advocate Adaptor server	Sequential		Sequential from the previous server created in IC Manager.
Advocate Services	1521		Use by connection to Oracle database.

Component	Default port	Assigned port	Notes
DCOM	5000 to 5050		Business Advocate servers that use DCOM, limit to 5000-5050. See Microsoft Knowledge Base article 154596 and the article entitled "Using Distributed COM with Firewalls" by Michael Nelson
Active Directory and MSMQ	per Windows configuration		See Microsoft Knowledge Base article 179442.
Windows network share to primary Resource Manager server.	per Windows configuration		See Microsoft Knowledge Base article 179442.

Ports used by Avaya OA components

The following table lists the default ports used by Avaya OA components. For information about ports used by the Event Collector server and the Event Collector bridge, see [Ports used by Avaya IC components](#) on page 28.

Component	Default port	Assigned port	Notes
Avaya OA Event Collector server	Sequential		Sequential from the previous server created in IC Manager.
Orbacus	10000		Orbacus naming service
OA services	1521		Used by connection to Oracle database.
OA services	1433		Used by connection to Microsoft SQL Server database.
OA services	50000		Used by connection to IBM DB2 database. This listen port is the default for the first DB2 instance that is created. Any additional instances will use a different port

Ports used for Siebel Integration

The following table lists the ports used for Siebel integration servers and components, plus additional information on how to control those ports:

Component	Default port	Assigned port	Notes
Siebel AED server	Sequential		Sequential from the previous server created in IC Manager.
Siebel AICD server	Sequential		Sequential from the previous server created in IC Manager.
Siebel EAI server	Sequential		Communicates with Siebel on HTTP port 80. You can configure this port by setting <code>hostname:port</code> on the Configuration tab of the server. Sequential from the previous server created in IC Manager.

Ports used for third party servers

Avaya IC and Avaya OA also use third party servers which are accessed through TCP/IP. These third party servers include, but are not limited, to those listed in the following table.

Default Port	Protocol or Component	Avaya IC Components
25	SMTP	IC Email server and Web Management website
110	POP	IC Email server and POP3 email servers
1433	SQL Server database	Data server, Web Management website, and ICM connection for SQL Server installation
1521	Oracle database	Data server, Web Management website, and ICM connection for Oracle installation
50000	DB2 database	Data server, Web Management website, and ICM connection for DB2 installation

Changing the default ICM service ports

You can change some ICM service ports as described in the following topics:

- [Changing the ICM tunnel port](#) on page 35
- [Changing the CIRS servlet port](#) on page 35

Changing the ICM tunnel port

To change the ICM tunnel port:

1. On the machine that hosts the ICM server, open the following file in a text editor:
`IC_INSTALL_DIR\IC61\comp\website\WEB-INF\web.xml`
2. In the section for the Tunnel servlet, add a new parameter with the value in the following table:

Parameter	Value
port	new port number

3. Save the web.xml file.
4. Restart the Website.

Changing the CIRS servlet port

To change the CIRS servlet port:

1. On the primary machine that hosts the ICM server and the Website, open the following file in a text editor: `IC_INSTALL_DIR\IC61\comp\website\WEB-INF\web.xml`
2. In the section for the CIRS servlet, add a new parameter with the value in the following table:

Parameter	Value
port	new port number

3. Save the web.xml file.
4. Restart the Website.

Changing default service ports for servers

You can change the default service ports, if required, as shown in the following topics:

- [Changing the service port for the WebACD server](#) on page 36
- [Changing the service port for the ComHub server](#) on page 36
- [Changing the service port for the Paging server](#) on page 37
- [Changing the service port for the Attribute server](#) on page 37

Changing the service port for the WebACD server

For more information about the WebACD server, see [Creating the WebACD server](#) on page 249.

To change the service port for the WebACD server:

1. In IC Manager, update the WebACD server configuration:
 - a. Double-click the WebACD server in the list of servers.
 - b. Select the **WACD** tab.
 - c. Change the port number in the **Service Port** field.
2. In Notepad or another text editor, open the Webadmin.cfg file, and change the service port property to the new port number.

Changing the service port for the ComHub server

For more information about the ComHub server, see [Creating the ComHub server](#) on page 254.

To change the service port for the ComHub server:

1. In IC Manager, update the ComHub server configuration:
 - a. Double-click the ComHub server in the list of servers.
 - b. Select the **ComHub** tab.
 - c. Change the port number in the **Service Port** field.
2. In IC Manager, update the masterserverport property of the WebACD server:
 - a. Double-click the WebACD server in the list of servers.
 - b. Select the **WACD** tab.
 - c. Change the value of the **Comhub Port** field to the new port.

3. In IC Manager, update the Paging server configuration:
 - a. Double-click the Paging server in the list of servers.
 - b. Select the **Paging** tab.
 - c. Right-click on an empty area in the tab and select the **Show Advanced Properties** box.
 - d. Change the value of the **Comhub Port** field to the new port.

Changing the service port for the Paging server

For more information about the Paging server, see [Creating the Paging server](#) on page 255.

To change the service port for the Paging server:

1. In IC Manager, update the Paging server configuration:
 - a. Double-click the Paging server in the list of servers.
 - b. Select the **Paging** tab.
 - c. Change the port number in the **Service Port** field.
2. In IC Manager, update the port value for the Agent/Desktop/WAC property for each agent. You can change the global value for all agents through the Group Manager, or change the value for each agent. For more information, see:
 - [Setting global properties for all agents](#) on page 389.
 - [Setting properties for individual agents](#) on page 389.

Changing the service port for the Attribute server

For more information about the Attribute server, see [Creating the Attribute server](#) on page 252.

To change the service port for the Attribute server:

1. In IC Manager, update the Attribute server configuration:
 - a. Double-click the Attribute server in the list of servers.
 - b. Select the **Attribute** tab.
 - c. Change the port number in the **Port** field.
2. In Notepad or another text editor, open the datawake.cfg file, and change the service port property to the new port number.

Ephemeral ports

A TCP/IPv4 connection consists of two endpoints, and each endpoint consists of an IP address and a port number. When a client user connects to a server computer, an established connection can be thought of as the combination of server IP, server port, client IP, client port. Usually, three of the four are readily known: the client machine uses its own IP address, and when connecting to a remote service, the server machine's IP address and service port number are required.

What is not immediately evident is that when a connection is established, the client side of the connection uses a port number. Unless a client program explicitly requests a specific port number, the port number used is an ephemeral port number. Ephemeral ports are temporary ports assigned by a machine's IP stack, and are assigned from a designated range of ports for this purpose. When the connection terminates, the ephemeral port is available for reuse, although most IP stacks won't reuse that port number until the entire pool of ephemeral ports have been used. So, if the client program reconnects, it will be assigned a different ephemeral port number for its side of the new connection.

This section includes the following topics:

- [Limits implied by the ephemeral port range](#) on page 38
- [Traditional configuration of the ephemeral port range](#) on page 39
- [Firewalling the ephemeral port range](#) on page 39
- [Changing the ephemeral port range](#) on page 39

Limits implied by the ephemeral port range

Another important ramification of the ephemeral port range is that it limits the maximum number of connections from one machine to a specific service on a remote machine. The TCP/IP protocol uses the connection's combination of server IP, server port, client IP, and client port to distinguish between connections, so if the ephemeral port range is only 4000 ports wide, that means that there can only be 4000 unique connections from a client machine to a remote service at one time.

A port range of 4000 may seem large, but it is actually small for current computing demands when you consider that a TCP connection must expire through the TIME_WAIT state before it is really completed. For example, even if both sides of a connection properly close their ends of the connection, due to TCP's error control, each side must wait until the TIME_WAIT state is expired before the connection's resources can really be disposed. The TIME_WAIT state is twice the maximum segment lifetime (MSL) which, depending on the IP stack, is usually configured to be 240 seconds total. That means that you could have only 4000 connections per 240 second window, and in practice this can be exhausted.

Traditional configuration of the ephemeral port range

The BSD Sockets TCP/IP stack used ports 1024 through 4999 as ephemeral ports. Additionally, ports 1 through 1023 were intended for systems services running as the superuser, so those ports are called reserved ports.

As discussed earlier, BSD's choice of the ephemeral port range is unfortunate because of its relatively small size (3975 ports) and its low numbered position. Many feel that the default range should be 49152 through 65535, which is both much larger (16383 ports) and is at the very top of the full port range.

Firewalling the ephemeral port range

For firewalls, administrators often choose to restrict access to as many port numbers as possible. For cases where inbound connections to the ephemeral ports is required, an entire range of ports must be opened. It is imperative that when opening a range of ports on the firewall that no system services are listening on ports in the open range. Administrators will often want to open a specific range on the firewall, and then for each machine on the internal network, make sure that the ephemeral port range on the machine coincides with the open range on the firewall.

It must be made clear that the ephemeral port range on machines on the internal network often do not coincide with each other since different operating systems may use different ranges. That is why it can be time consuming to manually configure each machine's ephemeral port range so it coincides with the open range on the firewall. As a result, administrators often end up changing to a policy of allowing all incoming ports and deny access to specific ports when needed.

It may not be necessary to open the ephemeral port range. It is usually only necessary when FTP is being served to the outside world (Passive "PASV" data connections use inbound ephemeral ports), or when FTP client access must work in non-passive mode ("PORT" connections from the server are inbound to clients using ephemeral ports).

Changing the ephemeral port range

It is desirable to change which port numbers are used for the ephemeral port range for any of the following:

- To use a larger range so that more simultaneous connections are possible.
- To shift the range to the higher numbered ports. The higher numbered ports should be used as ephemeral ports because they are less likely to be used as port numbers for

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system services. Well known service ports have traditionally been assigned to lower port numbers.

- To change the range to coincide with other systems for purposes of firewalling and automatic network address translation.

When changing the range, we suggest you change it to 49152 through 65535. If you need a larger range, continue downward from 49152, but leave 65535 as your upper bound. The following sections describe how to change the ephemeral port range on the OA operating systems:

- [Microsoft Windows](#) on page 40
- [Solaris](#) on page 41
- [AIX](#) on page 43

As noted in these sections, some systems already use the preferred range and will not need to be changed. Some operating systems also use two or more ranges, and to use the other ranges an application will have to be explicitly coded to choose the other range.

Microsoft Windows

Windows uses the traditional BSD range of 1024 through 4999 for its ephemeral port range. You can only set the upper bound of the ephemeral port range. Here is information excerpted from Microsoft Knowledgebase Article Q196271:

To set the upper boundary of the ephemeral port range on Windows:

1. Start the registry editor (`Regedt32.exe`).
2. Locate the following key in the registry:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters
```

3. On the **Edit** menu, click **Add Value**, and then add the following registry value:

```
Value Name: MaxUserPort Data Type: REG_DWORD Value: 65534
```

```
Valid Range: 5000-65534 (decimal) Default: 0x1388 (5000 decimal)
```

```
Description: This parameter controls the maximum port number used when an application requests any available user port from the system. Normally, ephemeral (that is, short-lived) ports are allocated between the values of 1024 and 5000 inclusive.
```

4. Quit the registry editor.

Solaris

Solaris uses the `ndd` utility program to change tunable IP stack parameters. The ephemeral ports on Solaris can be tuned individually for both TCP and UDP, so there are really two separate ephemeral port ranges. Solaris also provides options to change the privileged port range (ports only processes running with superuser privileges can use).

Solaris, by default, provides a large range at the end of the port range (32768 through 65535, or the upper 50%) so it is unlikely you will need to change the range from the default values.

The example below shows how to query the existing range for the TCP ephemeral ports and change the range to 49152 through 61000:

1. Enter:

```
/usr/sbin/ndd /dev/tcp tcp_smallest_anon_port
tcp_largest_anon_port
```

The current range (by default, 32768 to 65535) is displayed.

2. Enter the following commands to change the ephemeral port range to 49152 through 61000:

```
/usr/sbin/ndd -set /dev/tcp tcp_smallest_anon_port 49152
/usr/sbin/ndd -set /dev/tcp tcp_largest_anon_port 61000
```

3. Enter the following command to display the new range:

```
/usr/sbin/ndd /dev/tcp tcp_smallest_anon_port
tcp_largest_anon_port
```

The new range, 49152 through 61000, is displayed.

Note:

If you change the range values, you must do it each time the system boots. Although we recommend that you just use the default range which is sufficient, here is a sample script you can use to change the range at startup:

```
#!/sbin/sh
#
# Copy me to /etc/init.d/ephemports, then do
# "ln -s /etc/init.d/ephemports /etc/rc2.d/S70ephemports".
#
EPHEM_HI="65535"
EPHEM_LO="49152"

if [ "$#" -eq 0 ] ; then arg="start" ; else arg="$1" ; fi
case "$arg" in
'start')
    ;; # Fall through -- rest of script is the initialization code
```

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```
'stop')
    exit 0
    ;;

'status')
    EPHEM_HI=`/usr/sbin/ndd /dev/udp udp_largest_anon_port`
    EPHEM_LO=`/usr/sbin/ndd /dev/udp udp_smallest_anon_port`
    echo "UDP ephemeral port range is ${EPHEM_LO}..${EPHEM_HI}."
    EPHEM_HI=`/usr/sbin/ndd /dev/tcp tcp_largest_anon_port`
    EPHEM_LO=`/usr/sbin/ndd /dev/tcp tcp_smallest_anon_port`
    echo "TCP ephemeral port range is ${EPHEM_LO}..${EPHEM_HI}."
    exit 0
    ;;

*)
    echo "Usage: $0 { start | stop | status }"
    exit 1
    ;;
esac

/usr/sbin/ndd -set /dev/udp udp_smallest_anon_port "${EPHEM_LO}"
/usr/sbin/ndd -set /dev/udp udp_largest_anon_port "${EPHEM_HI}"
/usr/sbin/ndd -set /dev/tcp tcp_smallest_anon_port "${EPHEM_LO}"
/usr/sbin/ndd -set /dev/tcp tcp_largest_anon_port "${EPHEM_HI}"

EPHEM_HI=`/usr/sbin/ndd /dev/udp udp_largest_anon_port`
EPHEM_LO=`/usr/sbin/ndd /dev/udp udp_smallest_anon_port`
echo "UDP ephemeral port range is ${EPHEM_LO}..${EPHEM_HI}."
EPHEM_HI=`/usr/sbin/ndd /dev/tcp tcp_largest_anon_port`
EPHEM_LO=`/usr/sbin/ndd /dev/tcp tcp_smallest_anon_port`
echo "TCP ephemeral port range is ${EPHEM_LO}..${EPHEM_HI}."

exit 0
```

For more information about tuning Solaris, refer to the *Solaris Tunable Parameters Reference Manual*.

AIX

AIX uses the `no` command to set network options. AIX uses two separate ephemeral port ranges, one for TCP and UDP, and both default to the values 32768 through 65535.

To display the current port range, enter:

```
/usr/sbin/no -a | fgrep ephemeral
```

The port range is displayed:

```
tcp_ephemeral_low = 32768
tcp_ephemeral_high = 65535
udp_ephemeral_low = 32768
udp_ephemeral_high = 65535
```

The default range is sufficient, but you can change it using the `no` command.

For example, to set the TCP ephemeral port range to 49152 through 65535, enter:

```
/usr/sbin/no -o tcp_ephemeral_low=49152 -o
tcp_ephemeral_high=65535
```

The options you set with `no` must be done each time the system starts up. One way to do that is to edit `/etc/rc.tcpip` and insert the `no` commands just before the script starts running the server daemons.

Chapter 2: Installing Avaya IC components

This section describes how to install the Avaya IC servers and Design & Administration Tools, how to configure environments for servers and Design & Administration Tools, and how to configure secondary servers.

Install and configure the Avaya IC components in the order that the topics appear in this section. For example, install and configure the primary servers before you install and configure the Design & Administration Tools.

This section includes the following topics:

- [Before you install Avaya IC components](#) on page 46.
- [Upgrading Avaya IC](#) on page 48.
- [Reinstalling Avaya IC](#) on page 49.
- [Installing Avaya IC servers](#) on page 49.
- [Changing ownership for Avaya IC - Solaris and AIX only](#) on page 56.
- [Creating the primary server environment](#) on page 58.
- [Setting up Design & Administration Tools](#) on page 62.
- [Configuring the design and administration environment](#) on page 66.

CAUTION:

Do not install Avaya IC on machines that also host software that filters or controls network access. These types of software can cause Avaya IC to fail or seriously impact performance. For example, pornography filters or software firewalls can affect network access in several ways. They can cause a slowdown in network access, cause applications that open a large number of sockets to fail, or rewrite packets.

For information about installing other Avaya IC components, see:

- [Configuring agent applications](#) on page 353.
- [Installing Business Advocate components](#) on page 419.

Before you install Avaya IC components

This section describes the steps that you must perform before you install Avaya IC components. This section includes the following topics:

- [Readme files](#) on page 46
- [Avaya IC prerequisites](#) on page 46
- [License file](#) on page 46
- [Required administrator privileges](#) on page 47
- [Solaris machines](#) on page 48
- [AIX machines](#) on page 48

Readme files

Read the following Avaya IC readme files:

- Avaya IC Readme file on the Avaya IC CD-ROM
- Avaya IC Readme Addendum on the CRM Technical Support Website at <http://www.avaya.com/support/qq>

Avaya IC prerequisites

Read the *IC Installation Planning and Prerequisites* and install all prerequisite components.

License file

Obtain the necessary Avaya IC license file for your Avaya IC system. For more information, see *IC Installation Planning and Prerequisites*.

Required administrator privileges

All Avaya IC users who perform certain tasks require administrator privileges. This section includes the following topics that describe the administrator privileges required for the different operating systems:

- [Required administrator privileges for Windows](#) on page 47.
- [Required administrator privileges for Solaris and AIX](#) on page 47.

Required administrator privileges for Windows

All Avaya IC users who perform the following tasks must have a Windows Administrator login or a Windows login with administrator privileges.

- Install and configure Avaya IC servers
- Install or use Design & Administration Tools

Required administrator privileges for Solaris and AIX

All Avaya IC users who install and configure Avaya IC servers require one of the following UNIX accounts, depending upon which tasks they need to perform.

Root user - You need this account when you:

- Install Avaya IC on a machine that will host a Telephony server for an Avaya switch with Definity® or Communication Manager software.
- Configure the Web applications with the Configuration Tool, including the Website, Email Template Administration, Web License Manager, and Letter Generator.

Installation user - Use this account to perform all tasks to install and configure Avaya IC that do not require the root user. The Avaya IC installation directory must be owned by this account.

For example, you can create an installation user account named **avaya**.

 **Important:**

If you do not use a root account to install Avaya IC servers on a machine, and need to configure that machine with a Telephony server for an Avaya switch with DEFINITY or Communication Manager software, reinstall the Avaya IC servers under the root account.

Solaris machines

If you host your servers on Solaris:

- Install a Windowing environment such as X-Windows.
- Set the `DISPLAY` parameter.
- Make sure that the server machine has sufficient space in the `/var/tmp` directory for the Java Virtual Machine installation. The Avaya IC installer typically requires at least 360MB of extra temp space.

AIX machines

If you host your servers on AIX:

- Install a Windowing environment such as X-Windows.
- Set the `DISPLAY` parameter.
- Make sure that the server machine has sufficient space in the `/tmp` directory for the Java Virtual Machine installation. The Avaya IC installer typically requires at least 360MB of extra temp space.

Upgrading Avaya IC

For information on how to upgrade your Avaya IC system from an earlier release of Avaya IC, including an Avaya IC 6.1.x release, see *IC/OA Software Upgrade and Data Migration*.

Reinstalling Avaya IC

You can reinstall Avaya IC over an existing Avaya IC installation. To uninstall Avaya IC files before you reinstall, see [Uninstalling Avaya IC](#) on page 536.

To reinstall Avaya IC:

1. Stop all Avaya IC servers and Avaya IC services on the target machine.
2. Follow the instructions in the appropriate section below to reinstall the desired Avaya IC files:
 - [Installing Avaya IC servers](#) on page 49.
 - [Setting up Design & Administration Tools](#) on page 62.
 - [Configuring agent applications](#) on page 353.
 - [Installing Business Advocate components](#) on page 419.

Installing Avaya IC servers

This section includes the following topics:

- [Cautions and tips for installing Avaya IC servers](#) on page 49.
- [Installing Avaya IC servers on Windows](#) on page 50.
- [Installing Avaya IC servers on Solaris](#) on page 53.
- [Installing Avaya IC servers on AIX](#) on page 55.

Cautions and tips for installing Avaya IC servers

This section includes some important cautions and tips that you need to consider when you install the Avaya IC servers.

This section includes the following topics:

- [Avaya IC server files](#) on page 50.
- [Required disk space](#) on page 50.
- [InstallShield mode](#) on page 50.
- [Backup configuration files](#) on page 50.
- [Installation options](#) on page 50.

Avaya IC server files

The **Servers** option copies all Avaya IC server files to the machine. You cannot select which server files you will copy to the target machine. However, you do not need to configure and run all servers on that machine.

Required disk space

Make sure that you have sufficient space on the target machine to install the selected files. The Avaya IC installation does not check the amount of free disk space on the machine until after you select the components to install.

InstallShield mode

The Avaya IC installation can run only in console mode of InstallShield. The Avaya IC installation cannot run in silent mode.

Backup configuration files

The Avaya IC installer backs up configuration files in the following directory before making any changes to those files: `bin\config\backup`.

Installation options

At any time before the Avaya IC installation copies the files, select **Back** on an installation screen to change the options that you selected.

Installing Avaya IC servers on Windows

To install Avaya IC servers on Windows:

1. Log in to the machine with an account that has the required Administrator privileges.
2. Insert CD-ROM 1 for Avaya Interaction Center 6.1.3.

Avaya IC installation starts automatically.

If you disabled Autorun on the machine, navigate to the Servers directory on the CD-ROM and run `setup.exe`.

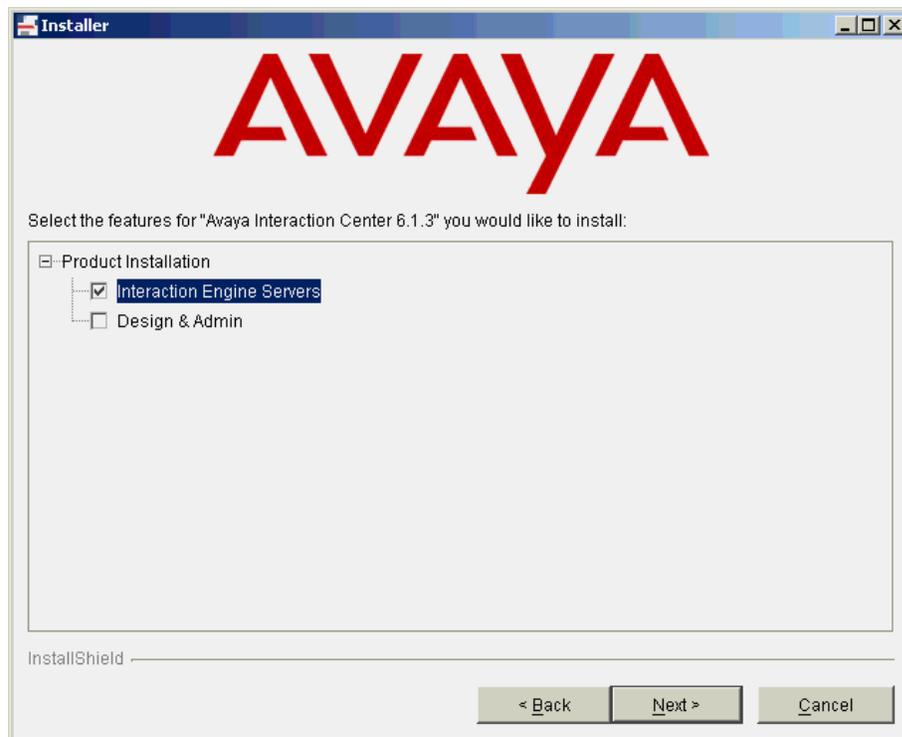
3. In the first screen of the Avaya IC installation, select **Servers, Design & Administration Tools**.

The Avaya IC installation may disappear from your screen. During this time, the installation copies the compressed files from the CD-ROM to the machine and loads the Java Virtual Machine. This process can take a few minutes.

4. When the Avaya IC installation opens, read the entire Avaya IC license agreement carefully, then:
 - If you agree to the terms of the agreement, select **I accept the terms of the license agreement**. Select **Next**.
 - If you do not agree to the terms of the agreement, select **I do not accept the terms of this license agreement**. The Avaya IC installation exits.
5. Select **Next** in the **Welcome** screen.
6. In the **Installation Directory** screen.
 - a. Accept the default or type a directory path for the Avaya IC components in the **Directory Name** field.

If you do not know the directory path, select **Browse**, then navigate to the desired directory.

You cannot change the installation directory when you reinstall Avaya IC.
 - b. Select **Next**.
7. In the **Product Installation** screen, shown in the following figure:
 - a. Check the **Interaction Engine Servers** box.
 - b. Do not check the **Design & Admin** box.
 - c. Select **Next**.

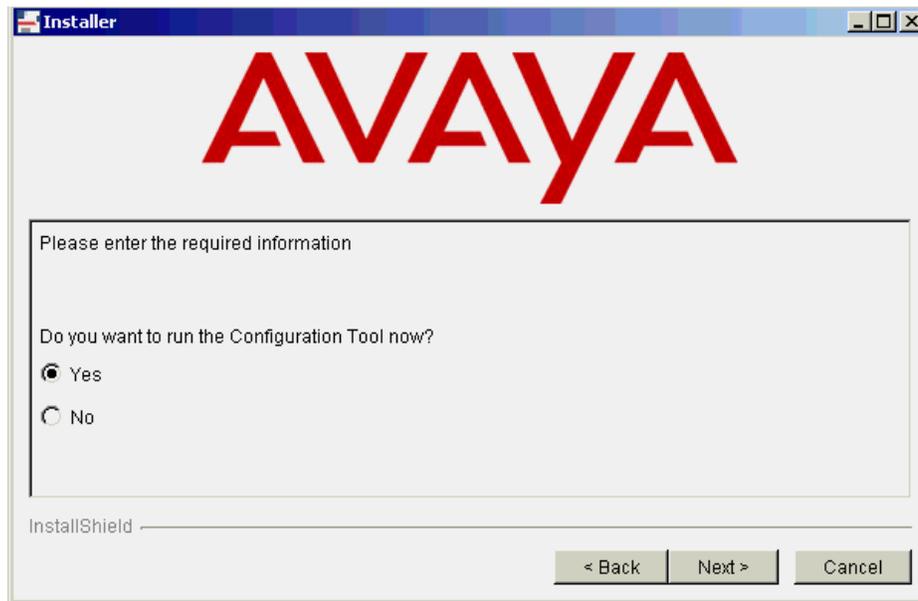


Installing Avaya IC components

8. In the next installation screen, review the details of the components you selected.
Select **Next**

Avaya IC installation copies the requested files to the machine. This process can take several minutes. If the target machine does not have sufficient space to install the components, the Avaya IC installation displays an error message.

9. In the next installation screen:
 - a. Select **Yes** to answer the question **Do you want to run the Configuration Tool now?**, as shown in the following figure.
 - b. Select **Next**.



10. In the next installation screen:
 - a. Select one of the following options for the mode in which you want the Configuration Tool to run:
 - If this machine hosts the primary ORB server, select **Primary**.
 - If this machine does not host the primary ORB server, select **Secondary**.
 - b. Select **Next**.

11. The next step in the server installation depends upon the type of servers that will run on the target machine. Perform either of the steps in the following table.

Type of servers	Location of steps
Primary servers, including primary ORB server	Creating the primary server environment on page 58
Secondary servers	Creating a secondary server environment on page 162

Installing Avaya IC servers on Solaris

To install Avaya IC servers on Solaris:

1. Log in to the machine with an account with the required privileges.
For more information, see [Required administrator privileges](#) on page 47.
2. Insert CD-ROM 2 for Avaya Interaction Center 6.1.3.
The Avaya IC CD-ROM mounts automatically.
3. To start the Avaya IC installation:
 - a. Change to the following directory on the CD-ROM: `<CD-ROM_drive>/Solaris`
 - b. Execute `./setup.bin`
If you launch the `setup.bin` command from Solaris File Manager, the installation window may not terminate after the installation is complete.
If the default temp directory does not have sufficient space to override the `TMPDIR` environment variable, run: `./setup.bin -is:tempdir <dir_name>`
The Avaya IC installation may disappear from your screen. During this time, the installation copies the compressed files from the CD-ROM to the machine and loads the Java Virtual Machine. This process can take a few minutes.
4. When the Avaya IC installation opens, read the entire Avaya IC license agreement carefully, then:
 - If you agree to the terms of the agreement, select **I accept the terms of the license agreement**. Select **Next**.
 - If you do not agree to the terms of the agreement, select **I do not accept the terms of this license agreement**. The Avaya IC installation exits.
5. Select **Next** in the **Welcome** screen.

Installing Avaya IC components

6. In the **Installation Directory** screen:

- a. Accept the default or type a directory path for the Avaya IC components in the **Directory Name** field.

If you do not know the directory path, select **Browse**, select a directory from the available list to highlight the directory, then select **Open** or **Update**.

- b. Select **Next**.

7. In the next installation screen, review the details of the components you selected and the disk space that they require. Select **Next**

Avaya IC installation copies the requested files to the machine. This process can take several minutes. If the target machine does not have sufficient space to install the components, the Avaya IC installation displays an error message.

8. In the next installation screen:

- a. Select **Yes** to answer the question **Do you want to run the Configuration Tool now?**

- b. Select **Next**.

9. In the next installation screen:

- a. Select one of the following options for the mode in which you want the Configuration Tool to run:

- If this machine hosts the primary ORB server, select **Primary**.
- If this machine does not host the primary ORB server, select **Secondary**.

- b. Select **Next**.

10. The next step in the server installation depends upon the type of servers that will run on the target machine. Perform either of the steps in the following table.

Type of servers	Location of steps
Primary servers, including primary ORB server	Creating the primary server environment on page 58
Secondary servers	Creating a secondary server environment on page 162

Installing Avaya IC servers on AIX

To install Avaya IC servers on AIX:

1. Log in to the machine with an account with the required privileges.
For more information, see [Required administrator privileges](#) on page 47.
2. Insert CD-ROM 2 for Avaya Interaction Center 6.1.3 and mount the CD-ROM.
3. To start the Avaya IC installation:
 - a. Change to the following directory on the CD-ROM: `<CD-ROM_drive>/AIX`
 - b. Execute `./setup.bin`
If the default temp directory does not have sufficient space to override the TMPDIR environment variable, run: `./setup.bin -is:tempdir <dir_name>`
The Avaya IC installation may disappear from your screen. During this time, the installation copies the compressed files from the CD-ROM to the machine and loads the Java Virtual Machine. This process can take a few minutes.
4. When the Avaya IC installation opens, read the entire Avaya IC license agreement carefully, then:
 - If you agree to the terms of the agreement, select **I accept the terms of the license agreement**. Select **Next**.
 - If you do not agree to the terms of the agreement, select **I do not accept the terms of this license agreement**. The Avaya IC installation exits.
5. Select **Next** in the **Welcome** screen.
6. In the **Installation Directory** screen, shown in the following figure:
 - a. Accept the default or type a directory path for the Avaya IC components in the **Directory Name** field.
If you do not know the directory path, select **Browse**, select a directory from the available list to highlight the directory, then select **Open** or **Update**.
 - b. Select **Next**.
7. In the next installation screen, review the details of the components you selected and the disk space that they require. Select **Next**
Avaya IC installation copies the requested files to the machine. This process can take several minutes. If the target machine does not have sufficient space to install the components, the Avaya IC installation displays an error message.

Installing Avaya IC components

8. In the next installation screen:
 - a. Select **Yes** to answer the question **Do you want to run the Configuration Tool now?**
 - b. Select **Next**.
9. In the next installation screen:
 - a. Select one of the following options for the mode in which you want the Configuration Tool to run:
 - If this machine hosts the primary ORB server, select **Primary**.
 - If this machine does not host the primary ORB server, select **Secondary**.
 - b. Select **Next**.
10. The next step in the server installation depends upon the type of servers that will run on the target machine. Perform either of the steps in the following table.

Type of servers	Location of steps
Primary servers, including primary ORB server	Creating the primary server environment on page 58
Secondary servers	Creating a secondary server environment on page 162

Changing ownership for Avaya IC - Solaris and AIX only

If you installed Avaya IC as the root user and do not want to run Avaya IC servers and services as root in your Solaris or AIX system, you need to change the ownership of the Avaya IC directories and files.

Note:

Create a user for the Avaya IC system before you perform these steps. For more information, see *IC Installation Planning and Prerequisites*.

This section includes the following steps that you must perform if you do not want to run Avaya IC as root:

1. [Changing ownership of the Avaya IC directories and files](#) on page 57.
2. [Changing ownership for Telephony server - Solaris with Avaya switch only](#) on page 57.
3. [Changing ownership for Telephony server - AIX with Avaya switch only](#) on page 58.

Changing ownership of the Avaya IC directories and files

To change ownership of the Avaya IC directories and files:

1. Log in as root user.
2. Navigate to `IC_INSTALL_DIR/IC61/bin`.
3. Shutdown all Avaya IC servers, as described in [Stopping all servers](#) on page 152.
4. Navigate to the parent directory of `AVAYA_IC61_HOME`.
5. Execute the following command:

```
chown -R <avayauser>:<avayagroup> IC61
```

where `<avayauser>` represents the non-root user that you use to run the Avaya IC components and `<avayagroup>` is the primary group for `<avayauser>`.
6. Switch to `<avayauser>` and restart the Avaya IC servers.
7. For a Solaris system, continue with [Changing ownership for Telephony server - Solaris with Avaya switch only](#) on page 57.

Changing ownership for Telephony server - Solaris with Avaya switch only

For a Solaris system that includes an Avaya switch with Definity® or Communication Manager software, change the ownership of every Telephony server.

You configure the SUID bit and root ownership to ensure that the Telephony server for the Avaya switch can start up as the root user to enable agent event reporting. The Telephony server resets its process user ID to `<avayauser>` immediately after startup.

To change ownership for the Telephony server on Solaris:

1. Log in as root user.
2. Navigate to `IC_INSTALL_DIR/IC61/bin`.
3. Execute the following command:

```
chown root cvlansrv
```
4. Execute the following command to verify that the SUID bit is set on `cvlansrv`:

```
ls -l cvlansrv
```
5. Execute the `crle` command as follows:

```
crle -s AVAYA_IC61_HOME/lib
```

Changing ownership for Telephony server - AIX with Avaya switch only

For an AIX system that includes an Avaya switch with Definity® or Communication Manager software, change the ownership of every Telephony server.

You configure the SUID bit and root ownership to ensure that the Telephony server for the Avaya switch can start up as the root user to enable agent event reporting. The Telephony server resets its process user ID to `<avayauser>` immediately after startup.

To change ownership for the Telephony server:

1. Log in as root user.
2. Navigate to `IC_INSTALL_DIR/IC61/bin`.
3. Execute the following command:

```
chmod u-s cvlansrv
```

4. Execute the following command to verify that the SUID bit is not set on cvlansrv:

```
ls -l cvlansrv
```

Creating the primary server environment

The primary server environment includes the configuration settings required for the primary ORB server and the other Avaya IC servers on the machine that hosts the primary ORB server.

You specify the configuration of the primary server environment on the Initial Configuration tab of the Configuration Tool. The Initial Configuration tab is dynamic. The Configuration Tool does not automatically display all of the fields. For more information about the Initial Configuration tab, see [Initial Configuration tab](#) on page 480.

Some of the steps are optional. You need to perform them only if the Avaya IC system includes an Oracle or DB2 database, or if the primary server machine will also host a Telephony server.

To create the primary server environment, complete the steps in the following sections:

1. [Configuring the primary server environment](#) on page 59.
2. [Specifying the Telephony switch](#) on page 59.
3. [Configuring database settings](#) on page 60.
4. [Completing the configuration](#) on page 61.

Configuring the primary server environment

This procedure continues from [Installing Avaya IC servers](#) on page 49.

To configure the primary server environment:

1. In the **Initial Configuration** tab of the Configuration Tool, confirm that **Primary** is selected in the **Select Mode** drop-down list.
2. Confirm that the IP address in the **IP Address** drop-down list is the correct IP address for the machine that hosts the primary ORB server.

 **Important:**

If the primary ORB server runs on a machine with multiple network interface cards, you must select the IP address for the first network interface card on the machine. The primary ORB server cannot run on any other network interface card.

3. Make sure the port assignment in the **Start Port** field is an available port on the target machine. Type a new port assignment if necessary.
4. Select **Start ORB Server**.
5. The next step in this procedure depends upon the deployment of the Avaya IC system:
 - If the machine hosts a Telephony server, continue with [Specifying the Telephony switch](#) on page 59.
 - If the machine does not host a Telephony server, continue with [Configuring database settings](#) on page 60.

Specifying the Telephony switch

Only perform this step if the machine hosts a Telephony server. If the machine does not host a Telephony server, skip this step and continue with [Configuring database settings](#) on page 60.

To specify the Telephony switch:

1. Select and check the **Telephony Switch** box.
2. From the **Telephony Switch** drop-down list, select the name of the switch that the Telephony server will communicate with.

The Telephony server must communicate with a switch that is supported for the operating system of the machine. For example, do not select a Nortel switch if you plan to host the Telephony server on an AIX machine. For more information about switch support, see *IC Installation Planning and Prerequisites*.

3. The next step in this procedure depends upon the deployment of the Avaya IC system:
 - If the Avaya IC system includes an Oracle or DB2 database, continue with [Configuring database settings](#) on page 60.
 - If the Avaya IC system includes a SQL Server database, continue with [Completing the configuration](#) on page 61.

Configuring database settings

Only perform this step if the Avaya IC system uses an Oracle or DB2 database. If the Avaya IC system uses a SQL Server database, skip this step and continue with [Completing the configuration](#) on page 61.

To configure database settings, perform one of the following steps:

1. If your Avaya IC system includes an Oracle database, see [Configuring database settings for Oracle](#) on page 60.
2. If your Avaya IC system includes a DB2 database, see [Configuring database settings for DB2](#) on page 61.

Configuring database settings for Oracle

To configure database settings for Oracle:

1. Select and check the **Oracle Setup** box.

The Configuration Tool displays the required fields for an Avaya IC system with an Oracle database.
2. For all Oracle databases, type the NLS Lang parameter in the **NLS Lang** field to specify the character set of the database.

For more information about the NLS Lang parameter, including a list of NLS LANG parameters for supported languages, see [Specifying the NLS Lang property for Oracle](#) on page 544.
3. For all Oracle databases, type the home directory of the Oracle client on the machine that hosts the core servers in the **Oracle Home** field.

For example, type `/opt/oracle/8.1.7`
4. For Oracle databases on Solaris, type the Oracle SID of the database in the **Oracle SID** field.

For example, type `icutf8db`. The Oracle SID field is case-sensitive.
5. For Oracle databases on Solaris, select the correct version of Oracle from the **Oracle Version** field.
6. Continue with [Completing the configuration](#) on page 61.

Configuring database settings for DB2

To configure database settings for DB2:

1. Select and check the **DB2 Setup** box.

The Configuration Tool displays the required fields for an Avaya IC system with an DB2 database.

2. Type the home directory of the DB2 client on the machine that hosts the core servers in the **DB2 Home** field.

For example, type `/usr/lpp/db2_07_01`

3. Type the name of the DB2 instance in the **DB2 Instance** field.

For example, type `db2inst1`

4. Continue with [Completing the configuration](#) on page 61.

Completing the configuration

To complete the configuration of the primary server environment:

1. If you host the servers on Solaris or AIX, select the primary locale from the **Locale** drop-down list.

The drop-down list includes all of the locales supported by the operating system. For example, if your servers use an English locale:

- For AIX, select `EN_US`.
- For Solaris, select `en_US.UTF-8`.

2. Select **Apply Settings** in the Configuration Tool to configure and start the core servers.

3. Select **OK** in the **Success** dialog box.

4. Select **Exit**.

The Configuration Tool closes and you return to the Avaya IC Installation.

5. In the Avaya IC installation, select **Next**.

6. Review the Avaya IC Readme information and view the readme, if desired. Select **Next**.

For Windows, if you leave the **View Readme** field checked, the Avaya IC Readme opens in Adobe Acrobat. After you have reviewed the Readme, close Acrobat to return to the Avaya IC installer.

7. On Windows machines, select **Yes, restart my system**.

8. Select **Finish**.

Setting up Design & Administration Tools

This section describes how to install the Design & Administration Tools and configure the design and administration environment. This section also includes some important cautions and tips for the Design & Administration Tools.

This section includes the following topics:

- [Cautions and tips for Design & Administration Tools](#) on page 62.
- [Installing Design & Administration Tools](#) on page 63.
- [Configuring the design and administration environment](#) on page 66.

Cautions and tips for Design & Administration Tools

This section includes some important cautions and tips that you need to consider when you install and use the Avaya IC Design and Administration Tools.

This section includes the following topics:

- [Components installed with Design & Administration Tools](#) on page 62.
- [Design & Administration machines](#) on page 62.
- [Supported operating systems](#) on page 63.
- [Running multiple instances of IC Manager](#) on page 63.

Components installed with Design & Administration Tools

Avaya IC installs all of the Design & Administration Tools on the target machine. You cannot select which tools to install.

The tools and files that you install with the Design & Administration Tools are:

- IC Manager
- Avaya Workflow Designer, with blocks, sample workflows, and related files
- Avaya Database Designer, with the IC Script Editor, design files, and related files

Design & Administration machines

IC Manager and other administrative applications can potentially consume a significant amount of CPU resources. To ensure that the requirements of IC Manager do not interfere with the performance of your Avaya IC servers, deploy your Design & Administration Tools on a dedicated machine.

Supported operating systems

Design & Administration Tools work only on a supported Windows operating system. For more information, see *IC Installation Planning and Prerequisites*.

Running multiple instances of IC Manager

IC Manager does not support concurrent administration. When an administrator selects and updates a record, such as a server or an agent, IC Manager does not lock that record. Another administrator can open and update the same record.

CAUTION:

Simultaneous administration of servers, domains, and Directory server tables in more than one IC Manager can cause corruption of the configuration files and loss of configuration data.

If you plan to have more than one instance of IC Manager, you must clearly define the administrative policies for Avaya IC. For example:

- Only use one instance of IC Manager at a time to administer servers.
- Determine which Avaya IC elements an administrator can update, and assign the appropriate permissions to the login ID for that administrator.
- Do not allow administrators to log in to more than one instance of IC Manager with the same login ID and password.

For more information about multiple instances of IC Manager, see *IC Administration Volume 1: Servers & Domains*.

Installing Design & Administration Tools

At any time before the Avaya IC installation copies the files, select **Back** to change the options that you selected.

To install Avaya IC Design & Administration Tools:

1. Log in to the machine as Administrator or a user with administrator privileges.
2. Insert Avaya Interaction Center 6.1 CD 1 and select **Servers, Design & Administration Tools** to start the installation.

If you disabled Autorun on the machine, navigate to the `Servers` directory on the CD-ROM and run `setup.exe`.

Note:

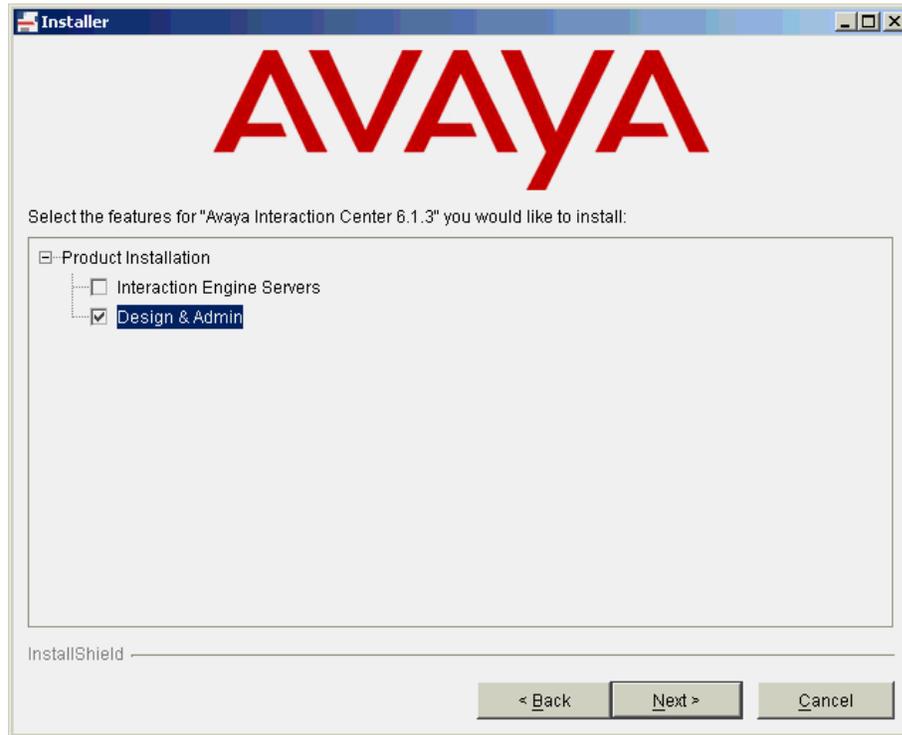
The Avaya IC installation may disappear from your screen while the installation copies the compressed files from the CD-ROM to the machine, and loads the Java Virtual Machine. This process can take a few minutes.

Installing Avaya IC components

3. When the Avaya IC installation opens, read the entire Avaya IC license agreement carefully, then:
 - If you agree to the terms of the agreement, select **I accept the terms of the license agreement**. Select **Next**.
 - If you do not agree to the terms of the agreement, select **I do not accept the terms of this license agreement**. The Avaya IC installation exits.
4. Select **Next** in the **Welcome** screen.
5. In the **Installation Directory** screen:
 - a. Accept the default or type a directory path for the Avaya IC components in the **Directory Name** field.

If you do not know the directory path, select **Browse** and navigate to the desired directory. You cannot choose the installation directory when you reinstall Avaya IC.
 - b. Select **Next**.
6. In the **Product Installation** screen, shown in the following figure:
 - a. Complete the following fields:
 - Check the **Avaya Interaction Center 6.1** box.
 - Do not check the **Interaction Engine Servers** box.
 - Check the **Design & Admin** box.

b. Select **Next**.



7. Review the details of the components you selected. Select **Next**

Avaya IC installation copies the requested files to the machine. This process can take several minutes. If the target machine does not have sufficient space to install the components, the Avaya IC installation displays an error message.

8. Select **Next** in the Installation Confirmation screen.

9. In the next Installer screen:

a. Select one of the fields as shown in the following table.

Field	Description
Yes	If the installation on the current machine includes IndexQ or Outbound Contact Reports.
No	If the machine does not include those components.

b. Select **Next**.

If you selected **No** and did not install IndexQ or Outbound Reporting, continue with Step 11.

Installing Avaya IC components

10. If you chose to install IndexQ or Outbound Reporting, in the message box:
 - a. Select one of the fields as shown in the following table.

Field	Description
Yes	To update the System 32 files and continue with the installation.
No	To skip this step and continue with the installation. Select No if you did not choose to install IndexQ or Outbound Contact Reports but still see this message box.

- b. After the System 32 files are updated, select **Finish** to return to the Avaya IC installation.

Tip:

If the message box is not visible, the box may have opened behind the Installation screen.

11. In the next installation screen:
 - a. Select **Yes** to answer the question **Do you want to run the Configuration Tool now?**
 - b. Select **Next**.

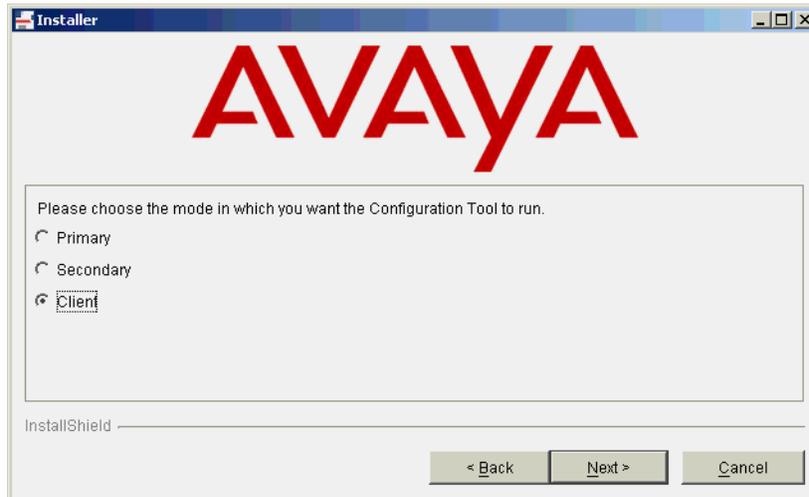
Configuring the design and administration environment

You must run the Configuration Tool to configure the design and administration environment. During this configuration, the Configuration Tool copies the files in the following table from the machine that hosts the primary ORB server to the machine that hosts IC Manager.

File type	File name
Implementation file	vesp.imp
Interface file	vespidl.pk

To configure the design and administration environment:

1. In the next installation window:
 - a. Select the **Client** option for the mode in which you want the Configuration Tool to run, as shown in the following figure.
 - b. Select **Next**.



2. In the **Initial Configuration** tab of the Configuration Tool, confirm that **Client** is selected in the **Select Mode** drop-down list.
3. Complete and confirm the default entries in the fields shown in the following table.

Field	Description	Sample entry
Primary Host Name	The name of the machine that hosts the primary ORB server. The primary host name can be the IP Address or fully-qualified domain name of the machine.	coresvr.avaya.com
Primary ORB Port	The port that the primary ORB server uses for communications.	Default: 9001
IC Domain	This is the Avaya IC domain that includes the primary ORB server. This domain is typically the Default domain.	Default

For more information about these fields, see [Client fields on the Initial Configuration tab](#) on page 487.

4. Select **Apply Settings** in the Configuration Tool.
5. Select **OK** in the **Success** dialog box.
6. Select **Exit**.

■ ■ ■ ■ ■ ■

Chapter 3: Installing Avaya Full Text Search Engine

Avaya Full Text Search Engine (Avaya FTSE) is the full text search engine for Avaya Interaction Center (Avaya IC). Avaya IC requires Avaya FTSE to function correctly.

This section describes how to install Avaya FTSE. You must install Avaya FTSE before you complete the configuration of the Avaya IC system. For more information, see [Installation order](#) on page 23.

This section includes the following topics:

- [Cautions and tips for installing Avaya FTSE](#) on page 69.
- [Installing Avaya FTSE for Microsoft Windows](#) on page 70.
- [Installing Avaya FTSE for Sun Solaris](#) on page 72.
- [Installing Avaya FTSE for IBM AIX](#) on page 74.

Cautions and tips for installing Avaya FTSE

Review the cautions and tips in the following topics before you install Avaya FTSE:

- [Disk space](#) on page 70.
- [Required administrator privileges](#) on page 70.

Disk space

Make sure that you have sufficient space on the target machine to install the selected files. The Avaya FTSE installation does not check the amount of free disk space on the machine until after you select the components to install.

The following table describes the disk space required by the program files for Avaya FTSE on the supported operating systems. These disk space requirements do not include estimates for the space used by QKnowledge files and Web Self-Service files.

Operating system	Disk space required by program files
Microsoft Windows	250 MB
Sun Solaris	120 MB
IBM AIX	120 MB

The disk space requirements for Avaya IC, described in *IC Installation Planning and Prerequisites*, include the space required by Avaya FTSE.

Required administrator privileges

The Avaya FTSE installation requires the same administrator privileges as Avaya IC. For more information, see [Required administrator privileges](#) on page 47.

Installing Avaya FTSE for Microsoft Windows

This section describes the installation and configuration of Avaya FTSE for Microsoft Windows.

This section includes the following topics:

- [Where to install and configure Avaya FTSE for Microsoft Windows](#) on page 71.
- [Default port assignment for QKnowledge](#) on page 71.
- [Installing Avaya FTSE on a Microsoft Windows machine](#) on page 71.

Where to install and configure Avaya FTSE for Microsoft Windows

Install Avaya FTSE on all Windows machines that host one or more of the following:

- QKnowledge
- IndexQ
- Customer Website
- Administrative Website
- The following Web Management servers:
 - Attribute server
 - WebACD server
 - ICM server
 - CIRS server

Default port assignment for QKnowledge

By default, Avaya FTSE configures the Tomcat service for QKnowledge on Tomcat base port +4. You set the Tomcat base port on the Web tab of the Avaya IC Configuration Tool when you configure Avaya IC Web applications.

The default Tomcat base port is 9600. If you do not change this base port in the Avaya IC Configuration Tool, the default port assignment for QKnowledge is 9604.

You cannot change this port assignment when you configure QKnowledge.

Installing Avaya FTSE on a Microsoft Windows machine

To install Avaya FTSE on a Windows machine:

1. Log in to the machine with an account that has the required administrator privileges.
2. Insert the Avaya FTSE CD-ROM.

The Avaya FTSE installation starts automatically.
3. If you disabled Autorun on the machine, navigate to `CD_ROM_DRIVE:\win32` and run `setupwin32.exe`.
4. In the Welcome screen of the installer, select **Next**.

Installing Avaya Full Text Search Engine

5. In the License screen of the installer, read the entire Avaya FTSE license agreement carefully, then:
 - If you agree to the terms of the agreement, select **I accept the terms of the license agreement**. Select **Next**.
 - If you do not agree to the terms of the agreement, select **I do not accept the terms of this license agreement**. The Avaya FTSE installation exits.
6. Review the details of the Avaya FTSE components. Select **Next**

Avaya FTSE installation copies the requested files to the machine. This process can take several minutes. If the target machine does not have sufficient space to install the components, the Avaya FTSE installation displays an error message.
7. Review the summary information to confirm that Avaya FTSE installed correctly. Select **Next**.
8. Select **Yes, restart my computer**.
9. Select **Finish**.

Restart the machine, if the machine does not restart automatically.
10. Continue with the configuration of Avaya IC.

Installing Avaya FTSE for Sun Solaris

This section describes the installation of Avaya Full Text Search Engine (Avaya FTSE) for Sun Solaris.

This section includes the following topics:

- [Where to install Avaya FTSE for Sun Solaris](#) on page 73.
- [Installing Avaya FTSE on a Sun Solaris machine](#) on page 73.

Where to install Avaya FTSE for Sun Solaris

Install Avaya FTSE on all machines that host:

- Customer Website
- Administrative Website
- The following Web Management servers:
 - Attribute server
 - WebACD server
 - ICM server
 - CIRS server

Tip:

Avaya IC does not support QKnowledge or IndexQ on Sun Solaris. If the Avaya IC system includes one or both of these components, install these components and Avaya FTSE on a Windows machine. For more information, see [Installing Avaya FTSE for Microsoft Windows](#) on page 70.

Installing Avaya FTSE on a Sun Solaris machine

To install Avaya FTSE on a Solaris machine:

1. Log in to the machine with an account with the required administrator privileges.
2. Insert the Avaya FTSE CD-ROM.

The Avaya FTSE CD-ROM mounts automatically.

3. Navigate to `CD-ROM_drive/Solaris`
4. Execute `IC_INSTALL_DIR/IC61/bin/icenv ./instftse`

where `AVAYA_IC_HOME` is the installation directory for Avaya IC. For example, `/opt/Avaya/IC61`

The Avaya FTSE files are installed.

Installing Avaya FTSE for IBM AIX

This section describes the installation of Avaya FTSE for IBM AIX.

This section includes the following topics:

- [Where to install Avaya FTSE for IBM AIX](#) on page 74.
- [Installing Avaya FTSE on IBM AIX](#) on page 74.

Where to install Avaya FTSE for IBM AIX

Install Avaya FTSE on all machines that host:

- Customer Website
- Administrative Website
- The following Web Management servers:
 - Attribute server
 - WebACD server
 - ICM server
 - CIRS server

Tip:

Avaya IC does not support QKnowledge or IndexQ on IBM AIX. If the Avaya IC system includes one or both of these components, install these components and Avaya FTSE on a Windows machine. For more information, see [Installing Avaya FTSE for Microsoft Windows](#) on page 70.

Installing Avaya FTSE on IBM AIX

To install Avaya FTSE on an AIX machine:

1. Log in to the machine with an account with the required administrator privileges.
2. Insert the Avaya FTSE CD-ROM.

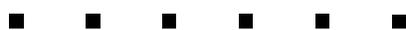
The Avaya FTSE CD-ROM mounts automatically.

3. Navigate to `CD-ROM_drive/AIX`.

4. Execute `IC_INSTALL_DIR/IC61/bin/icenv ./instftse`

where `AVAYA_IC_HOME` is the installation directory for Avaya IC. For example,
`/usr/Avaya/IC61`

The Avaya FTSE files are installed.



Chapter 4: Configuring databases

This section describes how to configure the Avaya IC data server, databases, data sources, and Business Applications. All Avaya IC systems require an IC Repository database and a CallCenterQ database.

This section includes the following topics. Perform the steps in these topics in the order set out below.

1. [Before you configure Avaya IC databases](#) on page 77.
2. [Copying the stored procedure library - DB2 only](#) on page 78.
3. [Setting up the primary Data server](#) on page 79.
4. [Data sources and Business Applications](#) on page 86.
5. [Creating IC Repository](#) on page 89.
6. [Creating the CCQ database](#) on page 101.
7. [Creating Business Applications](#) on page 111.

Before you configure Avaya IC databases

Before you configure the Avaya IC databases, complete the following prerequisites:

Install Avaya IC servers - You must create and configure the primary server environment, then start the primary servers before you can configure the Avaya IC servers and components.

At a minimum, do the following:

- On the machine that hosts the Avaya IC primary ORB server, install the Avaya IC server files and configure the primary server environment.
- On the machine that hosts the Data server, install the Avaya IC server files and configure the server environment. If this machine is different from the one that hosts the primary ORB server, configure a secondary server environment on this machine.

If you have not installed the server files, see [Installing Avaya IC servers](#) on page 49.

Configuring databases

Install Avaya IC Design & Administration tools - Install these tools on a dedicated machine that has network access to all server machines. For information on how to install these tools, see [Setting up Design & Administration Tools](#) on page 62.

Install database management system - For more information, see *IC Installation Planning and Prerequisites* and the documentation provided with the database management system.

Install and configure the database client software - The database client software also includes the vendor libraries, and support files. Install and configure these files on the machine that hosts the Data server. The Data server requires the database client software to communicate with the database. For example, if your Avaya IC system includes a supported Oracle database, install the Oracle client for that version on the machine that hosts the Data server.

Database connections - Configure and validate the database software connections on the machine where you plan to install the Data server.

Copying the stored procedure library - DB2 only

If you host your Avaya IC databases on DB2, you must copy the qdb2sp stored procedure library from the machine that hosts the primary ORB server to the machine that hosts the Avaya IC database instance.

To copy the qdb2sp stored procedure library to the DB2 server installation hierarchy:

1. On the machine that hosts the DB2 Data server, navigate to the `IC_INSTALL_DIR/IC61/lib` directory where Avaya IC installs the qdb2sp stored procedure library.
2. Use the ftp command or the rcp command to copy the qdb2sp stored procedure library to the following directory on the machine that hosts the DB2 server:

`db2inst1/sqllib/function`

Note:

Do not copy the stored procedure library to any machine that hosts the DB2 client. The stored procedure library must be copied to the function directory of the DB2 server.

Setting up the primary Data server

The Data server is specific to the type of database you use in your Avaya IC system. All Avaya IC server and client components use the Data server to communicate with your database. The Data server uses the Avaya IC account for each component or user to link the Avaya IC components and the database server.

All Data servers support connection pooling.

After you configure the Data server, you can configure other Avaya IC applications on the same machine.

This section includes the following topics:

- [Cautions and tips for configuring the Data server](#) on page 79.
- [Configuring the primary Data server](#) on page 80.

Cautions and tips for configuring the Data server

When you configure the Data server, note the following:

Database machine - Do not install and configure the Data server on the machine that hosts your database.

Host your database server on a dedicated machine, so you can tune your database server to maximize database operations and improve the reliability and performance of the database.

Multiple database types - A Data server can only communicate with one type of database. Install multiple Data servers if your Avaya IC configuration requires more than one type of database. For example, you need a second Data server if you maintain a legacy database in a different type of database.

The CCQ database, IC Repository database, and Avaya OA database must all be the same database type.

DB2 stored procedure library - If you use DB2 for your Avaya IC databases, you must copy the qdb2sp stored procedure library from the machine that hosts the primary ORB server to the DB2 installation hierarchy. If you do not copy the stored procedure library, the Data server will not be able to communicate with the DB2 database server, and Database Designer will not be able to configure the Avaya IC databases. For more information, see [Copying the stored procedure library - DB2 only](#) on page 78.

Configuring the primary Data server

You configure the Data server in IC Manager.

Note:

These instructions are for the primary Data server, and therefore do not include information about the ODBC Data server or the Legacy Data server. For more information about those Data servers, see *IC Administration Volume 1: Servers & Domains*. For more information about how to configure a secondary Data server, see [Creating a secondary Data server](#) on page 169.

This section includes the following topics:

- [Configuring a primary Data server for Microsoft SQL Server](#) on page 80.
- [Configuring a primary Data server for Oracle](#) on page 82.
- [Configuring a primary Data server for IBM DB2](#) on page 84.

Configuring a primary Data server for Microsoft SQL Server

To configure the primary Data server:

1. On the machine where you installed the Design & Administration Tools, select **Start > Programs > Avaya Interaction Center 6.1 > IC Manager**.
2. Log in to IC Manager with the pre-assigned login ID and password shown in the following table.

Login	Password
Admin	admin

The next time you log in, IC Manager will prompt you to change the password.

3. Select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **DataServerMSSQL** from the list of servers.
 - c. Select **OK**.

4. In the **General** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	Enter a logical name for the Data server. For example, DataServerMSSQL.	Include the type of database on your Avaya IC system in the name. You need this name to configure IC Repository and the CCQ database. Tip: For all secondary Data servers, include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the IP address of the machine that hosts the server, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. In the **DataServer** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
DB Login	Enter your DBA user name.	The name used by the Data server to access databases.
DB Password	Enter your database password.	The password that corresponds to the database login name used by the Data server to access databases.
Request Handler Thread Pool Size	Enter the number of requests in the thread pool. Default is 30.	Maximum number of threads that handle client requests in the Data server. These threads accept requests from the Data server clients and queues them for execution in the database.
DB Connection Pool Size	Enter the number of connections in the pool. Default is 15. Minimum is 1.	Maximum number of database connections to open in a connection pool.

Configuring databases

6. Select the **Debug** tab and perform the following steps:
 - a. Select the **Ellipsis (...)** button next to **Trace Levels**.
 - b. In the **Trace Levels** dialog box, check the following boxes.

Field	Recommended entry	Notes
idl	<ul style="list-style-type: none">● Check this box for development systems only.● Clear this box for production systems.	idl is a higher level trace that is more readable than msg. idl writes all method invocations to the log file.
flush	<ul style="list-style-type: none">● Check this box for development systems only.● Clear this box for production systems.	When the server writes to the log buffer, flush immediately writes the information to the log file. Flush does not wait for the buffer to fill before writing entries to the log file.

- c. Select **OK**.

For information about the other options in the **Trace Levels** dialog box, see *IC Administration Volume 1: Servers & Domains*.

7. Select **OK** to save the Data server configuration.
8. Right-click on the Data server, and select **Start** from the drop-down list.

Configuring a primary Data server for Oracle

To configure the primary Data server for Oracle:

1. On the machine where you installed the Design & Administration Tools, select **Start > Programs > Avaya Interaction Center 6.1 > IC Manager**.
2. Log in to IC Manager with the pre-assigned login ID and password shown in the following table.

Login	Password
Admin	admin

The next time you log in, IC Manager will prompt you to change the password.

3. Select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **DataServerOracle** from the list of servers.
 - c. Select **OK**.

4. In the **General** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	Type DataServerOracle or another logical name for the Data server.	Include the type of database on your Avaya IC system in the name. You need this name to configure IC Repository and the CCQ database. Tip: For all secondary Data servers, include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the IP address of the machine that hosts the server, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. In the **DataServer** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
DB Login	Enter the Oracle database user name.	The database login name used by the Data server to access databases.
DB Password	Enter the password for the ODBC database.	The password as configured in the Oracle database.
Oracle Home Directory	Enter the pathname of the home directory of the Oracle database.	Oracle Data server only. This home directory overrides the home directory specified in the IC Data Source.
Request Handler Thread Pool Size	Enter the number of requests in the thread pool. Default is 30.	Maximum number of threads that handle client requests in the Data server. These threads accept requests from the Data server clients and queues them for execution in the database.
DB Connection Pool Size	Enter the number of connections in the pool. Default is 15. Minimum is 1.	Maximum number of database connections to open in a connection pool.

6. Select the **Debug** tab and perform the following steps:

Configuring databases

- a. Select the **Ellipsis (...)** button next to **Trace Levels**.
- b. In the **Trace Levels** dialog box, check the following boxes.

Field	Recommended entry	Notes
idl	<ul style="list-style-type: none">● Check this box for development systems only.● Clear this box for production systems.	idl is a higher level trace that is more readable than msg. idl writes all method invocations to the log file.
flush	<ul style="list-style-type: none">● Check this box for development systems only.● Clear this box for production systems.	When the server writes to the log buffer, flush immediately writes the information to the log file. Flush does not wait for the buffer to fill before writing entries to the log file.

- c. Select **OK**.

For information about the other options in the **Trace Levels** dialog box, see *IC Administration Volume 1: Servers & Domains*.

7. Select **OK** to save the Data server configuration.
8. Right-click on the Data server, and select **Start** from the drop-down list.

Configuring a primary Data server for IBM DB2

To configure the primary Data server:

1. On the machine where you installed the Design & Administration Tools, select **Start > Programs > Avaya Interaction Center 6.1 > IC Manager**.
2. Log in to IC Manager with the pre-assigned login ID and password shown in the following table.

Login	Password
Admin	admin

The next time you log in, IC Manager will prompt you to change the password.

3. Select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **DataServerDB2** from the list of servers.
 - c. Select **OK**.

4. In the **General** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	Type DataServerDB2 or another logical name for the Data server.	Include the type of database on your Avaya IC system in the name. You need this name to configure IC Repository and the CCQ database. Tip: For all secondary Data servers, include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the IP address of the machine that hosts the server, or type in the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. In the **DataServer** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
DB Login	Enter your database login name.	The name used by the Data server to access databases.
DB Password	Enter your database password.	The password that corresponds to the database login name used by the Data server to access databases.
Request Handler Thread Pool Size	Enter the number of requests in the thread pool. Default is 30.	Maximum number of threads that handle client requests in the Data server. These threads accept requests from the Data server clients and queues them for execution in the database.
DB Connection Pool Size	Enter the number of connections in the pool. Default is 15. Minimum is 1.	Maximum number of database connections to open in a connection pool.

6. Select the **Debug** tab and perform the following steps:

- a. Select the **Ellipsis (...)** button next to **Trace Levels**.

Configuring databases

b. In the **Trace Levels** dialog box, check the following boxes.

Field	Recommended entry	Notes
idl	<ul style="list-style-type: none">● Check this box for development systems only.● Clear this box for production systems.	idl is a higher level trace that is more readable than msg. idl writes all method invocations to the log file.
flush	<ul style="list-style-type: none">● Check this box for development systems only.● Clear this box for production systems.	When the server writes to the log buffer, flush immediately writes the information to the log file. Flush does not wait for the buffer to fill before writing entries to the log file.

c. Select **OK**.

For information about the other options in the **Trace Levels** dialog box, see *IC Administration Volume 1: Servers & Domains*.

7. Select **OK** to save the Data server configuration.

8. Right-click on the Data server, and select **Start** from the drop-down list.

Data sources and Business Applications

Application Design Language (ADL) files contain the data models for Avaya IC databases and Business Applications, including tables, table sets, browsers, and modules. These files also contain the interface for one or more Business Applications.

For an out-of-the-box, non-customized Avaya IC installation, use ADL files to perform the following tasks:

- Configure Avaya IC databases
- Create Avaya IC data sources
- Generate Avaya Business Applications

About data sources

All Avaya IC components that must access a database use Avaya IC data sources. These components include servers, workflows, and agent applications. You create an Avaya IC data source when you generate an application from the application ADL file.

Even if your Avaya IC configuration does not include a Business Application, you must generate an application to create the following data sources:

- Repository data source
- Interaction Center data source

Repository and Interaction Center are only data sources. They do not have a user interface. Although you generate a Windows application to create the data sources, you cannot use repository or interaction_center as a Business Application.

The following table describes the typical data sources in an out-of-the-box Avaya IC installation.

Data Source	ADL File	Description
repository	repository.adl	Required for all Avaya IC systems. Used by the Directory server, Report server, and DUStore server for access to the IC Repository.
interaction_center	ccq.adl	Required for all Avaya IC systems. Used by all other Avaya IC servers, except the Letter Generator Workflow server, to access the database. This data source also handles most server-related transactions, such as workflows, that are not specifically related to a Business Application. Note: Use this data source for all Avaya IC systems that integrate with third party applications.
Report Wizard	repository.adl	Optional. Used by Avaya IC systems that include Report Wizard for mappings to retire EDUs to the IC Repository database.
ccq_contact	ccq.adl	Optional. Used only by Avaya IC systems that include Contact-based CallCenterQ.
ccq_cr_contact	ccq.adl	Optional. Used only by Avaya IC systems that include Contact-based CallCenterQ for Consumer Relations.

Data Source	ADL File	Description
ccq_request	ccq.adl	Optional. Used only by Avaya IC systems that include Request-based CallCenterQ.
ccq_cr_request	ccq.adl	Optional. Used only by Avaya IC systems that include Request-based CallCenterQ for Consumer Relations.
custq	custq.adl	Optional. Used only by Avaya IC systems that include CustomerQ.
hrq	hrq.adl	Optional. Used only by Avaya IC systems that include HRQ.

About Business Applications

Avaya Business Applications are optional components of Avaya IC. You can use these components to add additional features to your agent desktop, or to add reporting functionality for administrators.

The following table describes the Business Applications available in an out-of-the-box Avaya IC installation.

Application	ADL File	Description
Report Wizard	repository.adl	Sets mappings to retire EDUs to the IC Repository database. You must build the Report Wizard application to use or view data from EDUs. To generate Report Wizard, select reportwizard when you generate your Windows application.
Interaction Center	ccq.adl	Performs some administrative tasks for the CCQ database in Avaya IC systems that do not include a Business Application. To generate Interaction Center, select interaction_center when you generate your Windows application.
CallCenterQ	ccq.adl	Allows contact center agents to handle contacts with customers, to place and send out fulfillment orders, and to handle returns. Allows you to create and manage marketing campaigns. To generate CallCenterQ, when you generate your Windows application: <ul style="list-style-type: none"> ● Select ccq_contact for Contact-based CallCenterQ. ● Select ccq_request for Request-based CallCenterQ.

Application	ADL File	Description
CallCenterQ for Consumer Relations	ccq.adl	Allows contact center agents to handle customer complaints and to send out fulfillment packages. CallCenterQ for Consumer Relations is designed specifically for companies that provide consumer services or sell consumer packaged goods. To generate CallCenterQ for Consumer Relations, when you generate your Windows application: <ul style="list-style-type: none"> • Select ccq_cr_contact for Contact-based CallCenterQ for Consumer Relations. • Select ccq_cr_request for Request-based CallCenterQ for Consumer Relations.
CustomerQ	custq.adl	Allows agents in internal contact centers and help desks to handle issues quickly and intelligently. To generate CustomerQ, select customerq when you generate your Windows application.
HRQ	hrq.adl	Allows agents in human resource departments and employee service centers to provide personalized service over the telephone, on the Web, or through corporate intranets. To generate HRQ, select hrq when you generate your Windows application.

Creating IC Repository

IC Repository manages current and historical data in the form of Electronic Data Units (EDUs), Agent Data Units (ADUs), system configuration, and resource utilization statistics. This data includes agents, workgroups, queues, and tenants. IC Repository forms the structure that your database server needs to accept contact data from the Avaya IC EDU server and ADU server.

The following Avaya IC applications require IC Repository:

- Avaya Agent
- Web Management
- Email Management
- Telephony
- Business Applications, such as CallCenterQ, HRQ, or CustomerQ

Avaya OA queries the data that these Avaya IC components write in the IC Repository database and other Avaya IC databases. Avaya OA then reports on the results of the queries. For a diagram of how the Avaya IC and Avaya OA databases communicate and share data, see *IC Installation Planning and Prerequisites*.

Configuring databases

Before you build the IC Repository database:

- You must know the names that you will give to your IC Repository and CCQ databases.
- If you are creating IC Repository for the localization release of Avaya IC, you must enable Localization in Database Designer before you open the IC Repository ADL file. For more information, see [Enabling Database Designer for localization](#) on page 545.

To create IC Repository, complete the steps in the following topics:

1. [Building the IC Repository database](#) on page 90.
2. [Generating the IC Repository application](#) on page 98.
3. [Generating the Report Wizard application](#) on page 99.
4. [Updating the Directory server with IC Repository](#) on page 101.

Building the IC Repository database

The following instructions assume that you have reviewed and modified all components of the IC Repository ADL file in Database Designer. For information about the ADL file, see *IC Database Designer User Guide*.

Note:

If you use DB2 for your Avaya IC databases, you must copy the qdb2sp stored procedure library from the machine that hosts the primary ORB server to the DB2 installation hierarchy. If you do not copy the stored procedure library, Database Designer will not be able to configure the Avaya IC databases. For more information, see [Copying the stored procedure library - DB2 only](#) on page 78.

To build the IC Repository database, perform the steps in the following topics:

1. [Configuring the IC Repository database connection](#) on page 91.
2. [Configuring the IC Repository connection set](#) on page 96.
3. [Creating the IC Repository database](#) on page 97.

Configuring the IC Repository database connection

To configure the IC Repository database connection:

1. In Database Designer, select **File > Open**.
2. Open the IC Repository ADL file.

You can find this ADL file in

`IC_INSTALL_DIR\IC61\design\repository\repository.adl`

If you have enabled Database Designer for localization, select **OK** and ignore the warning about the missing ALF file. Database Designer will automatically generate the ALF file when you save the ADL file. For more information, see [Enabling Database Designer for localization](#) on page 545.

3. Expand **Components > Physical DB Connections** and select **repositoryDBConnection** in the tree pane.
4. In the DB Connection **Properties** tab, complete the fields in the General group as shown in the following table:

Property	Recommended entry	Notes
Timeout (sec)	Type the maximum number of seconds that the client application waits for a response to a database request before the application assumes the connection to the Data server is lost.	Default value is 60 seconds. If no response is returned within the specified time, the client application closes the connection to the Data server and returns an error. The client application attempts to create a new connection to the database on the next database request.

Configuring databases

Property	Recommended entry	Notes
Description	Type a description of the database connection, if desired.	You can leave this field empty.
Display Time	Select the display time setting.	<p>The display time option determines how Avaya IC handles the difference in time between the agent desktop machine and the time as reported by the Database for all database activities, such as select, insert, and update.</p> <p>The display time options are:</p> <ul style="list-style-type: none">● DBMSTIME – Select this option if you want the DateTime data to display as database time, and not adjusted to local time. With DBMSTIME, Avaya IC ignores the difference in time and does not apply the difference to any database activity.● LOCALTIME if you want the DateTime data to display as adjusted to local time on the client. With LOCALTIME, Avaya IC uses the difference in time, rounds it to the nearest half hour, and applies this difference to all database activity that involves date and time information.● HOSTTIME if you want the DateTime data to display as adjusted to the local host time, including small differences between system clocks. With HOSTTIME, Avaya IC uses the difference in time and applies this difference to all database activity that involves date and time information.

5. From the Database Type drop-down menu, select the type of database to which you want to connect.

Database Designer uses the selected database type to generate a SQL statement which can be applied to the database.

6. Complete the Mandatory fields for your database, as shown in the following table.

Database type	Property	Recommended entry	Notes
All database types	Data Server Type/Alias	Type the name of the primary Data server.	This server is the one that you created in Setting up the primary Data server on page 79. For example, defaults are: <ul style="list-style-type: none"> • DataServerMSSQL • DataServerOracle • DataServerDB2
SQL Server	Database server	Type the host name of the machine that hosts your database server.	For the default database instance, type the host name. For another database instance, type <code><machine>\<db_name></code> .
	Database Name	Type the name of the IC Repository database. For example, repository .	Avaya recommends that you use repository to reduce the possibility of a migration impact.
Oracle	TNS Name	Type the server alias from the tnsnames.ora file	For example, type support.xyzcorp.com.
	Database Name	Type the name of the Oracle user for the IC Repository database. For example, repository .	Avaya recommends that you use repository to reduce the possibility of a migration impact.
	Client Library Home Directory	Type the full directory path for the Oracle client on the machine that hosts the Data server.	For example, type <code>.../opt/oracle/8.1.7</code>
DB2	DB2 Database Name	Type the name of the DB2 database that includes the Avaya IC schema.	DB2 allows a maximum of eight characters for database names. For example, type db2IC.
	IC Schema Name	Type the schema name of the IC Repository database. For example, repository .	Avaya recommends that you use repository to reduce the possibility of a migration impact.
	Database Territory	Type the territory that represents the locale of the database that includes the IC Repository schema.	The territory defines the language and locale of the database. For more information, see the DB2 documentation.

Configuring databases

7. If necessary, complete the Optional fields for your database, as shown in the following table.

Database type	Property	Recommended entry	Notes
SQL Server	Database Location	Leave this field blank.	Identifies the logical space where the named database is stored. The SQL Server DBMS specifies the database location.
	Database Size	Leave this field blank.	The size of the database location specifies the amount of space that the configured application database occupies. The SQL Server RDBMS specifies the database size.
	Log Location	Leave this field blank.	Database-generated log files store cumulative transaction information. The SQL Server RDBMS specifies a default location for the database log.
	Log Size	Leave this field blank.	The size of the location for database log files specifies the amount of space that the database-generated log files can occupy. The SQL Server RDBMS specifies a default size for the database log.

Database type	Property	Recommended entry	Notes
Oracle	Default tablespace name	Type the name of the default tablespace where objects are created for the Avaya IC databases. For example, type IC_TS .	The database location identifies the logical space where the named database is stored. If you leave this field blank, and the Oracle RDBMS does not specify a database location, Oracle uses the "system" space to define the database. Caution: Configuring a database in the system space can crash your database.
	Default tablespace size	Type the number of bytes for the size of the default tablespace.	Caution: If you do not specify a default tablespace size here, and your RDBMS does not define the default tablespace size, the default tablespace can expand to use all available space.
	Temp tablespace name	Type the name of the tablespace that stores temporary files. For example, type T_CI_TEMP .	Temporary tables store database-generated intermediate sorting files and client session information for Oracle databases. If you do not specify a location for temporary tables, the location is specified by the Oracle RDBMS.
	Temp tablespace size	Type the number of bytes for the size of the tablespace that includes temporary tables.	The size of the location for temporary tables in Oracle databases specifies the amount of space that the temporary tables can occupy. If you do not specify the amount of space to be allocated for temporary tables, the size is specified by the Oracle RDBMS.

Configuring databases

Database type	Property	Recommended entry	Notes
DB2	Catalogued Node	Type the remote node on the machine that hosts the Data server.	Complete this field if you host your Data server on a different machine from the Avaya IC databases.
	Tablespace Name	Type the name of the tablespace used by the IC Repository database.	Complete this field if you created a dedicated tablespace that the IC Repository database uses. Note: Avaya OA requires dedicated tablespaces. For more information, see <i>Avaya OA Installation Planning and Prerequisites</i> .

8. Select **File > Save** to save the ADL file. Do not close the file.

Configuring the IC Repository connection set

To configure the connection set for IC Repository:

1. In Database Designer, expand **DB Connection Sets** and select **DefaultDBConnectionSet** in the tree pane.
2. Select **Application** from the **Logical DB Connections** list in the Connection Set **Properties** tab.
3. Make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select repositoryDBConnection .
Primary	Do not check this box.
Use External Database	Check this box.
Database Name	Type the name of your application database. This name must be the exact name that you will give your application database when you create it. For example, type <code>ccq</code> .

4. Select **Repository** from the **Logical DB Connections** list.

5. Make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select repositoryDBConnection .
Primary	Check this box.

6. Select **File > Save** to save the ADL file. Do not close the file.

Creating the IC Repository database

These steps perform the following:

- Create the schema that Avaya IC requires for IC Repository
- Seed IC Repository with the configuration data in the `seed.cfg` file.

You do not need to modify the IC Repository seed data. The following table describes the contents of the seed data for IC Repository:

Type of data	Description
Property data	System configuration data for IC Manager and Avaya Agent.
Initialization data	Default workgroup, queue, and tenant data for Web Management and Email Management. This data also includes templates you can use to create custom workgroups, queues, and tenants.
Mapping data	Default mapping rules for the Report Server. These rules tell the server how to write data from retired EDUs to IC Repository.

To create the IC Repository database:

1. In Database Designer, select **File > Database Administration**.
2. Select **defaultDBConnectionSet** from the **DB Connection Set** list.
3. Set the options as shown in the following table:

Field	Recommended entry
Configure	Select Configure .
Import Seed Data	Check this box.

Configuring databases

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

4. Select **Run** to configure the database and import the seed data.
Database Designer pauses briefly between configuring the database and importing the seed data.
5. Select **Close** to close the Database Administration screen. Do not close the ADL file.

Generating the IC Repository application

You generate the IC Repository application to initialize the database with the ADL and version information, and to create the Repository data source.

To generate the IC Repository application:

1. In Database Designer, select **File > Generate Windows Application**.
2. Check the following boxes to load the files to the database:
 - Messages
 - IC Scripts
3. Select **repository** from the **Name** list.
4. Type the path for the directory where you want Database Designer to store the application files.
For example, type `C:\Program Files\Avaya\IC61\apps`.
If you do not know the directory path, select the **Ellipsis (...)** button and navigate to the directory.
5. From the **DB Connection Set** drop-down list, select **defaultDBConnectionSet**.

6. If the fields in the following table do not have entries, re-type your IC Manager account and password.

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

7. Select **OK**.

Database Designer creates a new folder with the same name as the application in the target directory.

Generating the Report Wizard application

You use the Report Wizard to set mappings to retire EDUs to the IC Repository database. You must build the Report Wizard application to use or view data from EDUs.

Generate the Report Wizard application from the IC Repository ADL file.

To build the Report Wizard application:

1. In Database Designer, select **File > Generate Windows Application**.
2. In the **Generate Windows Application** dialog box, complete the fields as shown in the following table:

Field	Recommended entry
Messages	Check this box.
IC Scripts	Check this box.
Forms	Check this box.

Configuring databases

Field	Recommended entry
Help	<ul style="list-style-type: none"> ● Check this box. ● Type the path and file name for the help file, as follows: <code>IC_INSTALL_DIR\IC61\help\ReportWizard\Reports.chm</code>
Avaya Agent Layout	<ul style="list-style-type: none"> ● Check this box. ● Type the path and file name for the layout file, as follows: <code>IC_INSTALL_DIR\IC61\design\QConsole\avaya_agent_<lang>.cdl</code> where <lang> is the language in your Report Wizard desktop. For example, if your Report Wizard desktop includes Avaya Agent in English, select <code>avaya_agent_en.cdl</code> For more information about Avaya Agent layouts in non-English languages, see Configuring Avaya Agent for a supported language on page 548.

3. Select **reportwizard** from the **Name** drop-down list.
4. Type the path for the directory where you want Database Designer to store the application files.
 For example, type `C:\Program Files\Avaya\IC61\apps`.
 If you do not know the directory path, select the **Ellipsis (...)** button and navigate to the directory.
5. From the **DB Connection Set** drop-down list, select **defaultDBConnectionSet**.
6. If the fields in the following table do not have entries, re-type your IC Manager account and password.

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

7. Select **OK**.

Database Designer creates a new folder with the same name as the application in the target directory. This folder contains the Report Wizard ADL file.

Updating the Directory server with IC Repository

You must initialize the connection between the Directory server and IC Repository. Until this point in the configuration, your Avaya IC ORB environment obtained configuration information from the machine's local hard drive. After you update the Directory server, the Avaya IC ORB environment obtains and stores configuration information in IC Repository.

To update the Directory server for IC Repository:

1. On the **Server** tab in IC Manager, double-click the Directory server.
2. Select the **Directory** tab.
3. Select the IC Repository data source from the **IC Data Source** drop-down list. Select **OK**.
4. Stop and start the Directory server.
5. When the Alarm Monitor indicates that the Directory server started properly, select **Manager > Refresh**.

The Alarm Monitor should display a message such as "Server has started:: DS" followed by the IP address of the machine that hosts the Directory server, the port used to communicate with the server, and an identification string.

If you do not receive a Success message, perform the steps in [Troubleshooting the refresh in IC Manager](#) on page 510.

Note:

If you prefer to create and configure all databases at the same time, you can also create and configure the other databases used by your Avaya IC system at this time. For the Dialer database used by Outbound Contact, see [Configuring the Dialer database](#) on page 220. For the Avaya OA databases, see the *Operational Analyst Installation and Configuration*.

Creating the CCQ database

You must create and seed the CCQ database to run all Avaya IC components and applications.

The CCQ database collects, stores, and manages:

- Customer-specific data, including contact information and customer history information
- Application data, including information about Web Management, Email Management, or CallCenterQ

Note:

If you use DB2 for your Avaya IC databases, you must copy the qdb2sp stored procedure library from the machine that hosts the primary ORB server to the DB2 installation hierarchy. If you do not copy the stored procedure library, Database Designer will not be able to configure the Avaya IC databases. For more information, see [Copying the stored procedure library - DB2 only](#) on page 78.

To create the CCQ database, complete the steps in the following topics:

1. [Modifying the Avaya Agent layout](#) on page 102.
2. [Building the CCQ database](#) on page 102.
3. [Generating the Interaction Center application](#) on page 109.

Modifying the Avaya Agent layout

If your system does not include Avaya Agent, do not perform this step. Go to [Building the CCQ database](#) on page 102.

Avaya IC installs the default Avaya Agent layout in the following directory:

```
IC_INSTALL_DIR\IC61\design\QConsole\avaya_agent_<lang>.cdl
```

where *<lang>* represents the language that the agent will use on the desktop. For example, if the agent desktop includes Avaya Agent in English, select `avaya_agent_en.cdl`. For more information about Avaya Agent layouts in non-English languages, see [Configuring Avaya Agent for a supported language](#) on page 548.

The default layout includes task lists for all media channels, including Telephony, Web Management, Email Management, and Outbound Contact. To customize the Avaya Agent layout for your contact center, see *Avaya Agent Integrator's Guide*.

Building the CCQ database

To build the CCQ database, perform the steps in the following topics:

1. [Configuring the CCQ database connection](#) on page 103.
2. [Configuring the CCQ connection set](#) on page 107.
3. [Creating the CCQ database](#) on page 108.

Configuring the CCQ database connection

To configure the CCQ database connection:

1. If you do not already have the CallCenterQ ADL file open in Database Designer, select **File > Open**.

You can find this ADL file in

`IC_INSTALL_DIR\IC61\design\CallCenterQ\ccq.adl`

2. Expand **Components > Physical DB Connections** and select **ccqDBConnection** in the tree pane.
3. In the DB Connection **Properties** tab, complete the fields in the General group as shown in the following table:

Property	Recommended entry	Notes
Timeout (sec)	Type the maximum number of seconds that the client application waits for a response to a database request before the application assumes the connection to the Data server is lost.	Default value is 60 seconds. If no response is returned within the specified time, the client application closes the connection to the Data server and returns an error. The client application attempts to create a new connection to the database on the next database request.
Description	Type a description of the database connection, if desired.	You can leave this field empty.
Display Time	Select the display time setting that specifies how DateTime data from the database is presented in the client application.	The display time options are: <ul style="list-style-type: none"> ● DBMSTIME if you want the DateTime data to display as database time, and not adjusted to local time. ● LOCALTIME if you want the DateTime data to display as adjusted to local time on the client ● HOSTTIME if you want the DateTime data to display as adjusted to the local host time, including small differences between system clocks.

4. From the Database Type drop-down menu, select the type of database to which you want to connect.

Database Designer uses the selected database type to generate a SQL statement which can be applied to the database.

Configuring databases

5. Complete the Mandatory fields for your database, as shown in the following table.

Database type	Property	Recommended entry	Notes
All database types	Data Server Type/Alias	Type the name of the primary Data server.	This server is the one that you created in Setting up the primary Data server on page 79. For example, defaults are: <ul style="list-style-type: none"> ● DataServerMSSQL ● DataServerOracle ● DataServerDB2
SQL Server	Database server	Type the host name of the machine that hosts your database server.	For the default database instance, type the host name. For another database instance, type <code><machine>\<db_name></code> .
	Database Name	Type the name of the CallCenterQ database. For example, <code>ccq</code> .	Avaya recommends that you use <code>ccq</code> to reduce the possibility of a migration impact.
Oracle	TNS Name	Type the server alias from the <code>tnsnames.ora</code> file	For example, type <code>support.xyzcorp.com</code> .
	Database Name	Type the name of Oracle user for the CallCenterQ database. For example, <code>ccq</code> .	Avaya recommends that you use <code>ccq</code> to reduce the possibility of a migration impact.
	Client Library Home Directory	Type the full directory path for the Oracle client on the machine that hosts the Data server.	For example, type <code>.../opt/oracle/8.1.7</code>
DB2	DB2 Database Name	Type the name of the DB2 database that includes the Avaya IC schema.	DB2 allows a maximum of eight characters for database names. For example, type <code>db2IC</code> .
	IC Schema Name	Type the schema name of the CallCenterQ database. For example, <code>ccq</code> .	Avaya recommends that you use <code>ccq</code> to reduce the possibility of a migration impact.
	Database Territory	Type the territory that represents the locale of the database that includes the CallCenterQ schema.	The territory defines the language and locale of the database. For more information, see the DB2 documentation.

6. If necessary, complete the Optional fields for your database, as shown in the following table.

Database type	Property	Recommended entry	Notes
SQL Server	Database Location	Leave this field blank.	Identifies the logical space where the named database is stored. The SQL Server DBMS specifies the database location.
	Database Size	Leave this field blank.	The size of the database location specifies the amount of space that the configured application database occupies. The SQL Server RDBMS specifies the database size.
	Log Location	Leave this field blank.	Database-generated log files store cumulative transaction information. The SQL Server RDBMS specifies a default location for the database log.
	Log Size	Leave this field blank.	The size of the location for database log files specifies the amount of space that the database-generated log files can occupy. The SQL Server RDBMS specifies a default size for the database log.

Configuring databases

Database type	Property	Recommended entry	Notes
Oracle	Default tablespace name	Type the name of the default tablespace where objects are created for the Avaya IC databases. For example, type IC_TS .	The database location identifies the logical space where the named database is stored. If you leave this field blank, and the Oracle RDBMS does not specify a database location, Oracle uses the "system" space to define the database. Caution: Configuring a database in the system space can crash your database.
	Default tablespace size	Type the number of bytes for the size of the default tablespace.	Caution: If you do not specify a default tablespace size here, and your RDBMS does not define the default tablespace size, the default tablespace can expand to use all available space.
	Temp tablespace name	Type the name of the tablespace that stores temporary files. For example, type T_CI_TEMP .	Temporary tables store database-generated intermediate sorting files and client session information for Oracle databases. If you do not specify a location for temporary tables, the location is specified by the Oracle RDBMS.
	Temp tablespace size	Type the number of bytes for the size of the tablespace that includes temporary tables.	The size of the location for temporary tables in Oracle databases specifies the amount of space that the temporary tables can occupy. If you do not specify the amount of space to be allocated for temporary tables, the size is specified by the Oracle RDBMS.

Database type	Property	Recommended entry	Notes
DB2	Catalogued Node	Type the remote node on the machine that hosts the Data server.	Complete this field if you host your Data server on a different machine from the Avaya IC databases.
	Tablespace Name	Type the name of the tablespace used by the CallCenterQ database.	Complete this field if you created a dedicated tablespace that the IC Repository database uses. Note: Avaya OA requires dedicated tablespaces. For more information, see <i>Avaya OA Installation Planning and Prerequisites</i> .

7. Select **File > Save** to save the ADL file. Do not close the file.

Configuring the CCQ connection set

To configure the CCQ connection set:

1. In Database Designer, expand **DB Connection Sets** and select **DefaultDBConnectionSet** in the tree pane.
2. Select **CallCenterQ** from the **Logical DB Connections** list in the Connection Set **Properties** tab and make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select ccqDBConnection .
Primary	Check this box.

3. Select **Repository** from the **Logical DB Connections** list and make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select ccqDBConnection .
Primary	Do not check this box.

Configuring databases

Field	Recommended entry
Use External Database	Check this box.
Database Name	Type the name of your IC Repository database. This name must be the exact name that you gave your IC Repository database. For example, type <code>repository</code> .

4. If your Avaya IC system includes Outbound Contact, select **Dialer** from the **Logical DB Connections** list and make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select ccqDBConnection .
Primary	Do not check this box.
Use External Database	Check this box.
Database Name	Type the name of your Dialer database. This name must be the exact name that you will give your Dialer database. For example, type <code>dialer</code> .

5. Select **File > Save** to save the ADL file. Do not close the file.

Creating the CCQ database

These steps create the schema for the CCQ database and seed the database with the configuration data in the `seed.cfg` file. You do not need to modify the seed file.

The seed data contains system data for the Web Management servers and Web Self-Service. You must seed the CCQ database with this data if your system includes Web Management and Email Management.

To create the CCQ database:

1. Select **File > Database Administration**.
2. Select **DefaultDBConnectionSet** from the **DB Connection Set** list.

3. Set the options as shown in the following table:

Field	Recommended entry
Configure	Select Configure .
Import Seed Data	Check this box.

4. If the fields in the following table do not have entries, re-type your IC Manager account and password.

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

5. Select **Run** to configure the database.

Database Designer pauses briefly between configuring the database and importing the seed data.

6. Select **Close**. Do not close the ADL file.

Generating the Interaction Center application

You generate the Interaction Center application to initialize the database with the ADL and version information and to create the Interaction Center data source.

You also can use these instructions to generate all Business Applications, including CallCenterQ and CustomerQ.

If you are configuring a localized version of Avaya IC, you must import the localized seed data after you perform this step. For more information, see [Importing localized seed data](#) on page 550.

Configuring databases

To generate the Interaction Center application:

1. In Database Designer, select **File > Generate Windows Application** to open the **Generate Windows Application** dialog box.
2. Complete the fields as shown in the following table:

Field	Recommended entry
Messages	Check this box.
IC Scripts	Check this box.
Forms	Check this box.

3. If your Avaya IC system does not include a Business Application, complete the fields as shown in the following table:

Field	Recommended entry
Avaya Agent Layout	<ul style="list-style-type: none">● Check this box.● Type the path and file name for the layout file, as follows: <code>IC_INSTALL_DIR\IC61\design\QConsole\avaya_agent_<lang>.cdl</code> where <code><lang></code> is the language of the agent desktop. For example, if Avaya Agent is in English, select <code>avaya_agent_en.cdl</code>
EDU Layout	<ul style="list-style-type: none">● Check this box.● Type the path and file name for the layout file, as follows: <code>IC_INSTALL_DIR\IC61\design\QConsole\eduvviewer_<lang>.xsl</code> where <code><lang></code> is the language on the agent desktop. For example, if Avaya Agent is in English, select <code>eduvviewer_en_US.xsl</code>

For more information about Avaya Agent layouts in non-English languages, see [Configuring Avaya Agent for a supported language](#) on page 548.

4. Select **interaction_center** from the **Name** list.
5. Type the path for the directory where you want Database Designer to store the application files.
For example, type `C:\Program Files\Avaya\IC61\apps`.
If you do not know the directory path, select the **Ellipsis (...)** button and navigate to the directory.
6. From the **DB Connection Set** drop-down list, select **defaultDBConnectionSet**.

7. If the fields in the following table do not have entries, re-enter your IC Manager account and password.

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

8. Select **OK**.

Database Designer creates a new folder with the same name as the application in the target directory. This folder contains the Interaction Center ADL files.

9. Select **File > Exit** to close Database Designer if you do not need to create a Business Application.

Creating Business Applications

All Avaya IC implementations require an IC Repository database, a CallCenterQ database, and an Interaction Center data source. If your Avaya IC configuration includes a Business Application, you also must generate one or more of the following applications:

Application	ADL File	Action Required
CallCenterQ	<i>IC_INSTALL_DIR</i> \IC61\design\ CallCenterQ\ccq.adl	Generate the desired CallCenterQ application. For example, generate ccq_request or ccq_contact.
CustomerQ	<i>IC_INSTALL_DIR</i> \IC61\design\ CustomerQ\custq.adl	Create a CustomerQ database and generate a CustomerQ application.
HRQ	<i>IC_INSTALL_DIR</i> \IC61\design\ \hrq\ hrq.adl	Create an HRQ database and generate an HRQ application

Configuring databases

To create a database or generate an application for a Business Application, follow the directions in the following topics of [Creating the CCQ database](#). Substitute the appropriate names and locations for the CCQ-specific information.

1. For the localized version of CallCenterQ only, [Enabling Database Designer for localization](#) on page 545.
2. [Building the CCQ database](#) on page 102.
3. [Generating the Interaction Center application](#) on page 109.
4. For the localized version of CallCenterQ only, [Configuring Avaya Agent for multiple languages](#) on page 549.
5. For the localized version of CallCenterQ only, [Importing localized seed data](#) on page 550.

When you generate a business application, you must include the help file for that application. The following table describes where Avaya IC installs the help files.

Business Application	Location
CallCenterQ	<code>IC_INSTALL_DIR\IC61\help\CallCenterQ\ccq.chm</code>
CustomerQ	<code>IC_INSTALL_DIR\IC61\help\CustomerQ\custq.chm</code>
HRQ	<code>IC_INSTALL_DIR\IC61\help\Hrq\hrq.chm</code>

For more information about creating databases and generating applications for Business Applications, see *IC Database Designer User Guide*.

■ ■ ■ ■ ■ ■

Chapter 5: Configuring core servers

Avaya™ Interaction Center (Avaya IC) installation copies all Avaya IC server files to the target machines. You cannot copy only the files for selected servers on a machine. If your Avaya IC configuration requires only certain servers on a machine, run the Avaya IC installation on that machine to copy the server files, then configure only those servers that you want to host on the machine.

This section describes how to configure the core servers, including the Avaya IC domains and accounts required for these servers. This section includes the following topics that provide information and the steps that you need to follow to configure the core servers:

1. [Completing prerequisites for configuring servers](#) on page 113.
2. [Using Avaya IC domains](#) on page 115.
3. [Setting up administrative accounts](#) on page 119.
4. [Using system and sample workflows](#) on page 124.
5. [Configuring core servers](#) on page 125.
6. [Starting and stopping Avaya IC servers](#) on page 147.
7. [Starting and stopping Avaya IC services](#) on page 154.

Completing prerequisites for configuring servers

Before you configure the Avaya IC servers, make sure that you:

1. Run the Avaya IC installation to copy the server files to the machine where you plan to run the servers.

If you have not copied the server files, see [Installing Avaya IC servers](#) on page 49.

2. Install the Avaya IC Design & Administration tools.

You should install these tools on a dedicated machine that has network access to all server machines. For information on how to install these tools, see [Installing Avaya IC servers](#) on page 49.

Configuring core servers

3. Install and configure all prerequisite software and hardware. Depending on which servers you plan to configure, the prerequisites can include one or more of the following:

- Database
- POP3 and SMTP email servers and environment
- JDK
- Web servers

For information on which prerequisites you need for each machine, see *IC Installation Planning and Prerequisites*.

4. Start the Web server.

5. Configure the Avaya IC databases. For more information, see [Configuring databases](#) on page 77.

Creating sites

A site is a physical location that agents or servers can occupy in an Avaya IC system. For a single site system, you can use the Default site that is preconfigured.

For an Avaya IC system that includes multiple physical locations, create a site for each physical location. The site name should identify the physical location. Avaya IC uses the site information for routing decisions.

For more information about sites, see *IC Administration Volume 1: Servers & Domains*.

To create a site:

1. In IC Manager, select **Tools > Site**.
2. In the **Site Editor** dialog box, select **New**.
3. In the **Create Site** dialog box, complete the following fields:
 - a. Type a name for the site that identifies the physical location in the **Name** field.
 - b. Type a description of the site in the **Description** field.
 - c. Select **OK**.
4. In the **Site Editor** dialog box, select **OK**.

Using Avaya IC domains

At a minimum, an Avaya IC system should include the preconfigured domains installed with Avaya IC. Create multiple Avaya IC domains for your servers and agents to increase performance and allow Avaya IC to handle higher contact rates. For example, use a Voice domain for the servers used for Telephony.

To use domains, review and perform the steps in the following topics:

1. [Preconfigured domains](#) on page 115.
2. [Guidelines for Avaya IC domains](#) on page 116.
3. [Creating domains](#) on page 117.
4. [Establishing the failover order for domains](#) on page 118.

Preconfigured domains

Avaya IC includes several domains that are preconfigured with failover paths. The following table describes the preconfigured domains.

Preconfigured domain	Members	Failover path
Default	<ul style="list-style-type: none"> ● Alarm server ● Directory server ● License server ● ORB server 	<ul style="list-style-type: none"> ● Default
Email	None	<ul style="list-style-type: none"> ● Email ● Email_Helper ● Web ● Default
Email_Helper	None	<ul style="list-style-type: none"> ● Email_Helper ● Email ● Default
Prompter1	None	<ul style="list-style-type: none"> ● Prompter1 ● Default ● Voice1

Configuring core servers

Preconfigured domain	Members	Failover path
User1	None	<ul style="list-style-type: none">● User1● Prompter1● Voice1● Default● Email● Email_Helper● Web● Web_Helper
Voice1	None	<ul style="list-style-type: none">● Voice1● Default
Web	None	<ul style="list-style-type: none">● Web● Web_Helper● Email● Default
Web_Helper	None	<ul style="list-style-type: none">● Web_Helper● Web● Default
Website	None	<ul style="list-style-type: none">● Website● Web● Voice1● Default

Guidelines for Avaya IC domains

Avaya IC domains can span server machines at different locations and multiple domains can share the same server machine. A failover order is associated with each domain. The failover order defines how the members of a domain will failover to servers in other domains. If a server in one domain becomes unavailable, the requests to that server are routed to a server in the failover domain.

Tip:

Plan your failover policy carefully. If you specify a failover domain at a remote site, you must be sure that you have a high-bandwidth connection between the two sites or system performance will be adversely affected.

While you are deciding on the domains you need in your Avaya IC environment, consider the following guidelines:

- Use logical names that include identifying information, such as the site, the media channel, or the agent workgroup.
- Set up the failover paths for domain that include agents to ensure that the domains failover to one or more domains with an ORB server, Alarm server, and Directory server. If the domains that contain agents do not failover to domains with these servers, then Avaya Agent cannot function correctly.
- Do not assign an agent or a server to more than one domain. If you assign an agent or server to a second domain, IC Manager automatically deletes that agent or server from the first domain.
- Do not associate multiple servers of the same type with the same domain, with the possible exception of the ORB server. You can have multiple ORB servers in the same domain if those servers reside on different machines.

You should also assign agents to User domains. Typically, you should divide your agents between two User domains. If you configure the failover of each User domain to the other domain, then you will have a minimum amount of interruption if a Blender server or agent Workflow server fails.

For examples of how to divide Avaya IC servers between domains, see *IC Installation Planning and Prerequisites*. For more information about domains and failover, see *IC Administration Volume 1: Servers & Domains*.

Creating domains

You can add as many domains as you need to handle the agents and servers in your Avaya IC system. For suggested deployments, see *IC Installation Planning and Prerequisites*.

 **CAUTION:**

Do not delete the Default domain. Avaya IC requires the Default domain to function.

To create a domain:

1. Select **Domain** on the IC Manager toolbar.
2. Select **Servers** in the **Items** box at the top of the Domain Manager.
3. Right-click on **All Domains** and select **New**.

Configuring core servers

4. Type the name of the new domain.

The domain name can have a maximum of 32 characters or underscores, starting with an alphabetic character. It cannot have spaces. Use an underscore, if necessary.

5. Select **OK** to create the domain.

IC Manager displays the new domain name under **All Domains** on the left pane of the Domain Manager.

Establishing the failover order for domains

If a server becomes unavailable, failover redirects all requests from the clients of the unavailable server to an alternative server in a failover domain. A server's client can be an agent desktop application or another server.

A client or server logs in to the Avaya IC system by invoking a DS.Login request. At the time that this request is invoked, there is no information available to identify the group of the client or domain of the server making the request. Avaya IC components assume that the requester is in the Default domain.

While membership in a domain determines how the domain members communicate to servers, it also defines how failover is performed. We strongly recommend that you take the time to pre-plan your server failover strategy before proceeding.

You must ensure that your failover plan follows the deployment guidelines, including:

User domain failover - If your User domain does not include a secondary ORB server, this domain must failover to a domain that includes an ORB server, such as the Default domain.

Data server failover - When an agent logs in, Avaya IC cannot determine that agent's assigned domain until after the login request succeeds. Therefore, during the login process, Avaya IC components assume that all agents belong to the Default domain. To ensure that the Data servers handling login requests failover correctly, these servers must include the Default domain in their server group.

IC Email server failover - The domain that includes your IC Email server must failover to the domain that includes your WebACD server.

WebACD server failover - The domain that includes your WebACD server must failover to the domain that includes your IC Email server.

For more suggestions on how to plan your failover strategy, see the deployment scenarios in *IC Installation Planning and Prerequisites*. You can also establish failover order on a server-by-server basis. For more information, see *IC Administration Volume 1: Servers & Domains*.

To establish the failover order for a domain:

1. In the Domain Manager, select **Servers** in the **Items** box.
2. Select on the name of the domain for which you want to establish failover.
3. In the right pane, select the **Failover** tab.
4. Select the failover domain from the list in the **Available** pane.
5. Select **Add** to move the backup domain into the **Members** pane.

You can specify multiple domains to be used for failover. Avaya IC uses these failover domains in the order specified. Use the up-arrow and down-arrow located above the **Members** list to rearrange failover order. Do not move a failover domain above the primary domain.

6. Select **OK** to assign the servers in the domain for failover.

Setting up administrative accounts

Avaya IC requires two types of administrative accounts:

Non-human users - These administrative accounts are reserved for non-human Avaya IC users, such as servers and IVRs. For guidelines, see [Using administrative accounts for non-human users](#) on page 120.

Human users - These administrative accounts are reserved for human Avaya IC users, such as supervisors and managers. For guidelines, see [Using administrative accounts for human users](#) on page 122.

This section describes the minimum number of administrative accounts required to install and configure Avaya IC, and how to create those accounts. Topics include:

- [About Avaya IC passwords](#) on page 120.
- [Using administrative accounts for non-human users](#) on page 120.
- [Using administrative accounts for human users](#) on page 122.
- [Creating administrative accounts](#) on page 122.

For more information about administrative and agent accounts, see *IC Administration Volume 2: Agents, Customers, & Queues*.

About Avaya IC passwords

All Avaya IC accounts, including administrative accounts, must have passwords that meet the requirements that you specify in the Agent/Security properties for the workgroup or for individual agents. These requirements can include:

- Maximum length
- Minimum length
- Minimum number of alphabetic characters
- Minimum number of numeric characters

All passwords that you use for administrative users, including non-human users, must meet these requirements.

For more information, see *IC Administration Volume 2: Agents, Customers, & Queues*.

Using administrative accounts for non-human users

Some Avaya IC components, such as the Configuration Tool and some servers, require administrative accounts. These accounts should not be used by a human Avaya IC user.

 **Important:**

Configure all Avaya IC accounts for non-human users to ensure that the password for these accounts does not expire or change.

These administrative accounts are non-human accounts for Avaya IC components only. You do not need to create these accounts in a User domain. When you create an administrative account for an Avaya IC server or component, such as Outbound Contact or the ICM server, the account must be in either of the following domains:

- The same domain as the component that uses the account
- A domain in a failover path from the domain of the component

The following table describes the minimum number of administrative accounts your Avaya IC system requires for non-human Avaya IC users.

 **Important:**

Change the password on all accounts created by the seed data.

Account	Component	Description	Login
Administrative	Avaya IC servers	<p>Create an administrative account in:</p> <ul style="list-style-type: none"> • The same domain as the component that uses the account <p>OR</p> <ul style="list-style-type: none"> • A domain in a failover path from the domain of the component <p>Note: Do not use the Admin account created by the seed data, or an account that you use to log in to IC Manager.</p>	As created by user. Not available in seed data.
Admin	IC Manager login	<p>Administration account that you use to log in to IC Manager and the Configuration Tool when you configure the system.</p> <p>Domain: User Security: Administrator</p> <p>Note: IC Manager forces you to change the password for this account when you use IC Manager.</p>	Login: Admin Password: admin
website	Configuration Tool and Avaya IC servers	<p>The website account is created by the seed data.</p> <p>The Avaya IC components in the DMZ use this account to access other Avaya IC servers.</p> <p>Domain: Website Security: Operator</p> <p>Use this account to configure the Website Web application and Web Management services.</p>	Login: website Password: website
icmbridge	ICM Bridge	<p>The icmbridge account is created by the seed data. This account has Operator privileges.</p> <p>Include a Workflow server in the same domain as the ICM account.</p> <p>Domain: Website Security: Operator</p> <p>This is the Avaya IC Login account that you use to configure the Attribute server. For more information, see Creating the Attribute server on page 252.</p>	Login: icmbridge Password: icmbridge

Using administrative accounts for human users

All human Avaya IC users who require administrative privileges, such as access to IC Manager and other Design & Administration Tools, require administrative accounts. These accounts should not be used by a non-human Avaya IC user. You should require that the Avaya IC user regularly change the password for these accounts.

When you create an administrative account for a human Avaya IC user, the account must be in a User domain. You can create an administration domain that is restricted to administrative accounts for human users.

Creating administrative accounts

You must create the domain for the administrative accounts before you perform these steps.

You may want to create an additional administrative account in the User domain that can communicate with the parent directory server. This account is useful if you have a problem with the configuration of one or more domain. After you configure a temporary account, log in to IC Manager and confirm that you can use this account for administrative access.

To create administrative accounts:

1. In IC Manager, select the **Agent** tab.
2. Select **Administrator** in the left pane.
If **Administrator** is not visible in the left pane, select **Manager > Refresh** to update the information that is available in IC Manager.
3. Select **Agent > New**.
4. Select the **General** tab and complete the following fields:

Field	Description
First Name	Required field Type agent's first name.
Last Name	Required field Type agent's last name.
Preferred Name	Required field Type agent's preferred name.
Employee ID	Type the agent's company employee ID (optional).

Field	Description
Login ID	Required field Type a login ID that the agent uses for all Avaya IC applications.
Domain	Required field Select the appropriate domain from the list.
Task Load	Required field Set to 0.
Task Ceiling	Required field. Set to 0.
Site	Select a site from the drop-down list. Note: Avaya IC uses the Site to compile statistics for groups or agents or queues.

5. Select the **Security** tab and complete the fields as shown in the following table:

Field	Recommended entry
Password	Type the password for this account.
Confirm	Re-type the password for this account.
Force password change on login	Perform one of the following: <ul style="list-style-type: none"> ● Check this field for human Avaya IC users ● Do not check this field for non-human Avaya IC users
Disable login	Do not check this field.
Administrator	Check this field. Note: Do not check any of the other roles.

6. Select **OK**.

Using system and sample workflows

When you install Workflow Designer, you also install system and sample workflows. Avaya IC installs the project folders for system and sample workflows in subfolders of the following directory:

```
IC_INSTALL_DIR\IC61\design\IC\Flows\
```

 **CAUTION:**

Do not change a system workflow. If you change a system workflow, one or more components of your Avaya IC system will not function.

Sample workflows

The following table describes the sample workflows for Avaya IC.

Workflow project	Description
Blender	Required for all installations.
ICEmail	Required for installations that include Email Management.
Prompter	Required for installations that include Prompter.
TS	Required for all installations that include Telephony or Voice Chat.
WACD	Required for all installations that include Web Management or Email Management.
IVChat	Required for all installations that include Voice Chat.

For a complete list of the workflows in these projects, including the directories where Avaya IC installs the workflows, see *Avaya Workflow Designer User Guide*.

Using sample workflows

You can use the sample workflows to set up and test your Avaya IC system. When you test your system, review the settings of the sample workflows for the media channels and components in your Avaya IC system.

You can customize these workflows to meet the business requirements of your contact center. For example, the Email Analysis flows in the ICEmail project contain three sample routing hints for testing purposes. You must review and change these properties to routing hints that meet your contact center's needs.

After you customize the sample workflows, recompile the workflows and load them in the database. For more information, see *Avaya Workflow Designer User Guide*.

Workflows in Avaya IC seed data

The Avaya IC seed data includes compiled system and sample workflows for all projects. When you created the CCQ database, you imported the compiled workflows with the seed data and stored them in the database.

You must update some of these workflows, such as the workflows in the TS project before you can use them in your Avaya IC. Instructions for updating the sample workflows are in the appropriate chapter.

Configuring core servers

The Avaya IC installation program automatically created and installed some of the core servers when you started the primary servers (see [Creating the primary server environment](#) on page 58).

Use caution if you modify server configuration parameters. Errors can seriously impact the performance of your Avaya IC system.

This section describes the core servers. This section also describes the steps you need to perform to configure the remaining core servers. You have already created and configured some core servers. Before you configure media channels and media-specific servers, perform the steps in the following topics to configure the remaining core servers:

- [Avaya IC core servers](#) on page 126.
- [Server naming guidelines](#) on page 128.
- [Recommended tuning parameters for Avaya IC servers](#) on page 128.

Configuring core servers

- [Creating an ADU server](#) on page 129.
- [Creating a DUStore server](#) on page 130.
- [Creating an EDU server](#) on page 132.
- [Creating a Report server](#) on page 134.
- [Creating a Workflow server](#) on page 135.
- [Creating a Blender server](#) on page 140.
- [Creating an HTTP Connector server](#) on page 142.
- [Creating a Notification server](#) on page 144.

Note:

If you reconfigure a running server in IC Manager, stop and restart the server for the settings to take effect. Do not check the Auto start option until you successfully add and configure the servers and start them manually.

These topics only contain information about required server parameters. For more detailed information, see *IC Administration Volume 1: Servers & Domains*.

Avaya IC core servers

All components of Avaya IC require the following core servers:

ORB server - Oversees and starts other servers. This server is also known as the Object Request Broker server.

You must install an ORB server on all machines that host Avaya IC servers. If your Avaya IC system includes multiple server machines, install a secondary ORB server on each of the secondary machines.

Data server - Provides access to your database server for all Avaya IC applications and users. The Data server is specific to the type of database you use in your Avaya IC system. All Avaya IC server and client applications use the Data server to communicate with your database. The Data server uses the Avaya IC account for each component or user to link the Avaya IC components and the database server.

All Data servers support connection pooling.

ADU server - Holds up-to-date information on all active agent and queue data units (ADUs) in the Avaya IC system. This server is also known as the Agent Data Unit server.

Alarm server - Receives and propagates alarms to interested client applications. This server notifies interested clients of problems.

Blender server - Controls agent availability across the different channel types and monitors ADU change events. You can configure this server to run blender flows when any agent state changes. You can also configure this server to raise alarms or run workflows when agent or queue ADUs exceed their thresholds.

Directory server - Looks up agent, workgroup, queue, tenant, and server configuration information for other servers in the Avaya IC system. IC Manager uses this server for administrative purposes.

DUStore server - Serves as the backup store for the data unit servers (ADU server and EDU server). Allows idle data units to be pushed out of memory and into the data store so that active data units can use the available memory. This server provides back up in cases of recovery from failure, because it allows data units to persist across server shutdowns. You must install this server when you use the ADU and EDU servers. This server is also known as the Data Unit persistent Store server.

EDU server - Maintains all active Electronic Data Units (EDUs). Each EDU represents a contact in the Avaya IC system. All Avaya IC components use this server to track and update contact information. This server is also known as the Electronic Data Unit server.

Create an EDU server for each of the following media channels in your Avaya IC system:

- Chat
- Email
- Voice

HTTP Connector server - Allows Avaya IC server requests to be made as HTTP requests and serves Prompter pages. This server also handles customer account management and authentication for Web Self-Service. This server is a generic HTTP interface server.

Notification server - Allows Avaya IC components to schedule future events, such as the delivery of messages or alerts to agents. Events can be scheduled by an agent or based on the escalation and action rules defined in an Avaya Business Application.

Report server - Records data unit information for the EDU and ADU servers. The reporting tools use this information to generate historical reports. When Avaya IC terminates an EDU or ADU, the data unit is passed to the Report Server. This server may execute mapping rules to convert an EDU into the appropriate format for reporting. The Report Server writes its information into the IC Repository database.

Workflow server - Processes workflows that route contacts and implement business rules. The Workflow server can handle specific tasks, such as media routing, agent blending, agent scripts, letter generation, and generic business logic. Workflows can be executed by direct invocation or as a result of receiving events from another server.

You can distribute these responsibilities across multiple Workflow servers to maximize performance and response from the server. For example, if your Avaya IC system includes multiple server machines, configure dedicated Workflow servers for each media.

Server naming guidelines

Under certain circumstances, the Workflow server fails to connect with a server that uses the server type as the name of the server. For example, if an ADU server is named "ADU" or a Web Advocate Adaptor server is named "WAA".

To ensure optimal functioning of your Avaya IC system, Avaya recommends that you use the following naming conventions for your Avaya IC servers:

- Always use a unique server name of up to 32 characters long with no spaces.
- Name your Data servers `Data_<databasetype>_<domain>`. For example, **Data_Oracle_Default**.
- In a single site environment, name all other servers `<servername>_<domainname>`. For example: **ADU_User1**.
- In a multi-site environment, name all other servers `<servername>_<sitename>_<domainname>`. For example: **ADU_London_User1**.
- Do *not* set the server name to be the same as the server type, or Avaya IC may encounter errors during operation. For example, use **TS_Voice1** as the name of your Telephony server, not just **TS**.

 **Important:**

Do not use the name **localVDU** or **localADU** for EDU or ADU servers. These are used when the servers are taken off-line to prevent communication with other EDU and ADU servers.

Recommended tuning parameters for Avaya IC servers

A set of recommended tuning parameters to enhance the performance of an Avaya IC system is available in *IC Administration Volume 1: Servers & Domains*.

After you install the development Avaya IC system as described in this document:

1. Review those tuning parameters.
2. Verify the expected contact volume in the production system.
3. Test the recommended settings for the tuning parameters to find the optimal settings for the production system.

Creating an ADU server

Typically, an Avaya IC deployment includes more than one ADU server.

All agent and human administrative accounts should be in User domains. Avaya recommends that you create at least one separate domain for administrative accounts. Therefore, after you change the domains of the Administrative accounts, as described in [Setting up administrative accounts](#) on page 119, you must create ADU servers in each domain that includes agents, then delete the ADU server in the Default domain.

If the Avaya IC system includes an ADU server that handles queue ADU entries for a WebACD server, configure that ADU server not to accept failover requests from an ADU servers that handles agent accounts. For more information, see *IC Administration Volume 1: Servers & Domains*.

For Business Advocate the ADU server contains statistics for service classes.

An ADU server must be able to communicate directly with the parent Directory server. For more information about the parent Directory server, see [Creating a secondary Directory server](#) on page 167.

To create an ADU server:

1. In IC Manager, select **Server > New**.
2. Select **ADU** from the list of servers.
3. Select **OK**.
4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	ADU_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Voice</code> from the drop-down list if the server is in the Voice domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **ADU** tab.

Configuring core servers

6. In the **Idle Time (min)** field, make sure that the number of minutes entered in this field is greater than the length of a typical agent's shift.

For example, if an agent in your contact center typically works a nine hour shift (including lunch), type 540 in the **Idle Time (min)** field.

 **Important:**

If an agent is logged into an Avaya IC agent desktop application for longer than the idle time set in the ADU server, the ADU for the agent will timeout. An ADU timeout can cause problems, such as inconsistent data in Avaya OA reports and the inability to defer email contacts. To avoid this issue, ensure that the idle time is always longer than a typical agent's shift and that all agents log out of Avaya IC at the end of their shift.

You can use the default settings for the ADU server to get your system up and running. For more detailed information about these parameters and how to customize them for your system, see *IC Administration Volume 1: Servers & Domains*.

7. Select **OK** to save your configuration settings.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Creating a DUStore server

All Avaya IC systems that include Email Management require a DUStore server. You can also add a DUStore server for Telephony or Web Management. For more information about deployment scenarios for Avaya IC servers, see *IC Installation Planning and Prerequisites*.

The Avaya IC installation program does not automatically add this server.

To create a DUStore server:

1. In IC Manager, select **Server > New**.
2. Select **DUStore** from the list of servers.
3. Select **OK**.

4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	DUStore_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	Include the DUStore server in the same domain as the EDU server for the channel. For example, select <i>Email Helper</i> from the drop down list if this server handles email contacts. For more information about recommended domains, see <i>IC Installation Planning and Prerequisites</i> .
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **DUStore** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the IC Data Source for the IC Repository database.	For example, if you used the default name to create the IC Repository application, the data source name is <i>repository</i> .
Default deletion age (Days)	Enter the number of days that Avaya IC holds an EDU in absence of other information. Default is 60 days.	Avaya IC After this period, the DUStore deletes the EDU from the DUStore table and retires the EDU to the database.
Deleted per scan	Enter the number of EDUs the DUStore retires to the database when it scans the system for expired EDUs. Default is 1000.	

Configuring core servers

Field	Recommended entry	Notes
Scan Interval (min)	Enter the amount of time, in minutes, between server scans for expired EDUs. Default is 15.	Higher values may save some CPU time; lower values make for more predictable behavior during prototyping and testing. When testing, assume that the other timers in the EDU could be off by as much as (this interval + 1) to start.
Purge Alarm	Check to raise an alarm if a delete scan finds any EDUs that meet the criteria for deletion and retirement to the database. Default is checked.	

6. Select **OK** to save your configuration settings.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Creating an EDU server

Create at least one EDU server for each media type in your Avaya IC system. For example, using the preconfigured domains, if your Avaya IC system includes Telephony, Web Management, and Email Management, create the following EDU servers:

- VoiceEDUserver in the Voice1 domain
- WebEDUserver in the Web_Helper domain
- EmailEDUserver in an Email_Helper domain

The Avaya IC installation program does not automatically add these servers.

 **CAUTION:**

Avaya IC requires that you place each EDU server in a separate Avaya IC domain. An Avaya IC domain cannot include more than one EDU server. For more information about recommended deployment scenarios and guidelines for the EDU server, see *IC Installation Planning and Prerequisites*.

To create an EDU server:

1. Select **Server > New** in IC Manager.
2. Select **EDU** from the list of servers. Select **OK**.

3. In the **Initialize EDU** dialog box, select the media type from the drop-down list. Select **OK**.
4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	EDU_<domain>_<media>	Include the domain in the server name to identify the server. For example, if you must create an EDU server for voice media, type EDU_Voice1_Voice.
Domain	Select the Avaya IC domain for the server from the drop-down list.	The domain for the EDU server depends upon which channel the EDU server handles. For voice contacts, add the EDU server to the same domain as the associated Telephony server. For chat contacts and email contacts, add the EDU server to a "Helper" domain. For example, select <code>Email_Helper</code> from the drop-down list if this server handles email contacts. For more information about recommended domains, see <i>IC Installation Planning and Prerequisites</i> .
Host	Select the machine's IP address from the drop-down list, or type in the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **EDU** tab and review the default settings.

You can use the default settings for the EDU server to get your system up and running. For more detailed information about these parameters and how to customize them for your system, see *IC Administration Volume 1: Servers & Domains*.

6. Select **OK** to save your configuration settings.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Creating a Report server

The Report server writes values from EDUs to the IC Repository database. Avaya OA uses these values to generate historical reports.

The Report server maps the EDU values to database fields. The server uses field expressions from the `fieldexpressions` table in IC Repository. Database Designer loaded the creation rules and field expressions in the database when you imported seed data to the IC Repository database (see [Creating the IC Repository database](#) on page 97).

The Avaya IC installation program does not automatically add this server.

 **CAUTION:**

Solaris runs the HTTP Input Method Server (`htt_server`) on port 9010 by default. This port assignment creates a conflict with any Avaya IC server that you configure to run on port 9010. To avoid the conflict, you can update `htt_server` to use a different port, or not assign an Avaya IC server to port 9010. In a typical installation, with the primary ORB server on port 9001, IC Manager automatically assigns port 9010 to the Report server.

If you set the Server Trace Level field on the Debug tab to 10, the Report server saves text files with information about each EDU in the `IC_INSTALL_DIR\IC61\temp` directory. The Report server names these text files `<eduid>.txt`. Avaya IC does not automatically delete these files. You must manually delete them when they are no longer needed for debugging. If you do not reset the Server Trace Level, the files will continue to accumulate in the `IC_INSTALL_DIR\IC61\temp` directory.

To create a Report server:

1. Select **Server > New** in IC Manager.
2. Select **Report** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Enter a name for the Report server. For example, <code>Report_<domain></code>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Voice1</code> from the drop-down list if the server is in the Voice domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **Report** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the IC Data Source for the IC Repository database.	For example, if you used the default name to create the IC Repository application, the data source name is <code>repository</code> .

5. Select **OK** to save your configuration settings.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Creating a Workflow server

The Avaya IC installation program does not automatically add a system Workflow server. Typically, an Avaya IC system includes more than one Workflow server.

To create the Workflow server, perform the steps in the following topics:

1. [Configuring multiple Workflow servers](#) on page 135.
2. [Creating a Workflow server](#) on page 136.
3. [Completing the Workflow server configuration](#) on page 140.

Configuring multiple Workflow servers

If your Avaya IC system includes Letter Generator, you must configure a separate Workflow server to run Letter Generator workflows. You need a separate workflow server because Letter Generator workflows use a different data source to access the database than the other workflows.

For a large Avaya IC system that has a high contact delivery rate and that hosts servers across multiple machines, you can distribute the workflow responsibilities across multiple Workflow servers to maximize performance and response.

For example, you can set up the following workflow servers to process contacts in the different media channels and to handle the different agent-related tasks:

Workflow server for the voice channel - Runs voice contact routing workflows to process incoming and outbound voice contacts, and runs the Incoming Voice Chat workflow. These Workflow servers are in a voice domain. For more information, see [Configuring a Workflow server for Telephony](#) on page 211.

Configuring core servers

Workflow server for the chat channel - Runs web contact routing workflows to process incoming chat contacts, and runs the Voice Chat workflow. These Workflow servers are in a Web domain. For more information, see [Configuring a Workflow server for Web Management](#) on page 274.

Workflow server for the email channel - Runs email contact routing workflows and email analysis workflows to process incoming and outbound email contacts. These Workflow servers are in an email domain. For more information, see [Configuring a Workflow server for Email Management](#) on page 336.

Workflow server for agent prompting - Runs Prompter workflows and agent script workflows. For information on how to configure a Workflow server to run Prompter flows, see [Creating a Workflow server](#) on page 136.

Workflow server for agent searches and transfers - Runs agent search and transfer workflows for the Unified Agent Directory. These Workflow servers are in a User domain. For more information about configuration for these servers, see [Configuring a Workflow server for the Unified Agent Directory](#) on page 393.

Workflow server for Letter Generator - Runs the workflows and processes tasks for Letter Generator. For more information, see [Configuring a Workflow server for Letter Generator](#) on page 464.

Note:

The Letter Generator Workflow server shares the same Windows `temp` file as the Tomcat server used by Letter Generator. You must install the Workflow server and the Web application for Letter Generator on the same physical machine.

Creating a Workflow server

These instructions create a basic Workflow server. You must configure this Workflow server to handle the appropriate tasks. For more information, see [Configuring multiple Workflow servers](#) on page 135. For more detailed information about parameters in the Workflow server, see *IC Administration Volume 1: Servers & Domains*.

To create a Workflow server:

1. In IC Manager, select **Server > New**.
2. Select **Workflow** from the list of servers.
3. Select **OK**.

4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Workflow_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Users1</code> from the drop-down list if the server is in the Users1 domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **Workflow** tab and perform the following steps:

- a. From the **IC Data Source** drop-down list, select the data source that this Workflow server uses.

Most Workflow servers use the Interaction Center data source. The default name for this data source is `interaction_center`. This is the data source that you created in [Generating the Interaction Center application](#) on page 109.

Note:

For a Workflow server that runs Prompter flows and agent script workflows, the IC Data Source must match the database that was used to build and store the workflows.

- b. Review the remaining fields on the tab, as shown in the following table. You will need to complete some of these fields, such as the **Synchronous Startup Flows**, when you create Workflow servers for specific tasks.

Field	Recommended entry	Notes
Reload Flows	Select this button to reload workflows in the Workflow server.	You can choose to update file-based workflows and workflows stored in the database, and whether to force an immediate reload rather than wait for running workflows to complete execution. Select Force immediate reload to reload all currently loaded flows even if the version numbers are the same.

Configuring core servers

Field	Recommended entry	Notes
Unload Flow	Select this button to unload a workflow from the server. You will be prompted to type the workflow name.	When the workflow is next requested, the latest version of the workflow will be loaded from the Database or File System. If the workflow is currently running, it will complete before being unloaded. You must manually increment the workflow version number. If the version has not been incremented, the workflow is not reloaded.
Run Flow	Select this button to run a workflow that updates the variable that contains queue-workflow information.	Type the workflow name. The queue-workflow information is required by contact routing flows in a Blender environment. Update the variable whenever any change is made to the queue.
IC Data Source	Select a data source from the drop-down list.	For most Workflow servers, select the Interaction Center data source. If you used the default name, select <code>interaction_center</code> . For the Workflow server used by Letter Generator, select the data source for your Business Application. For example, if your Avaya IC system includes Request-based CallCenterQ, the default name for the data source is <code>ccq_request</code> .
Preload Flows	Select the Ellipsis (...) and specify the workflow to be loaded when the server is first started.	If you have a workflow that must react very quickly when the event triggering it is received by Avaya IC, use the Preload Flows option to have that flow ready and waiting in memory. When the event actually occurs, Avaya IC can run the flow without having to load it first. Syntax: <code>projectname.flowname</code> Note: Preloading a large flow can slow down server startup.
Synchronous Startup Flows	Select the Ellipsis (...) and specify the workflow to be loaded before the startup workflows and before the server accepts requests.	For example, Workflow servers that run contact routing workflows need to run <code>web_routing.update_qw_cache</code> as a synchronous startup workflow.

Field	Recommended entry	Notes
Startup Flows	Select the Ellipsis (...) and specify the workflow to be run when the Workflow server starts.	These workflows are run in addition to Initial Startup Script. Workflows in this list are not guaranteed to execute in any particular order in relation to themselves, Initial Script, or arriving requests. Note that the Initial Script field also specifies a flow to be started, but that parameter can set only one flow. You can specify multiple Startup Scripts.
Semaphores	Select the Ellipsis (...) and specify the list of semaphores used by the workflows.	For more information about semaphores, see <i>Avaya IC Media Workflow Reference</i> .
Directory tables	Select the Ellipsis (...) and specify the Directory server tables to be preloaded in memory at startup.	
Event Threads	Accept the default or type a number of threads.	The default entry is 10. The number of threads that are listening and available to process events sent to the server.
Enable Heap Validate	Do not check this field unless: <ul style="list-style-type: none"> ● Instructed by Avaya Technical Support ● Debugging a workflow 	This field is for debugging workflows only. Impacts performance of the Workflow server if checked. If the Workflow server fails when it runs a workflow, use this field to check each block as the workflow runs to ensure that the block does not corrupt the Heap.

6. Select **OK**.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Completing the Workflow server configuration

For the Agent Prompting Workflow server, configure your agent desktop and your agents for Prompter and wrapup functionality. A sample Prompter workflow is included in the seed data.

This sample workflow is only intended to help you test Prompter and agent wrapup. For information about how to create and modify Prompter workflows, see *Agent Script Workflow Reference*.

You will complete the configuration of other Workflow servers when you configure the media channels and other components, such as the Unified Agent Directory, in your Avaya IC system. You do not need to perform these steps at this point in your installation and configuration.

Creating a Blender server

The Blender server controls agent availability across the different channel types and monitors ADU change events.

The Blender server depends on the Workflow server. Therefore, you cannot configure the Blender server if you have not already performed the steps in [Creating a Workflow server](#) on page 135. If the Blender server connects to a Workflow server for a media channel, create the Blender server after you configure the Workflow server.

Do not assign a Blender server to a domain that cannot be reached by agents. If agents cannot reach the Blender server, the Avaya IC system will operate incorrectly. The domain for a Blender server must meet **one** of the following guidelines:

- The Blender server must be in the same domain as a Workflow server and an ADU server.
- OR
- The failover path for the domain of the Blender server must include a Workflow server and an ADU server.



Important:

If the Blender server domain does not include a Workflow server and an ADU server, or those servers are not in the failover path for the Blender server, you will not be able to start the Blender server. For more information, see *IC Installation Planning and Prerequisites*.

The Avaya IC installation program automatically adds this server.

To create a Blender Server:

1. In IC Manager, select **Server > New**.
2. Select **Blender** from the list of servers.

3. Select **OK**.
4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Blender_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **Blender** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
WorkFlow Server	Select the Workflow server used by this Blender server from the drop-down list.	If you only have one Workflow server and one Blender server, select <code>Workflow_system</code> . If your configuration includes multiple Workflow and Blender servers, select the Workflow server that you created to work with this Blender server.
Flow Set	Enter the name of the workflow project that contains the Blender flows.	The default name is <code>blender</code> .
Initialization Flow	Enter the name of the workflow that initializes the Blender server.	Default name is <code>initialization</code> .
Initialization Data Name	You can leave this field blank.	Optional field. The initialization data name contains values to be added to <code>indata</code> when <code>InitRule</code> is run. <code>InitRule</code> has an <code>indata</code> Event and <code>outdata</code> Event that fill in <code>indata</code> with a string (<code>InitName</code>) and <code>seqcouple</code> (<code>InitData</code>).
Initialization Data	You can leave this field blank.	Optional field. The name to add to <code>indata</code> when <code>InitRule</code> is run.

Configuring core servers

Field	Recommended entry	Notes
Client Login Flow	Enter the name of the Client Login workflow.	Default name is clientlogin.
Client Logout Flow	Enter the name of the Client Logout workflow.	Default name is clientlogout.

6. Select **OK** to save your configuration settings.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Creating an HTTP Connector server

The Avaya IC installation program does not automatically add this server.

Letter Generator and Prompter use the HTTP Connector server. You can create separate HTTP Connector servers for each of these features. You can host more than one HTTP Connector server on the same machine, if the HTTP Connector servers use different HTTP ports.

To create an HTTP Connector server:

1. Select **Server > New** in IC Manager.
2. Select **HTTP Connector** from the list of servers. Select **OK**.
3. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	HTTPConnector_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **HTTP Connector** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the application name associated with the server. This name should match the IC Data Source setting for the corresponding Workflow server.	If you used the default name, select <code>interaction_center</code> . You created this data source in Generating the Interaction Center application on page 109.
Workflow Server	Select the name or type of the Workflow server that this connector should use to execute Workflows and Prompter flows.	
Doc Directory	Accept the default or enter a new directory path.	The directory where the server looks for java script and error pages to serve to prompter and agent applications. Always consider as the relative path from the <code>AVAYA_IC61_HOME</code> .
Start Page	Accept the default or enter a new file name.	The name of the file that the Prompter serves when a client asks for a director.
HTTP Port	Enter 9170 for default port.	The server uses this port for HTTP requests. If you must change this port, see Ports used by Avaya IC components on page 28 for a list of the default port numbers used by the other Avaya IC servers. Port conflicts can cause serious problems within the Avaya IC system. Note: If you are running multiple HTTP Connector servers on the same machine, ensure that they use different ports.

Configuring core servers

Field	Recommended entry	Notes
Request Timeout (sec)	Enter the number of seconds that the HTTP Connector should wait for a response from one of its clients.	The upper limit of the response time (in seconds) of the Workflow server. The HTTP Connector assumes the current HTTP request from the client has timed out if it did not receive a response from the Workflow server within this time interval. The default is 60 seconds.
Session Timeout (sec)	Enter the time in seconds that the agent has to complete a page and submit the information back to the server.	The maximum idle time for a session. Agent needs to complete and submit the information of the current page within the specified interval value. The HTTP Connector assumes the session as timed out if it did not receive any response from the agent within this time interval. The default is 600 seconds.

5. Select **OK** to save your configuration settings.
6. If the Avaya IC system includes support for Traditional Chinese, configure the language support as described in [Configuring an HTTP Connector server for Traditional Chinese](#) on page 561.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Creating a Notification server

The Avaya IC installation program does not automatically add this server.

Before you create the Notification server, configure the SMTP and POP3 email servers and verify the configuration, as described in *IC Installation Planning and Prerequisites*.

To create a Notification server:

1. Select **Server > New** in IC Manager.
2. Select **Notification** from the list of servers. Select **OK**.

3. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	Notification_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Email</code> from the drop-down list if the server is in the Email domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **Notification** tab and complete the fields in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the data source for the Business Application in the Avaya IC system.	If the Avaya IC system does not include a Business Application, select <code>interaction_center</code> .
SMTP Server Name	Enter the name of your IC Email server.	This is the IC Email server that Avaya IC uses for outbound email. For example, enter <code>MailSrvExchange</code> .
SMTP Domain	Enter the domain where your IC Email server is located	For example, enter <code>xyzcorp.com</code>
Default Sender Email Address	Enter a valid email address that acts as the sender of the notification emails.	For example, enter <code>notify@xyzcorp.com</code> .
Poll Interval (sec)	60	Number of seconds between polls.
Poll Future (sec)	86,400	Number of seconds for a long poll. The default equals 24 hours.
Search Limit	250	Number of database records for Notification Server to process at the same time.
Work Schedule Name	Enter the name of the work schedule, if desired.	The name of the work schedule the server should use to determine business time.

Configuring core servers

Field	Recommended entry	Notes
Notification Agent	Accept the default, or enter another agent number, if desired.	The number representing the agent for which this service instance responds. Agent #0 is the default, and catches all messages. You can also configure multiple Notification server agents, where Agent #1 is for all escalations and Agent #2 is for email and printer. Note: If you configure multiple Notification server agents, you cannot specify an Agent #0, because Agent #0 responds to all messages.
Fire Direct Notification	Check this field, if desired.	Select this option if the server should fire notifications.
Fire Escalations	Check this field, if desired.	Select this option if the server should send scheduled escalations.
Fire Scheduled Reports	Check this field, if desired.	Select this option if the server should run scheduled reports.
Language	Select the language in which data for this server will be written.	The allowable codes are: <ul style="list-style-type: none"> ● en (English) ● fr (French) ● de (German) ● es (Spanish) ● it (Italian) ● pt (Portuguese) ● zh (Chinese, Simplified) ● ko (Korean) ● ja (Japanese) ● th (Thai) ● zt (Traditional Chinese)
Print Font SSize	For Windows systems, enter the size of the font to use for the printed message's subject line.	Default: 24

5. Select **OK** to save your configuration settings.
6. To configure an alternate email encoding, such as Traditional Chinese, see [Configuring a Notification server for alternate email encodings](#) on page 560.

Note:

Do not start this server until you have configured all core servers. To ensure that the servers start in the correct order, see [Starting and stopping Avaya IC servers](#) on page 147.

Starting and stopping Avaya IC servers

After you add and configure the servers, you can modify the server configuration in IC Manager. However, if you modify multiple servers, you must start and stop the servers in a specific order. Dependencies between the servers determine the order. If you start and stop the servers in the wrong order, your Avaya IC system may lose data or encounter other problems. For more specific details, see *IC Administration Volume 1: Servers & Domains*.

 **CAUTION:**

Never stop the DUStore server before you stop the EDU server. If you stop the DUStore server first, you may lose EDU data. Always stop these servers in the following order:

1. EDU server
2. ADU server
3. DUStore server
4. Report server

This section covers startup and shutdown for all Avaya IC servers, including some that you do not install and configure until later in the installation process.

This section includes the following topics:

- [Determining server dependencies](#) on page 147.
- [Starting and stopping the ORB server](#) on page 150.
- [Starting and stopping servers in IC Manager](#) on page 152.
- [Stopping all servers](#) on page 152.
- [Starting and stopping servers with the Avaya IC Admin utility](#) on page 153.

Determining server dependencies

Starting and stopping servers in Avaya IC is a simple process. However, you should exercise caution because starting or stopping Avaya IC processes in the wrong order can lead to data loss or system errors. In addition, if your Avaya IC installation spans multiple machines, you need to pay attention to the order in which the machines are shut down because of the impact on other Avaya IC services.

This section includes the following topics:

- [Server startup dependencies](#) on page 148.
- [Server shutdown dependencies](#) on page 149.

Server startup dependencies

Servers can be started:

- Explicitly by an administrator
- Automatically when the machine on which they reside is started
- As a result of a request from a client

Tip:

The start up time each server requires depends on such factors as user population, the number of queued emails, and database size. If your servers are taking a long time to start, you can try to reduce the sever load by adjusting some of these dependencies.

To view the state of each server, use the Alarm Monitor in IC Manager. As servers are started, that server's state will change to "Up," and ORB server sends informational messages to the Alarm Monitor.

Note:

If IC Manager is running and the Alarm server should fail, Avaya IC will prompt the administrator to re-monitor alarms immediately.

The ICM, IC Website (Tomcat), CIRS, and ICM Bridge (Attribute server) are dependent on several Avaya IC CORBA servers. These components perform a client login that, at minimum, requires the Directory, Alarm, ORB, and Data servers to be running.

To work with a Web Server such as IIS, IBM HTTP server, and Sun ONE server, Avaya IC uses ISAPI and NSAPI filters respectively. These interfaces are used to enable Web Management, DataWake, and Tomcat support via plugins that can recover if a dependent component is not available.

The VOX server interfaces with an IVR (Interactive Voice Response) Unit. If the VOX server connects to an external IVR, you should start the IVR first. The VOX server will attempt to connect to the configured IP address and port, for the length of time specified in the VOX server's Maximum Wait Time and Disable Wait parameters. If the IVR connects to the VOX server, the VOX server must be started first.

Tip:

For an Avaya IC deployment that includes Avaya IC and Avaya OA components on the same machine, to avoid potential port conflicts, always start the Avaya IC components first, then start the Avaya OA components.

Server shutdown dependencies

Common reasons for stopping an Avaya IC service include:

- Upgrading to a new version
- Performing regular maintenance
- Changing configuration

 **Important:**

Shutting down any Avaya IC CORBA process or machine may have an impact on agent clients and dependent processes. Therefore, you should only do so during non-business hours unless you are dealing with an emergency situation.

If failover is configured, the clients should revert from their primary to their backup servers. The connections to the backup server will remain active until the client logs out, is restarted, or another disruption in service occurs.

If failover is not configured and you stop an Avaya IC server, active clients may either raise alarms or show error dialogs and potentially fail if the server is down long enough.

If you need to shutdown an Avaya IC service, you should:

- Do so during a scheduled maintenance period where clients are shutdown and incoming activity can be curtailed.
- Use IC Manager's Server Shutdown facility in order to ensure the correct communication flow between Avaya IC components, all Avaya IC clients, and the services at the site that should be stopped. The Server Shutdown facility ensures that all Avaya IC CORBA processes on that machine are shutdown in the correct order. It does not shutdown dependent Avaya IC processes located on other machines. To use this facility, see [Stopping all servers](#) on page 152.

Before stopping the services on a machine, you need to consider the impact it will have. Other dependent clients (both agent clients and Avaya IC processes) may need to be shutdown first.

To confirm that an Avaya IC process was shutdown properly, use the System Administration tools provided with your operating system make sure that the process is no longer active. IC Manager may report some servers as being stopped while they are actually finishing important clean up tasks such as committing data to the database.

Avaya IC processes should be restarted as soon as practical in order to minimize the impact on clients. In many cases, the processes will restart automatically when the machine comes back up, or when client requests trigger the server to restart.

Dependent clients will attempt to reconnect if they lose communication with an Avaya IC process. If the stopped process does not recover in time, requests will failover based on the server configuration and the failover strategy implemented at your site.

If you need to shutdown individual Avaya IC servers, it is vital that you follow the correct shutdown order to prevent data loss. Stopping a server obviously results in a disruption of

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the services provided by that server. The following list reflects the impacts beyond the immediate services provided by the server.

Server	Impact
Alarm server	This is typically the last to be shutdown so that other servers can still submit alarms.
Data server	Without a Data server, other servers will be unable to commit, read, or write from the database.
DUStore server	If you have configured the ADU and EDU servers to persist data units, these servers become dependent on the DUStore server. Shutting down the DUStore server before the EDU or ADU servers will result in data units not being saved.
Event Collector server	Without the Event Collector, real time statistics will not be collected for the associated domain.
ORB server	This server is responsible for process management. If the ORB server is not running, no other Avaya IC server can start.

Starting and stopping the ORB server

The ORB server controls other Avaya IC servers. You must start the ORB server to open IC Manager. When you start the ORB server, the Alarm, Directory, EDU, and ADU servers start up in sequence.

The following table describes the components of the ORB server.

Component	Description
orbsrv.exe	Executable for the ORB server
qntorbsrv.exe	Windows service executable that starts the <code>orbsrv</code> executable.
Avaya IC ORB Service 6.1	Windows only. Helper service that represents the <code>qntorbsrv.exe</code> executable in the Windows Services control panel

 **CAUTION:**

Do not use **Stop Server** in IC Manager, the Windows Task Manager, or the Windows Services control panel to start or stop the ORB server.

The Avaya IC Configuration Tool starts the ORB server the first time. If you must stop and start the ORB server again, use:

- Avaya IC Admin utility
- IC Manager Shutdown option

Configuring the ORB server to start automatically on Windows

The ORB server is set to automatically start when you install the server. However, if you reboot a machine and the ORB server does not start, you can follow these steps to manually configure the ORB server.

To configure the ORB server to start automatically on a Windows machine:

1. Select **Start > Control Panel > Services** to open the Windows Services control panel.
2. Double-click **Avaya IC ORB Service 6.1** in the list of services.
3. In the **General** tab, select **Automatic** from the **Startup Type** drop-down list.
4. Select **OK**.

Configuring the ORB server to start automatically on Solaris

To configure the ORB server to start automatically on a Solaris machine:

1. Log in as root.
2. Navigate to the `<AVAYA_IC_HOME>/bin` directory
3. Execute `setup_orb`.

Configuring the ORB server to start automatically on AIX

To configure the ORB server to start automatically on an AIX machine:

1. Log in as root.
2. Navigate to the `<AVAYA_IC_HOME>/bin` directory
3. Run `setup_orb`.

Starting and stopping servers in IC Manager

IC Manager allows you to start multiple servers at the same time. The Status column displays the server's new status. If the system cannot start a server, IC Manager displays an error message.

 **CAUTION:**

Never stop the DUStore server before you stop the EDU server. If you stop the DUStore server first, you may lose EDU data.

After you add and configure a server, stop and restart that server.

To start or stop a server:

1. Select the **Server** tab in IC Manager.
2. Select the server from the list on the right side of the window.
3. Select the **Start** or **Stop** traffic light.

Stopping all servers

You can simultaneously shut down all servers that reside on a machine. The server shutdown feature in IC Manager shuts down the servers in the correct order. This process can take several minutes to complete as all servers must complete their current tasks before shutting down. For example, if there are a lot of persistent EDUs for email contacts, the DUStore server can take several minutes to write the EDUs to the database.

To shut down all servers:

1. Select **Server > Shutdown** in IC Manager.
2. Select the IP address or the name of the machine where you want to shut down the servers.
3. Select **OK**.

Starting and stopping servers with the Avaya IC Admin utility

You can use the Avaya IC Admin utility to:

- Start the ORB server and all Avaya IC servers that have Autostart enabled (see [Starting servers with the Avaya IC Admin utility](#) on page 153)
- Stop the ORB server and all associated Avaya IC servers (see [Stopping all servers with the Avaya IC Admin utility](#) on page 153)

For information about how to start and stop Web services, such as the ICM server, see [Starting and stopping Avaya IC services](#) on page 154,

Starting servers with the Avaya IC Admin utility

To start servers with the Avaya IC Admin utility:

1. In a command window, navigate to the directory shown in the following table.

Operating system	Directory
Windows	<i>IC_INSTALL_DIR\IC61\bin</i>
Solaris	<i>IC_INSTALL_DIR/IC61/bin</i>
AIX	<i>IC_INSTALL_DIR/IC61/bin</i>

2. Execute the following command:

```
icadmin so
```

Stopping all servers with the Avaya IC Admin utility

To stop all servers on a machine with the Avaya IC Admin utility:

1. Navigate to the directory shown in the following table.

Operating system	Directory
Windows	<i>IC_INSTALL_DIR\IC61\bin</i>
Solaris	<i>IC_INSTALL_DIR/IC61/bin</i>
AIX	<i>IC_INSTALL_DIR/IC61/bin</i>

2. Execute the following command:

```
icadmin tv <IC_administrative_user> <password>
```

Accessing the help for the Avaya IC Admin utility

The Avaya IC Admin utility includes additional commands that are not listed in this section. The help for the Avaya IC Admin utility includes Information about those additional commands.

To access the help for the Avaya IC Admin utility:

1. Navigate to the directory shown in the following table.

Operating system	Directory
Windows	<i>IC_INSTALL_DIR</i> \IC61\bin
Solaris	<i>IC_INSTALL_DIR</i> /IC61/bin
AIX	<i>IC_INSTALL_DIR</i> /IC61/bin

2. Execute the following command:

```
icadmin help
```

Starting and stopping Avaya IC services

When you use the **Web** tab of the Configuration Tool to configure Web applications, the Configuration Tool creates services for Avaya IC.

This section describes how to stop, start, and configure startup options for the Avaya IC services, and how to set startup options for the services. This section includes the following topics:

- [Starting and stopping services on Windows](#) on page 155
- [Starting and stopping services on Solaris and AIX](#) on page 155

For information about the VMM, see [Setting startup options for the VMM server](#) on page 316.

Tip:

Avaya recommends that you configure all Avaya IC services to autostart.

Starting and stopping services on Windows

Set the following Windows NT services to autostart.

- Avaya IC 6.1 ICM Service
- Avaya IC 6.1 CIRS Service
- World Wide Web Publishing Service (for IIS)
- If you configure the Web applications as a Single Tomcat instance:
 - Avaya IC Jakarta Service 6.1
- If you configure the Web applications as Multiple Tomcat instances:
 - Avaya IC WebLM Service 6.1
 - Avaya IC Web Management Service 6.1
 - Avaya IC Email Template Management Service 6.1
 - Avaya IC Letter Generation Service 6.1
 - Avaya IC Test Service 6.1

To set startup options for services on Windows:

1. In the Services control panel, right-click on the service and select **Properties**.
2. Select **Automatic** from the **Startup Type** drop-down list. Select **OK**.

Starting and stopping services on Solaris and AIX

Topics in this section include:

- [Starting and stopping the ICM server](#) on page 156.
- [Starting and stopping the CIRS server](#) on page 156.
- [Starting and stopping Sun ONE Server Web server](#) on page 156.
- [Starting and stopping IBM http Web server](#) on page 157.
- [Starting and stopping Web applications on multiple Tomcat instances](#) on page 157.
- [Starting and stopping Web applications on single Tomcat instances](#) on page 158.

Starting and stopping the ICM server

Execute all ICM server commands from the `IC_INSTALL_DIR/IC61/bin` directory. For the ICM server to be able to log in, the Avaya IC servers must start before the ICM server.

Starting the ICM server - To start the ICM server, execute the following command:

```
./icm.sh start
```

Stopping the ICM server - To stop the ICM server, execute the following command where `-force` is an optional parameter that terminates the server processes:

```
./icm.sh stop -force
```

Setting the ICM server to autostart - Avaya recommends that you set the ICM server to autostart. To set the ICM server to autostart, add the following command to the UNIX startup facility:

```
IC_INSTALL_DIR/IC61/bin/icm.sh start
```

Starting and stopping the CIRS server

Execute all CIRS server commands from the `IC_INSTALL_DIR/IC61/bin` directory. For the CIRS server to be able to log in, the Avaya IC servers must start before the CIRS server.

Starting the CIRS server - To start the CIRS server, execute the following command:

```
./cirs.sh start
```

Stopping the CIRS server - To stop the CIRS server, execute the following command where `-force` is an optional parameter that terminates the server processes:

```
./cirs.sh stop -force
```

Setting the CIRS server to autostart - Avaya recommends that you set the CIRS server to autostart. To set the CIRS server to autostart, add the following command to the UNIX startup facility:

```
IC_INSTALL_DIR/IC61/bin/cirs.sh start
```

Starting and stopping Sun ONE Server Web server

Starting Sun ONE Server - To start Sun ONE Server, execute the following command:

```
<SunONE_install_dir>/servers/<my_ONE_server>/start
```

Stopping Sun ONE Server - To stop Sun ONE Server, execute the stop script packaged with the Web server:

```
<SunONE_install_dir>/servers/<my_ONE_server>/stop
```

Setting Sun ONE Server to autostart - Avaya recommends that you set the Sun ONE Server to autostart. To set Sun ONE server to autostart, add the following command to the UNIX startup script:

```
<SunONE_install_dir>/https-<my_ONE_server>/start
```

Starting and stopping IBM http Web server

Starting IBM http Web Server - To start IBM http Web Server, execute the following command:

```
./httpserver.sh start
```

Stopping IBM http Web Server - To stop IBM http Web Server, execute the following command:

```
./httpserver.sh stop
```

Setting IBM http Web Server to autostart - Avaya recommends that you set the IBM http Web server to autostart. To set IBM http Web server to autostart, add the following command to the UNIX startup script:

```
../bin/httpserver.sh start
```

Starting and stopping Web applications on multiple Tomcat instances

If you configure the Web applications as Multiple Tomcat instances, where each Web application is configured on a separate Tomcat instance, use the following commands.

Execute all Tomcat commands for the Web Applications from the *IC_INSTALL_DIR/IC61/bin* directory.

Starting all services - To start services for all Web applications, execute the following command:

```
./ictomcat.sh start all
```

Stopping all services - To stop all services for Web applications, execute the following command where *-force* is an optional parameter that terminates the server processes:

```
./ictomcat.sh stop all -force
```

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Starting an individual Web application - To start an individual Web application, execute the appropriate command from the following table:

Web application	Start command
Website	<code>ictomcat.sh start website</code>
Web License Manager	<code>ictomcat.sh start weblm</code>
Email Template Administration	<code>ictomcat.sh start rlmanager</code>
Letter Generator	<code>ictomcat.sh start docgen</code>

Stopping an individual Web application - To stop an individual Web application, execute the appropriate command from the following table. `-force` is an optional parameter that terminates the server processes.

Web application	Stop command
Website	<code>ictomcat.sh stop website -force</code>
Web License Manager	<code>ictomcat.sh stop weblm -force</code>
Email Template Administration	<code>ictomcat.sh stop rlmanager -force</code>
Letter Generator	<code>ictomcat.sh stop docgen -force</code>

Starting and stopping Web applications on single Tomcat instances

If you configure the Web applications as single Tomcat instances, where each Web application is configured on the same Tomcat instance, execute the following commands.

Execute all Tomcat commands for the Web Applications from the `IC_INSTALL_DIR/IC61/bin` directory.

Starting Web applications - To start services for all Web applications on the Tomcat instance, execute the following command:

```
./ictomcat.sh start
```

Stopping Web applications - To stop services for all Web applications on the Tomcat instance, execute the following command where `-force` is an optional parameter that terminates the server processes:

```
./ictomcat.sh stop -force
```

Setting Tomcat Web applications to autostart

Avaya recommends that you set the Tomcat Web applications to autostart. To set them to autostart, add the following command to the UNIX startup facility:

```
IC_INSTALL_DIR/IC61/bin/ictomcat.sh start all
```

For the Tomcat Web applications to be able to log in, the Avaya IC servers must start first.

Configuring core servers



Chapter 6: Configuring secondary servers

The secondary server environment includes the configuration settings required for the Avaya IC servers on a machine that does not host the primary ORB server and for the secondary ORB server required on that machine.

This section includes the following topics:

- [When to configure a machine for secondary servers](#) on page 161.
- [Creating a secondary server environment](#) on page 162.
- [Creating a secondary Directory server](#) on page 167.
- [Creating a secondary Data server](#) on page 169.

Tip:

You must run the Configuration Tool to create the secondary server environment. You cannot configure secondary servers without the Configuration Tool.

When to configure a machine for secondary servers

Configure a machine for secondary servers if you:

- Install a secondary instance of a core Avaya IC server, such as the Data server or the Directory server
- Install and configure Avaya IC servers on a machine other than the machine that hosts the primary ORB server

For example, if you host a Telephony server on a dedicated machine, that machine requires a secondary ORB server. You must configure that machine for secondary servers.

Creating a secondary server environment

You create a secondary server environment and start a secondary ORB server in the **Initial Configuration** tab of the Configuration Tool. The secondary server environment only configures the secondary ORB server. Use IC Manager to create all other servers required on the target machine.

Note:

You cannot use the Configuration Tool to create a secondary ORB server on the same machine as the primary ORB server.

Some of the steps are optional. You need to perform them only if the Avaya IC system includes an Oracle or DB2 database, or if the secondary server machine will host a Telephony server.

To create the secondary server environment, complete the steps in the following sections:

1. [Before you begin](#) on page 162.
2. [Configuring the secondary server environment](#) on page 163.
3. [Specifying the Telephony switch](#) on page 164.
4. [Configuring database settings](#) on page 165.
5. [Completing the configuration](#) on page 166.

Before you begin

You must complete the following prerequisites before you configure secondary servers:

Install server files - If you plan to host Avaya IC servers on more than one machine, you must install the secondary servers on every machine except the one that hosts the primary ORB server, as described in [Installing Avaya IC servers](#) on page 49.

Start servers - You must start the following servers before you can install secondary servers on the target machine:

- Primary ORB server
- Data server
- Alarm server
- Directory server

Configuring the secondary server environment

This procedure continues from [Installing Avaya IC servers](#) on page 49. During the installation, you must select **Yes** to answer the question **Do you want to run the Configuration Tool now?** to see the installation window required by this procedure.

To configure the secondary server environment:

1. After you choose to run the Configuration Tool in the server installation, in the next installation window:
 - a. Select the **Secondary** option for the mode in which you want the Configuration Tool to run.
 - b. Select **Next**.
2. In the **Initial Configuration** tab of the Configuration Tool, confirm that **Secondary** is selected in the **Select Mode** drop-down list.

Note:

The **Initial Configuration** tab of the Configuration Tool is dynamic. The Configuration Tool does not automatically display all of the fields. For more information, see [Initial Configuration tab](#) on page 480.

3. Complete the fields in the following table.

Field	Description	Sample entry
IP Address	The IP address for the machine that hosts the secondary ORB server. Note: If the secondary ORB server runs on a machine with multiple network interface cards, you must select the IP address for the first network interface card on the machine. The secondary ORB server cannot run on any other network interface card.	145.170.12.245
Secondary ORB Port	The port on the target machine that the secondary ORB server uses for communications. Because the secondary ORB server is on a different machine from the primary ORB server, the secondary ORB server can use the same port as the primary ORB server. You must make sure that the port assignment in the Start Port field is an available port. Type a new port assignment if necessary.	Default: 9001
Primary Host Name	The name of the machine that hosts the primary ORB server. The primary host name can be the IP Address or fully-qualified domain name of the machine.	coresvr.avaya.com

Configuring secondary servers

Field	Description	Sample entry
Primary ORB Port	The port that the primary ORB server uses for communications.	Default: 9001
IC Login	The administrative login ID that you must create for Avaya IC servers. For more information, see Setting up administrative accounts on page 119.	serveradmin
IC Password	The password associated with the IC Login.	admin1
IC Domain	This is the Avaya IC domain that includes the primary ORB server. This domain is typically the Default domain.	Default
Start ORB Server	If you place a checkmark in this box, the Configuration Tool automatically starts the secondary ORB server on the target machine.	Checkmark in box

4. Make sure the port assignment in the **Start Port** field is an available port on the target machine. Type a new port assignment if necessary.
5. Select **Start ORB Server**.
6. The next step in this procedure depends upon the deployment of the Avaya IC system:
 - If the machine hosts a Telephony server, continue with [Specifying the Telephony switch](#) on page 164.
 - If the machine does not host a Telephony server, continue with [Configuring database settings](#) on page 165.

Specifying the Telephony switch

Only perform this step if the machine hosts a Telephony server. If the machine does not host a Telephony server, skip this step and continue with [Configuring database settings](#) on page 165.

To specify the Telephony switch:

1. Select and check the **Telephony Switch** box.
2. From the **Telephony Switch** drop-down list, select the name of the switch that the Telephony server will communicate with.

The Telephony server must communicate with a switch that is supported for the operating system of the machine. For example, do not select a Nortel switch if you plan to host the Telephony server on an AIX machine. For more information about switch support, see *IC Installation Planning and Prerequisites*.

3. The next step in this procedure depends upon the deployment of the Avaya IC system:
 - If the Avaya IC system includes an Oracle or DB2 database, continue with [Configuring database settings](#) on page 165.
 - If the Avaya IC system includes a SQL Server database, continue with [Completing the configuration](#) on page 166.

Configuring database settings

Only perform this step if the Avaya IC system uses an Oracle or DB2 database. If the Avaya IC system uses a SQL Server database, skip this step and continue with [Completing the configuration](#) on page 166.

To configure database settings, perform one of the following steps:

1. If your Avaya IC system includes an Oracle database, see [Configuring database settings for Oracle](#) on page 165.
2. If your Avaya IC system includes a DB2 database, see [Configuring database settings for DB2](#) on page 166.

Configuring database settings for Oracle

To configure database settings for Oracle:

1. Select and check the **Oracle Setup** box.

The Configuration Tool displays the required fields for an Avaya IC system with an Oracle database.
2. For all Oracle databases, type the NLS Lang parameter in the **NLS Lang** field to specify the character set of the database.

For more information about the NLS Lang parameter, including a list of NLS LANG parameters for supported languages, see [Specifying the NLS Lang property for Oracle](#) on page 544.
3. For all Oracle databases, type the home directory of the Oracle client on the machine that hosts the core servers in the **Oracle Home** field.

For example, type `/opt/oracle/8.1.7`
4. For Oracle databases on Solaris, type the Oracle SID of the database in the **Oracle SID** field.

For example, type `icutf8db`. The Oracle SID field is case-sensitive.
5. For Oracle databases on Solaris, select the correct version of Oracle from the **Oracle Version** field.
6. Continue with [Completing the configuration](#) on page 166.

Configuring database settings for DB2

Note:

For machines on AIX that host a DB2 client, you must manually catalog the database. For information on how to do this, see *IC Installation Planning and Prerequisites* and the documentation for your DB2 database.

To configure database settings for DB2:

1. Select and check the **DB2 Setup** box.

The Configuration Tool displays the required fields for an Avaya IC system with an DB2 database.

2. Type the home directory of the DB2 client on the machine that hosts the core servers in the **DB2 Home** field.

For example, type `/usr/lpp/db2_07_01`

3. Type the name of the DB2 instance in the **DB2 Instance** field.

For example, type `db2inst1`

4. Continue with [Completing the configuration](#) on page 166.

Completing the configuration

To complete the configuration of the secondary server environment:

1. If you host the servers on Solaris or AIX, select the primary locale from the **Locale** drop-down list.

The drop-down list includes all of the locales supported by the operating system. For example, if your servers use an English locale:

- For AIX, select `EN_US`.
- For Solaris, select `en_US.UTF-8`.

2. Select **Apply Settings** in the Configuration Tool to configure and start the servers.
3. Select **OK** in the **Success** dialog box.
4. Select **Exit**.

The Configuration Tool closes and you return to the Avaya IC Installation.

5. Select **Next**.
6. On Windows machines, select **Yes, restart my system**.

7. Select **Finish**.
8. Restart the machine, if the machine does not restart automatically.

Tip:

If the Configuration Tool displays a "Failed to load vesp.imp" error message, confirm that your secondary ORB server has started, and that your primary ORB server and secondary ORB server have not lost their connections to the network.

You have configured and started the secondary ORB server. Continue with the configuration of the other Avaya IC servers that the machine hosts.

Creating a secondary Directory server

The Directory server maintains a list of all the servers in Avaya IC. When you create multiple Directory servers, they share one common directory.

You must designate one Directory server to synchronize the directories and ensure that changes made by one Directory server are reflected throughout the network. This designated Directory server is called the parent. If there is only one Directory server in Avaya IC, IC Manager automatically assigns parent status to that server.

For more information about how to synchronize Directory servers, see *IC Administration Volume 1: Servers & Domains*.

To create a secondary Directory server:

1. In IC Manager, select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **Directory** from the list of servers.
 - c. Select **OK**.
2. Select the **General** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	Directory_<domain>	Include the domain in the server name to identify the server.

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Field	Recommended entry	Notes
Domain	Select the domain from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the machine's IP address from the drop-down list, or type in a new IP address.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

3. Select the **Directory** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the IC Repository data source from the IC Data Source drop-down list.	If you used the default name, select <code>repository</code> .
Is Parent	Do not check this box, as this Directory server is a secondary, or child, Directory server.	The parent Directory server synchronizes the directories for all Directory servers.
Backup	Enter the name of a backup file to be created. This file used a backup copy of the directory. Click the Start button to create the file in the server's home directory.	Avaya IC appends an <code>.ffd</code> extension to the file name.
Restore	Enter file name of the backup file used as the name of the directory you want to restore. Click the Start button to restore the directory.	The file name you enter must be a previously created backup directory file.

Field	Recommended entry	Notes
First update lag (sec)	Enter the number of seconds that the Directory server waits before sending updates to the first of its children.	During normal operation, set this value to 0. (A small delay occurs automatically.) There is no maximum value. If this value is greater than 0, the Advanced tab contains a couple with the name "PropagationDelay" and a value equal to the current buffer updates setting.
Succeeding update lag (sec)	Enter the number of seconds that the Directory server pauses before sending an update to the next child.	During normal operation, set this value to 0 or 1. There is no maximum value. If this value is greater than 0, the Advanced tab contains a couple with the name "LagBetweenChildren" and a value equal to the current childlag setting.

4. Select **OK** to save the Directory server configuration.
5. Copy the `ds.ffd` file from the machine that hosts your primary Directory server to the machine that hosts your secondary Directory server.
6. In IC Manager, start the secondary Directory server.

Creating a secondary Data server

Note:

These instructions do not include information about the ODBC Data server or the Legacy Data server. For more information about those Data servers, see *IC Administration Volume 1: Servers & Domains*.

This section includes the following topics:

- [Configuring a secondary Data server for Microsoft SQL Server](#) on page 170.
- [Configuring a secondary Data server for Oracle](#) on page 171.
- [Configuring a secondary Data server for IBM DB2](#) on page 172.

Configuring a secondary Data server for Microsoft SQL Server

To configure the secondary Data server:

1. In IC Manager, select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **DataServerMSSQL** from the list of servers.
 - c. Select **OK**.
2. In the **General** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	Type a logical name for the Data server, such as DataServerMSSQL_<domain>	Include the type of database on your Avaya IC system in the name. Tip: For all secondary Data servers, include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the IP address of the machine that hosts the server, or type in the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

3. In the **DataServer** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
DB Login	Enter your DBA user name.	The name used by the Data server to access databases.
DB Password	Enter your database password.	The password that corresponds to the database login name used by the Data server to access databases.

Field	Recommended entry	Notes
Request Handler Thread Pool Size	Enter the number of requests in the thread pool. Default is 30.	Maximum number of threads that handle client requests in the Data server. These threads accept requests from the Data server clients and queues them for execution in the database.
DB Connection Pool Size	Enter the number of connections in the pool. Default is 15. Minimum is 1.	Maximum number of database connections to open in a connection pool.

4. Select **OK** to save the Data server configuration.
5. Select the Data server.
6. Right-click on the Data server, and select **Start** from the drop-down list.

Configuring a secondary Data server for Oracle

To configure the secondary Data server for Oracle:

1. In IC Manager, select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **DataServerOracle** from the list of servers.
 - c. Select **OK**.
2. In the **General** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	Type a logical name for the Data server, such as DataServerOracle_<domain>	Include the type of database on your Avaya IC system in the name. Tip: For all secondary Data servers, include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the IP address of the machine that hosts the server, or type in the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

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3. In the **DataServer** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
DB Login	Enter the Oracle database user name.	The database login name used by the Data server to access databases.
DB Password	Enter the password for the ODBC database.	The password as configured in the Oracle database.
Oracle Home Directory	Enter the pathname of the home directory of the Oracle database.	Oracle Data server only. This home directory overrides the home directory specified in the IC Data Source.
Request Handler Thread Pool Size	Enter the number of requests in the thread pool. Default is 30.	Maximum number of threads that handle client requests in the Data server. These threads accept requests from the Data server clients and queues them for execution in the database.
DB Connection Pool Size	Enter the number of connections in the pool. Default is 15. Minimum is 1.	Maximum number of database connections to open in a connection pool.

4. Select **OK** to save the Data server configuration.
5. Select the Data server.
6. Right-click on the Data server, and select **Start** from the drop-down list.

Configuring a secondary Data server for IBM DB2

To configure a secondary Data server:

1. In IC Manager, select the **Server** tab, then:
 - a. Select **Server > New**.
 - b. Select **DataServerDB2** from the list of servers.
 - c. Select **OK**.

2. In the **General** tab of the Server Editor, complete the fields as shown in the following table.

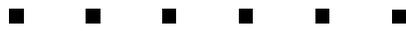
Field	Recommended entry	Notes
Name	Type a logical name for the Data server, such as DataServerDB2_<domain>	Include the type of database on your Avaya IC system in the name. Tip: For all secondary Data servers, include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Default</code> from the drop-down list if the server is in the Default domain.
Host	Select the IP address of the machine that hosts the server, or type in the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

3. In the **DataServer** tab of the Server Editor, complete the fields as shown in the following table.

Field	Recommended entry	Notes
DB Login	Enter your database login name.	The name used by the Data server to access databases.
DB Password	Enter your database password.	The password that corresponds to the database login name used by the Data server to access databases.
Request Handler Thread Pool Size	Enter the number of requests in the thread pool. Default is 30.	Maximum number of threads that handle client requests in the Data server. These threads accept requests from the Data server clients and queues them for execution in the database.
DB Connection Pool Size	Enter the number of connections in the pool. Default is 15. Minimum is 1.	Maximum number of database connections to open in a connection pool.

4. Select **OK** to save the Data server configuration.
5. Select the Data server.
6. Right-click on the Data server, and select **Start** from the drop-down list.

Configuring secondary servers



Chapter 7: Installing Avaya IC licenses

Avaya™ Interaction Center (Avaya IC) components will not run if you do not install the license server, and obtain the appropriate license file. For information on how to obtain a license, see *IC Installation Planning and Prerequisites*.

If Avaya IC components cannot access the License server and WebLM, agents may not be able to log in, and servers may not be able to start. To provide redundant operation in the event of a failure, install at least one Web License Manager (WebLM) and License server per site, with a minimum of two WebLMs and License servers per Avaya IC system.

To configure Avaya IC licensing, perform the steps in the following topics:

1. [Completing prerequisites for configuring Avaya IC licenses](#) on page 176
2. [Configuring the Web License Manager](#) on page 176.
3. [Installing the license file](#) on page 184.
4. [Configuring multi-site licenses](#) on page 186 (multi-site systems only).
5. [Configuring the License server](#) on page 187.
6. [Changing the administrative password](#) on page 189.

Completing prerequisites for configuring Avaya IC licenses

Before you install and configure WebLM:

1. Obtain a license file for your Avaya IC components from Avaya, as described in *IC Installation Planning and Prerequisites*.

Configuring the Web License Manager

The Web License Manager (WebLM) is a Web application that hosts your Avaya IC licence. You must configure the Web LM on each machine that hosts an Avaya IC or Avaya OA license. You use the **Web** tab of the Configuration Tool to configure the WebLM.

This section describes how to install and configure the Web License Manager for each operating system that Avaya IC supports. This section includes the following topics:

- [Hosting multiple Web applications on one machine](#) on page 176.
- [Advanced properties for the Web LM](#) on page 177.
- [Configuring the WebLM on Windows](#) on page 177.
- [Configuring the WebLM on Solaris](#) on page 179.
- [Configuring the WebLM on AIX](#) on page 181,

Hosting multiple Web applications on one machine

If the Avaya IC system includes more than one Web application on the same machine as the WebLM, Avaya recommends that you:

- Select **Multiple** for the **Tomcat Setup** option.
- Configure all of the Web applications on the target machine at the same time.

 **Important:**

If you do not configure all of the Web applications simultaneously, leave the options for all Web applications on the target machine checked when you re-run the Configuration Tool to create the new Web applications. If you do not leave the options for the previously created Web applications checked, the Configuration Tool may delete those Web applications from the machine.

Advanced properties for the Web LM

The Web tab also includes advanced properties for the Java Virtual Machine.

Only configure the advanced properties if you expect a high volume of traffic for the Web License Manager. For more information, see [Advanced properties on the Web tab](#) on page 501.

Configuring the WebLM on Windows

Use these instructions if you plan to host the WebLM on a Windows machine.

You do not need to stop the IIS Web server on Windows machines.

To configure the Web License Manager to run on a Windows machine:

1. To start the Configuration Tool, select **Start > Programs > Avaya Interaction Center 6.1 > Configuration Tool**.
2. Log in with your IC Manager login ID and password.
3. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	C:\jdk1.3.1_06
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600

Installing Avaya IC licenses

Field	Description	Sample entry
IIS Website	The name of the IIS Web server that the Web application will use. Tip: For a localized version of IIS, type the localized name for the IIS Web server.	Default Web Site
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	textbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> • HTTP port is 80. • HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: http://<server>.<domain>.com:9606/ictest Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

4. Check the **Configure Web License Manager** box.
5. Select **Apply Settings**.
6. Select **OK** in the **Success** dialog box.
7. Select **Exit**.
8. To complete the configuration:
 - a. Open the Windows Services control panel.

- b. Start the Tomcat NT services:
 - For a multiple Tomcat setup, start Avaya IC WebLM Service 6.1.
 - For a single Tomcat setup, start Avaya IC Jakarta Service 6.1.

For more information about how to start and stop Web application services, see [Starting and stopping Avaya IC services](#) on page 154.

Configuring the WebLM on Solaris

Use these instructions if you plan to host the WebLM on a Solaris machine.



Important:

To configure the Web License Manager on Solaris, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure the Web License Manager to run on a Solaris machine:

1. Stop the Sun ONE server that hosts the Website application with the stop script packaged with the Web server:
`<SunONE_install_dir>/servers/<my_ONE_server>/stop`
2. Start the Configuration Tool:
 - a. Navigate to `IC_INSTALL_DIR/IC61/bin`
 - b. Run `./configure`
3. Log in with your IC Manager login ID and password.
4. Complete the general fields in the following table that apply to the operating system on the target machine.

Field	Description	Sample entry
Tomcat Setup	<p>This option determines how many Tomcat servers the Configuration Tool must configure on the target machine.</p> <p>Tip: Avaya recommends that you use the Multiple option.</p> <p>The Multiple option creates a separate Tomcat server for each Web application.</p> <p>The Single option creates a single Tomcat server that controls all Web applications.</p> <p>For more information, see General fields on the Web tab on page 495.</p>	Multiple

Installing Avaya IC licenses

Field	Description	Sample entry
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	/opt/j2sdk1_3_1_06
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
Web Server Home	The installation path for the Sun ONE™ Server instance that hosts the Web application.	/opt/iplanet
Web Server Name	The root name of the server as found in the Sun ONE™ Server home directory. Note: Do not include <code>https-</code> in the Web server name.	testbox.xyzcorp.com
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: <code>http://<server>.<domain>.com:9606/ictest</code> Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

5. Check the **Configure Web License Manager** box.
6. Select **Apply Settings**.
7. Select **OK** in the **Success** dialog box.
8. Select **Exit**.
9. To complete the configuration, perform the following steps to ensure that all WebLM services start properly:
 - a. In the Sun ONE Server installation directory:
 - Open the https-admserv directory.
 - If the directory includes a file called start-ICEnv.backup, execute the following command to rename the file:


```
mv start-ICEnv.backup oldstart-ICEnv
```
 - b. Start the Sun ONE server that hosts the Web License Manager application with the following start script:


```
<SunONE_install_dir>/servers/<my_ONE_server>/start
```
 - c. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.
 - d. Use the following script to start Tomcat:
 - If you selected **Multiple** in the **Tomcat Setup** field:


```
./ictomcat.sh start all
```
 - If you selected **Single** in the **Tomcat Setup** field:


```
./ictomcat.sh start docgen
```

Configuring the WebLM on AIX

Use these instructions if you plan to host the WebLM on an AIX machine.

Important:

To configure the Web License Manager on AIX, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure the Web License Manager to run on an AIX machine:

1. Stop the IBM HTTP Server that hosts the Website application with the stop script packaged with the Web server:


```
./httpserver.sh stop
```

Installing Avaya IC licenses

2. Start the Configuration Tool:
 - a. Navigate to `IC_INSTALL_DIR/IC61/bin`
 - b. Run `./configure`
3. Log in with your IC Manager login ID and password.
4. Complete the general fields in the following table that apply to the operating system on the target machine.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	<code>/usr/java131</code>
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
Web Server Home	The installation path for the IBM HTTP server instance that hosts the Web application.	<code>/usr/HTTPServer</code>
Web Server Name	A Solaris-only field. You do not need to complete this field for AIX.	Leave this field blank.
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com

Field	Description	Sample entry
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> • HTTP port is 80. • HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: <code>http://<server>.<domain>.com:9606/ictest</code> Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

5. Check the **Configure Web License Manager** box.
6. Select **Apply Settings**.
7. Select **OK** in the **Success** dialog box.
8. Select **Exit**.
9. To complete the configuration, perform the following steps to ensure that all WebLM services start properly:
 - a. Start the IBM HTTP Server that hosts the Web License Manager application with the following start script:

```
./httpserver.sh start
```
 - b. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.
 - c. Use the following script to start Tomcat:
 - If you selected **Multiple** in the **Tomcat Setup** field:

```
./ictomcat.sh start all
```
 - If you selected **Single** in the **Tomcat Setup** field:

```
./ictomcat.sh start weblm
```

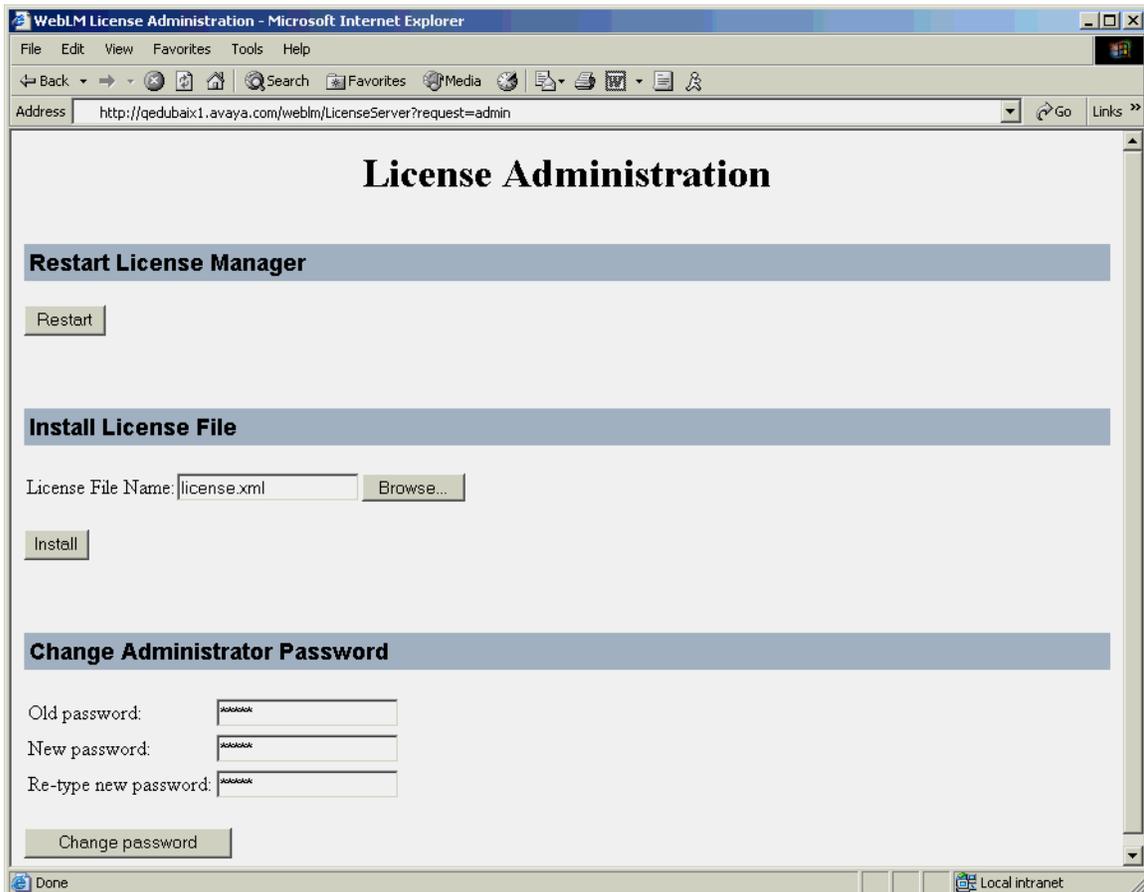
Installing the license file

After you obtain the license file, install the file in the WebLM. For more information on how to obtain a license file, see *IC Installation Planning and Prerequisites*.

⚠ CAUTION:

Do not change your license file after you receive it from Avaya. WebLM will not accept a modified license.

The following figure shows the License Administration page of the WebLM.

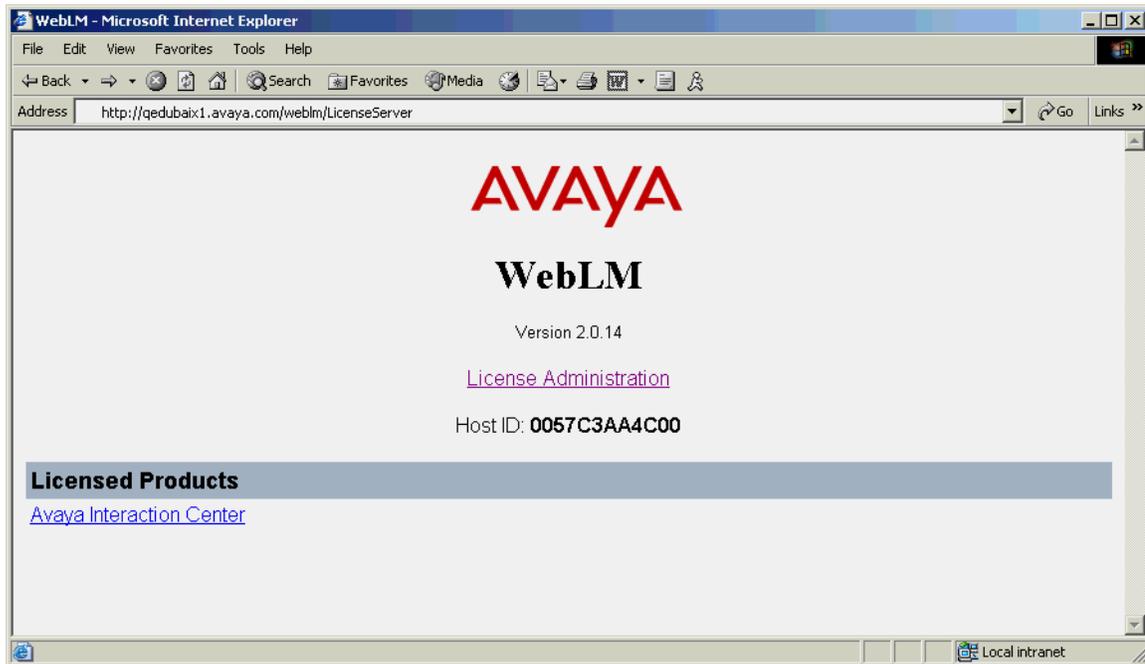


To install the license file:

1. In your Web browser, navigate to the following URL for the WebLM:
`http://<machine_name>.<domain>:<webLM_port>/weblm/LicenseServer`
For example, `http://testbox.xyzcorp.com:9601/weblm/LicenseServer`
If your contact center uses a proxy server or enhanced security for Internet Explorer, you must include this address in the browser exception list and the acceptable Web addresses list.
2. Select **License Administration**.
3. Type **weblm** in the **Password** field and select **Continue**.
WebLM forces you to change this password immediately to help prevent unauthorized access to your license file.
4. To change the password
 - a. Type the new password.
 - b. Re-type the new password.
 - c. Select **Change password**.
5. In the **License File Name** field, type the directory path to your license file.
If you do not know the directory path, select **Browse** and navigate to the license file.
6. Select **Install**.
If the installation is successful, you see a page confirming that the WebLM license file is installed. If you installed an incorrect license file, or WebLM could not access the location of the license file on your network, you will receive an error page.

Installing Avaya IC licenses

7. Select the hyperlink under **Licensed Products**, shown in the following figure, and confirm that the number of agents and servers matches your expectations.



Configuring multi-site licenses

If your Avaya IC system includes multiple sites, or a redundant multi-server solution, Avaya provides you with a series of segmented licenses for Avaya IC. Each segmented license is specific to a WebLM in your Avaya IC system.

To configure multi-site licenses:

1. Install the appropriate segmented license in all WebLMs in your Avaya IC system, by following the instructions in [Installing the license file](#) on page 184.
2. After you install the licenses, return to the **License Administration** page.
3. Configure the peer servers for the segmented license, by following the instructions below.
4. Repeat the configuration process on every machine in your Avaya IC system that hosts a WebLM.

Configuring peer servers for multi-site licenses

To configure peer servers for multi-site licenses:

1. In the **License Administration** page, scroll down to the Peer Server Administration section at the bottom of the page.
2. Select **View/Edit Host List**.
3. In the **Peer Host Administration** page, type the fully-qualified domain name and port of the machine in your Avaya IC system that hosts a WebLM.

Type `<machine_name>.<domain>:<webLM_port>`. For example, type `testbox.xyzcorp.com:9601`.

4. Select **Submit Changes**.

Repeat steps 3 and 4 for every machine in your system that hosts a WebLM except the machine that you are configuring.

Note:

If you are unable to add a peer host machine to the Peer Host Administration page, make sure that the other machine is up and running, and that the appropriate segmented license is installed.

Configuring the License server

This section includes information about how to configure the License server that is automatically installed with the primary ORB server. Use the same configuration parameters in all other License servers in the Avaya IC system.

Do not host more than one License server on a machine. If your Avaya IC system requires multiple License servers, you must host them on different machines.

To configure the License server:

1. In IC Manager, double-click the License server in the list of servers.
2. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	License_<domain>	Include the domain in the server name to identify the server.

Installing Avaya IC licenses

Field	Recommended entry	Notes
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select Default from the drop-down list if the server is in the Default domain.
Host	Select the machine's IP address from the drop-down list, or type the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

3. Select the **License Server** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Warn about upcoming license expiry	Check this field.	
Time in advance of expiry (hours)	If you selected Warn about Upcoming License Expiry, enter the amount of time before the license expires that you want to be warned.	Default is 96 hours.
Alarm on no licenses	Check this field.	
WebLM Server URLs	<ol style="list-style-type: none"> 1. Select the Ellipsis (...) button. 2. Add the URL of the server page for each WebLM License Manager. 3. Select the OK button. 	Repeat this step for each WebLM in your Avaya IC system. For example, the default URL is <code>http://<machine_name>.<domain>:<port>/weblm/LicenseServer</code> Important: Avaya recommends that you do not use the IP address of the machine in the URL.

4. Select **OK**.

5. Start the License Server.

6. Confirm that the Alarm Manager at the bottom of the IC Manager window displays a confirmation message, such as "At least one WebLM server configuration is working". If you do not see this alarm message, your license is not working correctly.

Changing the administrative password

To change the administrative password for Web License Manager:

1. In your internet browser, navigate to the URL of the server page for the WebLM.
For example, the URL is
`http://<machine_name>.<domain>.<webLM_port>/weblm/LicenseServer`
2. Select **License Administration**.
3. Type your current password in the **Old Password** field.
4. Complete the following fields under **Change Administrator Password**:
 - Old password
 - New password
 - Re-type new password
5. Select **Change password**.

Installing Avaya IC licenses

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Chapter 8: Configuring Telephony

The Avaya Computer Telephony for IC (Telephony) is part of the voice channel of Avaya Interaction Center (Avaya IC).

You can use the information in this chapter to set up a simple Telephony environment with one Telephony server and one PBX or ACD. Avaya IC also supports more complex Telephony environments, including multiple Telephony servers with multiple PBXs or ACDs that work independently or together as an integrated environment. You can also configure an IVR.

To configure Telephony, perform the steps in the following topics:

1. [Prerequisites for configuring Telephony](#) on page 192.
2. [Creating a secondary server environment for Telephony](#) on page 192.
3. [Configuring the ACD name parameter](#) on page 193.
4. [Creating the Telephony server](#) on page 193.
5. [Creating the Telephony Queue Statistics server](#) on page 201.
6. [Creating a voice queue](#) on page 207.
7. [Starting the Telephony servers](#) on page 210.
8. [Configuring a Workflow server for Telephony](#) on page 211.
9. [Building and loading workflows for Telephony](#) on page 214.
10. [Creating routing hints for the Incoming Call workflow](#) on page 216.

Your Avaya IC system can also include the following optional configurations:

- Multi-site heterogeneous switches, as described in *IC Telephony Connectors Programmer Guide*.
- Return on No Answer (RONA), as described in *IC Telephony Connectors Programmer Guide*.
- Connections to an IVR, as described in *VOX Server Programmer Guide*.

Prerequisites for configuring Telephony

Before you configure Telephony and related components, make sure that you:

1. Install and configure all prerequisite software and hardware. The prerequisites can include one or more of the following:
 - Database
 - Telephony switch, equipment, and software
 - IVR (optional)

For more information about the prerequisites and supported platforms for Telephony, see *IC Installation Planning and Prerequisites*.

2. Copy the server files to the machines where you plan to run the Avaya IC servers, described in [Installing Avaya IC servers](#) on page 49.
3. Install the Avaya IC design and administration tools.
4. Perform all the steps to configure the Avaya IC servers, databases, and related components, described in [Configuring core servers](#) on page 113.
5. If your Avaya IC system includes multiple media channels, or multiple Telephony servers, create and configure a separate Avaya IC domain for Telephony.

For information on how to create a domain, see [Using Avaya IC domains](#) on page 115 and *IC Administration Volume 1: Servers & Domains*.

Creating a secondary server environment for Telephony

You must create a secondary server environment, including a secondary ORB server, if you host the servers that you need to configure for Telephony on a different machine than the machine that hosts the primary ORB server. For more information about how to create a secondary server environment, see [Configuring secondary servers](#) on page 161.

 **CAUTION:**

Do not create a secondary server environment on the machine that hosts your primary ORB server.

You can omit this step if you host the Telephony server and all Workflow servers that process voice contacts on the same machine as the primary ORB server.

Configuring the ACD name parameter

You must configure an ACD name parameter for each ACD in your Avaya IC system. You can include identifying information, such as department or site in the ACD name.

To configure the ACD name parameter:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Telephony > ACD Name**.
3. Select **New**.
4. Type an alphanumeric name for the ACD in the **ACD Name** field.
Do not use spaces or special characters in the name.
5. Select **OK**.
6. Select **Manager > Refresh**.

If you do not receive a Success message, perform the steps in [Troubleshooting the refresh in IC Manager](#) on page 510.

Creating the Telephony server

The Telephony server (TS) is the connector server for the voice channel. This server interfaces with a switch (PBX), monitors phone calls, and controls telephony routing. This server uses the EDU server to record information on telephone calls. The Telephony server is specific to the switch you are using.

The Avaya IC installation program does not automatically add this server.

This section includes information about how to set up a Telephony server for a single site that does not receive more than 10,000 voice contacts per hour. If you need to configure a Telephony server for a more complex system or a higher volume site, or you would like more detailed information about the Telephony server, see *IC Telephony Connectors Programmer Guide*.

For information about how to configure the VDN, CDN, or CCT on each link of the switch to communicate with the Telephony server, see *IC Installation Planning and Prerequisites*.

To create a Telephony server:

1. Select **Server > New** in IC Manager.
2. Select **TS** from the list of servers. Select **OK**.

Configuring Telephony

3. Select the **General** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	TS_<domain>_<switch>	Include the name of the domain and the name of the switch in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Voice1</code> from the drop-down list if the server is in the Voice domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Perform the steps shown in the following table to configure the Telephony server for your system's switch:

Telephony switch	Location of step
Avaya DEFINITY or Avaya Communication Manager (Avaya DEFINITY/Communication Manager)	Configuring the Telephony server for Avaya DEFINITY or Avaya Communication Manager on page 195
Aspect	Configuring the Telephony server for Aspect on page 197
Nortel Meridian	Configuring the Telephony server for Nortel Meridian Link on page 199
Nortel Symposium	Configuring the Telephony server for Nortel Symposium on page 200

Configuring the Telephony server for Avaya DEFINITY or Avaya Communication Manager

For information about the interface between Avaya products and the Avaya IC Telephony server, see *Telephony Connectors Programmer's Guide*.

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the Telephony Server for Avaya DEFINITY/Communication Manager:

1. If you have not already done so, double-click the Telephony server in the list of servers.
2. Select the **TS** tab and complete the fields as shown in the following table:

Field	Recommended entry	Notes
ACD Name	Select the name of the ACD assigned to the Avaya switch.	This is the name of the ACD that this TS is serving from a pick list of names assigned to the ACD during system configuration.
ACD Type	Select Avaya	The type of ACD with which the TS will communicate.
ACD Model	Select Definity	The model of the ACD that corresponds to the selected ACD Type.
ACD Protocol	Select asai	The protocol to be used between the TS and the ACD. If your system includes a Legacy TS with switch with Avaya DEFINITY software, see <i>IC/OA Software Upgrade and Data Migration</i> .
Site	Select the site of your TS.	Select the site that this server is associated with. The TS uses this information to retrieve the queues for internal monitoring.

Configuring Telephony

Field	Recommended entry	Notes
ACD Link	Enter the IP address (or a name if it can be resolved into an IP) of the MAPD card set. Maximum length is 32.	The ACD Link is the device through which the Avaya TS communicates with the ACD.
Signal Number	Specify a signal number when configuring multiple Avaya users on a single machine. There is no default value in the TS, but IC Manager sets this value to 1. Maximum length is 8.	The signal extension number of the ASAI line associated with each TS. The signal number is mandatory, if it is not specified, the TS will not be able to establish the link between users.

Tip:

The Telephony server also has some additional configuration parameters that you can add on the **Configuration** tab. For example, you can add a parameter to handle blocked ANIs. For more information, see *IC Administration Volume 1: Servers & Domains* and *IC Telephony Connectors Programmer Guide*.

3. Select **OK**.

Configuring the Telephony server for Aspect

For information about the interface between the Aspect CallCenter switch and the Avaya IC TS, see *Telephony Connectors Programmer's Guide*.

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the Telephony Server for Aspect:

1. If you have not already done so, double-click the Telephony server in the list of servers.
2. Select the **TS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select the name of the ACD assigned to the Aspect switch.	This is the name of the ACD that this TS is serving from a pick list of names assigned to the ACD during system configuration.
ACD Type	Select Aspect	The type of ACD with which the TS will communicate.
ACD Model	Select Aspect8	The model of the ACD that corresponds to the selected ACD Type.
ACD Protocol	Select AspectCMI	The protocol to be used between the TS and the ACD. Avaya IC automatically selects AspectCMI when ACD Type of Aspect is selected.
Site	Select the site of your TS.	Select the site that this server is associated with. The TS uses this information to retrieve the queues for internal monitoring.
Aspect Contact Server Host	Enter the IP address of the machine that hosts the Aspect Contact server.	
Data Interlink Number	Enter the Data Interlink number.	The Data Interlink number from the Aspect ACD the TS uses to communicate with the ACD.
Aspect Header	Enter the link definition on the Aspect switch.	If this field is empty, the server uses the machine name of the ACD.

Configuring Telephony

Field	Recommended entry	Notes
Device	Enter the TCP/IP port where the TS needs to create a connection. Default is 7,046.	For a list of default port numbers for components in the Avaya IC suite, see the <i>IC Installation and Configuration</i> .
Monitored Agent Group	Enter the number assigned to the agent group to monitor. Default is 1.	Do not complete this field if the TS is monitoring all the agent groups on Avaya IC.
Monitored Trunk Group	Enter the number assigned to the trunk group to monitor. Default is 1.	Do not complete this field if the TS is monitoring all the trunk groups on Avaya IC.
Monitor All Agent Groups	Check this box if you want the TS to monitor all agent groups. Default is unchecked.	This overrides the entry in the Monitored Agent Group field.
Monitored Super Agent Group	Enter the number assigned to the super agent group to monitor. Default is 1.	Leave this field blank if you do not want the TS to monitor the super agent group.
Monitor All Trunk Groups	Check this field if you want the TS to monitor all trunk groups. Default is unchecked.	This overrides the entry in the Monitored Trunk Group field.
Blind Transfer CCT	Enter the Call Control Table number used to perform blind transfers.	
Make Call CCT	Enter the Call Control Table number used to make calls within the Aspect switch.	
External Calls CCT	Enter the Call Control Table number used to make calls external to the Aspect switch.	
Route CCT	Enter the Call Control Table number used to route calls external to the Aspect switch.	
Transfer CCT	Enter the Call Control Table number used during call transfers.	

Field	Recommended entry	Notes
Transfer Init CCT	Enter the Call Control Table number used during transfer init operations.	
Predictive CCT	Enter the Call Control Table number used during predictive operations.	

Tip:

The Telephony server also has some additional configuration parameters that you can add on the **Configuration** tab. For example, you can add a parameter to handle Aspect data variables. For more information, see *IC Administration Volume 1: Servers & Domains* and *IC Telephony Connectors Programmer Guide*.

3. Select **OK**.

Configuring the Telephony server for Nortel Meridian Link

For information about the interface between Nortel Meridian switches and the Avaya IC TS, see *Telephony Connectors Programmer's Guide*.

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the Telephony Server for Meridian Link:

1. If you have not already done so, double-click the Telephony server in the list of servers.
2. Select the **TS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select the name of the ACD assigned to the switch.	This is the name of the ACD that this TS is serving from a pick list of names assigned to the ACD during system configuration.
ACD Type	Select Nortel	The type of ACD with which the TS will communicate.
ACD Model	Select Meridian	The model of the ACD that corresponds to the selected ACD Type.
ACD Protocol	Select MLP.	This is the protocol used by the Symposium Server.

Configuring Telephony

Field	Recommended entry	Notes
Site	Select the site of your TS.	Select the site that this server is associated with. The TS uses this information to retrieve the queues for internal monitoring.
Link	The logical identifier in the server where NetMerge is running.	The Link establishes a path between a NetMerge client and a given PBX interface. The logical identifier is established in the NetMerge server configuration program.
Node	Enter the name of the server where NetMerge is running.	The Node needs to translate to an IP address via DNS or host table.

Tip:

The Telephony server also has an additional configuration parameter that you can add on the **Configuration** tab. For example, you can add a parameter to handle queues with mixed case names. For more information, see *IC Administration Volume 1: Servers & Domains* and *IC Telephony Connectors Programmer Guide*.

3. Select **OK**.

Configuring the Telephony server for Nortel Symposium

For information about the interface between Nortel Meridian switches and the Avaya IC TS, see *Telephony Connectors Programmer's Guide*.

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the Telephony Server for Symposium:

1. If you have not already done so, double-click the Telephony server in the list of servers.
2. Select the **TS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select the name of the ACD assigned to the switch.	This is the name of the ACD that this TS is serving from a pick list of names assigned to the ACD during system configuration.
ACD Type	Select Nortel	The type of ACD with which the TS will communicate.

Field	Recommended entry	Notes
ACD Model	Select Symposium	The model of the ACD that corresponds to the selected ACD Type.
ACD Protocol	Select MLS.	This is the protocol used by the Symposium Server.
Site	Select the site of your TS.	Select the site that this server is associated with. The TS uses this information to retrieve the queues for internal monitoring.
Link	The logical identifier in the server where NetMerge is running.	The Link establishes a path between a NetMerge client and a given PBX interface. The logical identifier is established in the NetMerge server configuration program.
Node	Enter the name of the server where NetMerge is running.	The Node needs to translate to an IP address via DNS or host table.

Tip:

The Telephony server also has an additional configuration parameter that you can add on the **Configuration** tab. For example, you can add a parameter to handle queues with mixed case names. For more information, see *IC Administration Volume 1: Servers & Domains* and *IC Telephony Connectors Programmer Guide*.

3. Select **OK**.

Creating the Telephony Queue Statistics server

The Telephony Queue Statistics server (TSQS) monitors the voice channel and maintains queue statistics in the ADU Server. These statistics include contact count and age of oldest contact.

You must include a TSQS server on all machines that host Outbound Contact servers.

If Business Advocate handles all routing for voice contacts, you do not need a TSQS server.

The Avaya IC installation program does not automatically add this server.

Configuring Telephony

To create the TSQS:

1. In IC Manager, select **Server > New**.
2. Select **TsQueueStatistics** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
Name	TsQueueStatistics_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Voice1</code> from the drop-down list if the server is in the Voice domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Perform the steps shown in the following table to configure the TSQS server for the switch:

Telephony switch	Location of step
Avaya DEFINITY or Avaya Communication Manager	Configuring the TSQS server for Avaya DEFINITY or Avaya Communication Manager on page 203
Aspect	Configuring the TSQS server for Aspect on page 204
Nortel Meridian	Configuring the TSQS server for Nortel Meridian Link on page 205
Nortel Symposium	Configuring the TSQS server for Nortel Symposium on page 206

Configuring the TSQS server for Avaya DEFINITY or Avaya Communication Manager

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the TSQS for Avaya DEFINITY or Avaya Communication Manager:

1. If you have not already done so, double-click the TSQS server in the list of servers.
2. Select the **TSQS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select an ACD Name.	The name of the ACD (switch) that this TSQS is serving. Provides a pick list of name(s) assigned to the switch during system configuration. Each TSQS on the system must have a unique ACD Name.
Site	Select the site where the TSQS is located.	The site used by your TS configured for the Avaya switch.
ACD Type	Select Avaya.	The ACD Type option used by your TS configured for the Avaya switch.
ACD Model	Displays Definity after you select Avaya as ACD Type.	The ACD Model option used by your TS configured for the Avaya switch.
ACD Protocol	Select asai.	The ACD Protocol option used by your TS configured for Avaya switch.

3. Select **OK**.

Configuring the TSQS server for Aspect

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the TSQS for Aspect:

1. If you have not already done so, double-click the TSQS server in the list of servers.
2. Select the **TSQS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select an ACD Name	The name of the ACD (switch) that this TSQS is serving. Provides a pick list of name(s) assigned to the switch during system configuration. Each TSQS on the system must have a unique ACD Name.
Site	Select the site where the TSQS is located.	The Site used by your TS configured for the Aspect switch
ACD Type	Select Aspect.	The ACD Type option used by the TS configured for the Aspect switch.
ACD Model	Select Aspect8.	The ACD Model option used by your TS configured for the Aspect switch.
ACD Protocol	Displays AspectCMI after you select Aspect8 as the ACD Model.	Select the ACD Protocol option used by your Telephony server configured for the Aspect switch.
Switch Name	Enter the IP address of the link that connects the switch to the TSQS.	This is different from the IP address used by the switch.
Switch Port	Enter the number of the port used by the switch.	

3. Select **OK**.

Configuring the TSQS server for Nortel Meridian Link

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the TSQS for Nortel Meridian Link:

1. If you have not already done so, double-click the TSQS server in the list of servers.
2. Select the **TSQS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select an ACD Name.	The name of the ACD (switch) that this TSQS is serving. Provides a pick list of name(s) assigned to the switch during system configuration. Each TSQS on the system must have a unique ACD Name.
Site	Select the site where the TSQS is located.	The site used by your TS configured for the Nortel switch using Meridian Link.
ACD Type	Select Nortel.	The ACD Type option used by your TS configured for the Nortel switch using Meridian Link.
ACD Model	Select Meridian.	The ACD Model option used by your TS configured for the Nortel switch using Meridian Link.
ACD Protocol	Select MLP.	The ACD Protocol option used by your TS configured for the Nortel switch using Meridian Link.
Switch Name	Enter the IP address of the link that connects the switch to the TSQS.	This is different from the IP address used by the switch.
Switch Port	Enter the number of the port used by the switch.	

3. Select **OK**.

Configuring the TSQS server for Nortel Symposium

This section includes only the basic required properties. For more information about the advanced properties, see *IC Administration Volume 1: Servers & Domains*.

To configure the TSQS for Nortel Symposium:

1. If you have not already done so, double-click the TSQS server in the list of servers.
2. Select the **TSQS** tab and complete the fields as shown in the following table.

Field	Recommended entry	Notes
ACD Name	Select an ACD Name.	The name of the ACD (switch) that this TSQS is serving. Provides a pick list of name(s) assigned to the switch during system configuration. Each TSQS on the system must have a unique ACD Name.
Site	Select the site where the TSQS is located.	The site used by the TS configured for your Nortel switch using Symposium Server.
ACD Type	Select Nortel.	The ACD Type option used by your TS configured for the Nortel switch using Symposium Server.
ACD Model	Select Symposium.	The ACD Model option used by your TS configured for the Nortel switch using Symposium Server.
ACD Protocol	Select MLS.	The ACD Protocol option used by your TS configured for the Nortel switch using Symposium Server.
Switch Name	Enter the IP address of the link that connects the switch to the TSQS.	This is different from the IP address used by the switch.
Switch Port	Enter the number of the port used by the switch.	

3. Select **OK**.

Creating a voice queue

The sample Incoming Call workflow uses the DefaultVoiceQueue@DefaultTenant voice queue. Avaya recommends that you create this queue and additional queues, including a queue for each of the possible route (transfer) points where the Incoming Call workflow can route a voice contact.

Avaya IC uses voice queues for the following:

To gather statistics information - The TSQueueStatistics server monitors the queues and maintains statistics in the ADU server. These statistics can then be processed by, for example, Avaya OA. For more information, see [Creating the Telephony Queue Statistics server](#) on page 201.

To provide a literal translation for a switch device - With this literal translation, you can reference a destination in the switch. For example, you can reference VDN 1234 as queue_sales. Avaya IC displays queue_sales as a destination in the Unified Agent Directory.

To provide support for multi-site heterogeneous switches - Avaya IC uses the information you enter in the Voice tab of the queue to support multi-site heterogeneous switches. For more information, see *Telephony Connectors Programmer's Guide*.

To integrate with routing hints - You add the ID of the voice queue to the RoutingHint table when you configure the routing hints used by the Incoming Call workflow. For more information about routing hints, see [Creating routing hints for the Incoming Call workflow](#) on page 216.

The following procedure explains how to create a simple voice queue. For information about more complex voice queues, including transfer queues and queues for multi-site heterogeneous switches, see *IC Administration Volume 2: Agents, Customers, & Queues* and *IC Telephony Connectors Programmer Guide*.

To create a simple voice queue:

1. In IC Manager, select the **Device** tab.
2. Select **Device > New Device**.
3. In the **New Device** dialog box, select **Voice Queue**. Select **OK**.

Configuring Telephony

4. In the **Device Editor (Voice)** dialog box:

a. Select the **General** tab and complete the fields shown in the following table.

Field	Recommended entry	Description
Id	The device number known to the PBX (or ACD).	The ID is the VDN or vector identifier that your PBX or ACD uses for the queue. The ID must be a numeric value. For a Nortel Meridian switch with Symposium, the ID must be the name of the SkillSet defined in the PBX or ACD.
Site	Select the site of your Telephony server.	
ACD Name	Select the name of the ACD.	This is the ACD Name that you confirmed in Configuring the ACD name parameter on page 193,
Name	Type a name for the voice queue.	For the default voice queue, type DefaultVoiceQueue@DefaultTenant. Queue names can have up to 256 characters, including special characters and spaces. Queue names cannot: <ul style="list-style-type: none"> • Start with a digit • Start with an asterisk "*" or a pound sign "#" • Contain "@" (except default queue) The Unified Agent Directory displays this name to agents.
Media	Voice	Automatically set by IC Manager. You cannot change this field.
Priority	Assign a priority to the queue.	For example, type 1.
Service Level	Type the number of hours, minutes, and seconds in the format HH:MM:SS	The service level defines the time within which all voice contacts in the queue must be answered. Type the time in the format HH:MM:SS.

Field	Recommended entry	Description
Minimum agents	1	Type the minimum number of agents who must be active to use the queue.
Addressable	Check this box.	Determines whether the queue is displayed in the Unified Agent Directory.

b. Select the **Voice** tab and complete the fields in the following table.

Field	Recommended entry	Description
Enable EDU Tracking		<p>If selected, the first Telephony server in the TS Set monitors this queue internally.</p> <p>Select this option only under one of the following conditions:</p> <ul style="list-style-type: none"> ● The switch and CTI link cannot make a call-to-data association. ● The switch supports queue monitoring. ● The environment is configured to ensure that new contacts are pre-processed by one Telephony server, where all the queues reside, but all agents are handled by another Telephony server. (Usually the pre-process has to do with call routing and queue monitoring.) <p>Note: In addition to selecting this check box, make sure that the associated Telephony server is the first one in the TS Set list.</p>

Configuring Telephony

Field	Recommended entry	Description
Wait Treatment Style	Type a numeric value for a wait treatment if you want customers on this queue to hear a wait treatment while on hold.	The numeric value associated with the wait treatment configuration on the switch. For more information, contact your switch administrator.
TS Set	Select the Ellipsis (...) button and in the dialog box: <ul style="list-style-type: none">● Select New.● Select the Telephony server that handles voice contacts for this queue from the drop-down list.● After you have added all of the Telephony servers, select OK.	Defines the Telephony servers that can be used to deliver voice contacts to this queue, and the order that the Multi-Site Heterogeneous Switch (MSHS) mechanism follows when attempting to deliver contacts to specific queues. In order to do this, the MSHS uses the ADU for its central data store. The TS Set can only include Telephony servers that handle contacts from the switch where the queue resides Note: Queue names are kept in cache for 24 hours.

5. Select **OK**.

Starting the Telephony servers



Important:

Create the voice queues before you start the Telephony server and the TSQS server.

To start Telephony servers:

1. Right-click on the Telephony server and select **Start** from the menu.

After the Alarm Monitor displays a message confirming that the server has started correctly, continue with the next step.

2. Right-click on the TSQS server and select **Start** from the menu.

After the Alarm Monitor displays a message confirming that the server has started correctly, continue with the next step.

3. Set your Telephony server to start automatically:
 - a. Double-click the Telephony server in the list of servers.
 - b. Select the **General** tab.
 - c. Check the **Autostart** box.
 - d. Select **OK**.
4. Set your TSQS server to start automatically:
 - a. Double-click the TSQS server in the list of servers.
 - b. Select the **General** tab.
 - c. Check the **Autostart** box.
 - d. Select **OK**.

Configuring a Workflow server for Telephony

To create and configure a Workflow server for Telephony, perform the steps in the following topics:

1. [Creating a Workflow server for Telephony](#) on page 211
2. [Configuring the voice channel for the Workflow server](#) on page 212

If the Avaya IC system includes multiple Workflow servers, perform these steps on each Workflow server that processes voice contacts.

Creating a Workflow server for Telephony

These instructions only provide information about those parameters you need to set when you create a Workflow server to handle voice contacts. For more information about other parameters in the Workflow server, see [Configuring multiple Workflow servers](#) on page 135 and *IC Administration Volume 1: Servers & Domains*.

To create a Workflow server for Telephony:

1. In IC Manager, select **Server > New**.
2. Select **Workflow** from the list of servers.
3. Select **OK**.

Configuring Telephony

4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Workflow_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Voice1</code> to use the preconfigured domain for Telephony.
Host	Select the machine's IP address from the drop-down list, or type the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **Workflow** tab.

6. From the **IC Data Source** drop-down list, select the Interaction Center data source.

The default name for this data source is `interaction_center`. This is the data source that you created in [Generating the Interaction Center application](#) on page 109.

7. Select **Synchronous Startup Flows**.

8. If the following row does not exist, add it to the Synchronous Startup Flows:

- a. Select **New**.
- b. In the new row, type `web_routing.update_gw_cache`
- c. Select **OK**.

9. Continue with [Configuring the voice channel for the Workflow server](#) on page 212.

Configuring the voice channel for the Workflow server

To configure the voice channel for the Workflow server:

1. In the Server Editor for the Workflow server, select the **Channels** tab.
2. Select **New Channel**.

3. In the **Channel Editor** dialog box, complete the fields as shown in the following table. Select **OK**.

Field	Recommended entry	Notes
Global	Do not check this field.	Do not check this field to create a channel for a specific server or media, such as Telephony.
By Server	<ul style="list-style-type: none"> Do not check this field if you want this channel to handle events from all servers of the type that you select from the Service drop-down list. Check this field if you want this channel to handle events from only one specific server that you select from the Service drop-down list. 	<p>If you check this field, and you need this Workflow server to communicate with more than one server, you must create another channel for that server.</p> <p>Warning: If you check this field and the Telephony server is named "TS", the Workflow server will not be able to communicate with the Telephony server.</p>
Channel Range	No entry necessary.	Completed by IC Manager
Service	Select TS or a specific Telephony server from the drop-down list.	Whether you can select a server or a type of server, depends up whether or not you checked the By Server field.
Criteria	Type the criteria you want the workflow to use for the event.	<p>For example, you can enter a criteria for the workflow to route calls that arrive at a routing point.</p> <p>For a detailed description of the criteria for each server and server type, see the description of the <code>Assign</code> method in the Programmer Guide for that server. For example, to see criteria for the Telephony server, see <i>IC Telephony Connectors Programmer Guide</i>.</p>

4. Select the channel that you created in the step above.

5. Select **New Association**.

Configuring Telephony

6. In the **Channel Association** dialog box, complete the fields as shown in the following table. Select **OK**.

Field	Recommended entry
Channel Range	Completed by IC Manager
Service Interface	Completed by IC Manager
Event	TS.IncomingCall Note: This field is case-sensitive.
Flow	Type <code><workflow_project>.<routing_workflow></code> For example, if you use the sample Incoming Call workflow, type <code>ts.incomingcall</code> Note: This field is case-sensitive.

7. Select **OK**.
8. Select **OK**.
9. In the Server tab of IC Manager, select the Workflow server that handles voice contacts.
10. Right-click the Workflow server and select **Start**.

Building and loading workflows for Telephony

You can use the sample workflows to configure and test your Telephony servers. When you move into production, modify the properties of the sample workflows to meet your system needs and configuration. For more information about the sample workflows and ways to customize them, see *Avaya IC Media Workflow Reference*.

For each workflow project, perform the steps in the following topics:

1. [Building the Incoming Call workflow](#) on page 215.
2. [Loading workflows in the Workflow server](#) on page 215.

Building the Incoming Call workflow

You do not need to configure any blocks to use the sample Incoming Call flow.

To build the Incoming Call workflow:

1. In Workflow Designer, select **File > Open Project** and open the TS project.

You can find the TS project in the following directory:

```
IC_INSTALL_DIR\IC61\design\IC\Flows\Avaya\TS\TS.prj
```

2. Double-click incomingcall.qfd in the **Project** pane.

3. Select **Project > Settings**.

4. Select the **Database** tab and type the following values:

- Interaction Center Data Source name in the **IC Data Source** field
- Valid Avaya IC Administrator account in the **Login ID** field

The default account is Admin.

- Password for the account in the **Password** field

5. Select **OK**.

6. Select **Build > Build Flowset**.

Workflow Designer verifies and compiles the flows. All error messages, including the block name, script name, and offending line, are displayed in the Output bar.

7. Select **File > Exit** to exit Workflow Designer.

Loading workflows in the Workflow server

When you build a flowset, Workflow Designer does not automatically load and run the workflows in the Workflow server. You can reload workflows without restarting the Workflow server.

Tip:

Test the workflows and confirm that they work correctly. If the Workflow server is not running the new workflows, stop and restart the server.

To reload workflows in the Workflow server:

1. In IC Manager, select the **Servers** tab and double-click the Workflow server.
2. In the **Workflow server** settings dialog box, select the **Workflow** tab.
3. Select **Reload Flows**.

4. In the **Reload Flows** dialog box:
 - a. Select **Force Immediate Reload**.
 - b. Select **OK** to reload all currently loaded workflows even if the version numbers are the same.
5. Select **OK**.

Creating routing hints for the Incoming Call workflow

The Add Routing Hints (DNIS) block in the Incoming Call workflow uses the routing hints in the RoutingHint table of the Directory server to route incoming voice contacts. The sample Incoming Call workflow requires at least one routing hint for the main incoming DNIS number. Assign this routing hint to a voice queue that you created in [Creating a voice queue](#) on page 207.

You can create routing hints for one or more additional DNIS numbers, if required by your contact center.



Important:

Routing hints must be in lower case. Do not use mixed upper and lower case in your routing hints. If the routing hint is not in all lower case, the workflow cannot locate the routing hint, and Avaya IC cannot correctly route the contact.

Each row in the routing hint table contains the following:

- A routing hint
- The name of the voice queues where contacts that match the routing hint should be routed

For more information about how workflows use routing hints, see *Avaya IC Media Workflow Reference*.

To create routing hints:

1. In IC Manager, select the **Configuration** tab.
2. In the left pane, select **Tables > Workflow > RoutingHint**.
3. Select **New**.

4. In the right pane, complete the fields shown in the following table:

Parameter	Recommended entry	Description
Routing Hint	Type a routing hint.	For the sample Incoming Call workflow, create a routing hint with the DNIS for the incoming calls. For example, if the DNIS is 21000, type 21000 in this field. The routing hint must be a single word in all lower case or a series of numbers. Do not use special characters.
Voice Queue ID	Type the name of a voice queue.	Avaya recommends that you do not use DefaultVoiceQueue@DefaultTenant for routing hints. For information on how to create a voice queue, see Creating a voice queue on page 207.
Category/Qualifier	Leave this field blank.	Business Advocate uses this field.
Tenant	Leave this field blank.	Telephony does not use tenancy.

5. Select **OK**.

6. Select **Manager > Refresh**.

■ ■ ■ ■ ■ ■

Chapter 9: Configuring Outbound Contact

Avaya Interaction Center (Avaya IC) uses Avaya Outbound Contact Management (Outbound Contact) to initiate and report on outbound calling campaigns.

To configure Outbound Contact, perform the steps in the following topics:

1. [Prerequisites for Outbound Contact](#) on page 219.
2. [Creating a secondary server environment for Outbound Contact](#) on page 220.
3. [Configuring the Dialer database](#) on page 220.
4. [Configuring servers for Outbound Contact](#) on page 228.
5. [Configuring disconnects for answering machine and nuisance calls](#) on page 237.
6. [Configuring Outbound Contact Reports](#) on page 238.
7. [Configuring Web scheduled calls](#) on page 240.

Tip:

After you configure Outbound Contact, you must perform the tasks needed to set up and administer your outbound jobs. For more information, see *IC Administration Volume 2: Agents, Customers, & Queues*.

Prerequisites for Outbound Contact

Before you configure Outbound Contact, you must perform the following steps:

1. Install the database client for your database system on all machines that host Outbound Contact servers and Outbound Contact Reports.
2. Install and configure Telephony components.
3. Create the CCQ database, as described in [Creating the CCQ database](#) on page 108.

Creating a secondary server environment for Outbound Contact

You must create a secondary server environment, including a secondary ORB server, if you host the servers that you need to configure for Outbound Contact on a different machine than the machine that hosts the primary ORB server.



CAUTION:

Do not create a secondary server environment on the machine that hosts your primary ORB server.

For more information about how to create a secondary server environment, see [Configuring secondary servers](#) on page 161.

Configuring the Dialer database

Outbound Contact uses a separate database to store data that is specific to outbound calling jobs. You must configure that database.

To configure the dialer database, perform the steps in the following topics:

1. [Configuring the Dialer database connection](#) on page 220.
 2. [Configuring the Dialer connection set](#) on page 225.
 3. [Creating the Dialer database](#) on page 226.
 4. [Generating the Dialer application and data source](#) on page 227.
-

Configuring the Dialer database connection

To configure the database connection for the Dialer database:

1. In Database Designer, open the `dialer.adl` file.

The ADL file is in the

`IC_INSTALL_DIR\IC61\design\Softdialer\dialer.adl` directory.

If you have enabled Database Designer for localization, select **OK** and ignore the warnings about the missing ALF file and ALM file. Database Designer automatically generates the ALF file and ALM file when you save the ADL file. For more information, see [Enabling Database Designer for localization](#) on page 545.

2. Expand **Components > Physical DB Connections** and select the Dialer database connection in the tree pane.
3. In the DB Connection **Properties** tab, complete the fields in the General group as shown in the following table:

Property	Recommended entry	Notes
Timeout (sec)	Type the maximum number of seconds that the client application waits for a response to a database request before the application assumes the connection to the Data server is lost.	Default value is 60 seconds. If no response is returned within the specified time, the client application closes the connection to the Data server and returns an error. The client application attempts to create a new connection to the database on the next database request. For information about when to increase this value, see Troubleshooting Outbound Contact Management on page 523.
Description	Type a description of the database connection, if desired.	You can leave this field empty.
Display Time	Select DBMSTime as the display time setting that specifies how DateTime data from the database is presented in the client application.	If you do not select DBMSTime, Outbound Contact cannot function correctly. Times used for roster and calendar values can be incorrectly adjusted if you use either of the other two options.

4. From the Database Type drop-down menu, select the type of database to which you want to connect.

Database Designer uses the selected database type to generate a SQL statement which can be applied to the database.

Configuring Outbound Contact

5. Complete the Mandatory fields for your database, as shown in the following table.

Database type	Property	Recommended entry	Notes
All database types	Data Server Type/Alias	Type the name of the primary Data server.	This server is the one that you created in Setting up the primary Data server on page 79. For example, defaults are: <ul style="list-style-type: none"> ● DataServerMSSQL ● DataServerOracle ● DataServerDB2
SQL Server	Database server	Type the host name of the machine that hosts your database server.	For the default database instance, type the host name. For another database instance, type <code><machine>\<db_name></code> .
	Database Name	Type the name of the database. For example, dialer .	Avaya recommends that you use dialer to reduce the possibility of a migration impact.
Oracle	TNS Name	Type the server alias from the tnsnames.ora file	For example, type support.xyzcorp.com.
	Database Name	Type the name of the Oracle user for the database. For example, dialer .	Avaya recommends that you use dialer to reduce the possibility of a migration impact.
	Client Library Home Directory	Type the full directory path for the Oracle client on the machine that hosts the Data server.	For example, type <code><oracle_install_dir>/opt/oracle/8.1.7</code>
DB2	DB2 Database Name	Type the name of the DB2 database that includes the Avaya IC schema.	DB2 allows a maximum of eight characters for database names. For example, type db2IC.
	IC Schema Name	Type the schema name of the database. For example, dialer .	Avaya recommends that you use dialer to reduce the possibility of a migration impact.
	Database Territory	Type the territory that represents the locale of the database that includes the Dialer schema.	The territory defines the language and locale of the database. For more information, see the DB2 documentation.

6. If necessary, complete the Optional fields for your database, as shown in the following table.

Database type	Property	Recommended entry	Notes
SQL Server	Database Location	Leave this field blank.	Identifies the logical space where the named database is stored. The SQL Server DBMS specifies the database location.
	Database Size	Leave this field blank.	The size of the database location specifies the amount of space that the configured application database occupies. The SQL Server RDBMS specifies the database size.
	Log Location	Leave this field blank.	Database-generated log files store cumulative transaction information. The SQL Server RDBMS specifies a default location for the database log.
	Log Size	Leave this field blank.	The size of the location for database log files specifies the amount of space that the database-generated log files can occupy. The SQL Server RDBMS specifies a default size for the database log.

Configuring Outbound Contact

Database type	Property	Recommended entry	Notes
Oracle	Default tablespace name	Type the name of the default tablespace where objects are created for the Avaya IC databases. For example, type IC_TS .	The database location identifies the logical space where the named database is stored. If you leave this field blank, and the Oracle RDBMS does not specify a database location, Oracle uses the "system" space to define the database. Caution: Configuring a database in the system space can crash your database.
	Default tablespace size	Type the number of bytes for the size of the default tablespace.	Caution: If you do not specify a default tablespace size here, and your RDBMS does not define the default tablespace size, the default tablespace can expand to use all available space.
	Temp tablespace name	Type the name of the tablespace that stores temporary files. For example, type T_CI_TEMP .	Temporary tables store database-generated intermediate sorting files and client session information for Oracle databases. If you do not specify a location for temporary tables, the location is specified by the Oracle RDBMS.
	Temp tablespace size	Type the number of bytes for the size of the tablespace that includes temporary tables.	The size of the location for temporary tables in Oracle databases specifies the amount of space that the temporary tables can occupy. If you do not specify the amount of space to be allocated for temporary tables, the size is specified by the Oracle RDBMS.

Database type	Property	Recommended entry	Notes
DB2	Catalogued Node	Type the remote node on the machine that hosts the Data server.	Complete this field if you host your Data server on a different machine from the Avaya IC databases.
	Tablespace Name	Type the name of the tablespace used by the Dialer database.	Complete this field if you created a dedicated tablespace that the IC Repository database uses. Note: Avaya OA requires dedicated tablespaces. For more information, see <i>Avaya OA Installation Planning and Prerequisites</i> .

7. Select **File > Save** to save the ADL file. Do not close the file.

Configuring the Dialer connection set

To configure the connection set for the Dialer database:

1. In Database Designer, expand **DB Connection Sets** and select **defaultDBConnectionSet** in the tree pane.
2. Select **Dialer** from the **Logical DB Connections** list in the Connection Set **Properties** tab and make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select the Dialer connection.
Primary	Check this box.

3. Select **CallCenterQ** from the **Logical DB Connections** list and make sure the properties are set as shown in the following table:

Field	Recommended entry
Physical DB Connection	Select the Dialer connection.
Primary	Do not check this box.

Configuring Outbound Contact

Field	Recommended entry
Use External Database	Check this box.
Database Name	Type the name of your CallCenterQ database. This name must be the exact name that you gave your CallCenterQ database. For example, type <code>ccq</code> .

4. Select **File > Save** to save the ADL file. Do not close the file.

Creating the Dialer database

To create the Dialer database:

1. In Database Designer, select **File > Database Administration**.
2. Select the Dialer Connection from the **DB Connection Set** list.
3. Set the options as shown in the following table:

Field	Recommended entry
Configure	Select Configure .
Import Seed Data	Check this box.

4. If the fields in the following table do not have entries, re-type your IC Manager account and password.

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

5. Select **Run** to configure the database.

Database Designer pauses briefly between configuring the database and importing the seed data.

6. Select **Close**.

Generating the Dialer application and data source

You generate the Dialer application to initialize the database with the ADL and version information, and to create the Dialer data source.

To generate the Dialer application and data source:

1. In Database Designer, select **File > Generate Windows Application**.
2. Check the Messages box to load the files to the database:
3. Select **dialer** from the **Name** list.
4. Type the path for the directory where you want Database Designer to store the application files.
For example, type `IC_INSTALL_DIR\IC61\apps`.
If you do not know the directory path, select the **Ellipsis (...)** button and navigate to the directory.
5. From the **DB Connection Set** drop-down list, select **defaultDBConnectionSet**.
6. If the fields in the following table do not have entries, re-type your IC Manager account and password.

Field	Recommended entry
Login Id	Type your IC Manager login ID. Note: Do not use your DBA login ID and password.
Password	Type your password.

7. Select **OK**.

Database Designer creates a new folder with the same name as the application in the target directory.

Configuring servers for Outbound Contact

Perform the following steps to configure the servers for Outbound Contact:

1. [Modifying the server configuration file](#) on page 228.
2. [Creating an administrative user for Outbound Contact](#) on page 229.
3. [Creating the Softdialer server](#) on page 231.
4. [Creating the Dialing Kernel server](#) on page 233.
5. [Configuring multiple Dialing Kernel servers](#) on page 235.
6. [Updating the runtime settings for Outbound Contact](#) on page 236.

Modifying the server configuration file

The `mcsccon.ini` file contains the configuration parameters for Outbound Contact servers. You can modify this file in a text editor.

Avaya IC installation copies the `mcsccon.ini` file to the `IC_INSTALL_DIR\IC61\etc` folder on the machine that hosts your Outbound Contact servers.

To modify the Outbound Contact configuration file:

1. In a text editor, such as Notepad, open `IC_INSTALL_DIR\IC61\etc\mcsccon.ini`
2. Find the following section:

```
[CCLIC]
TRACE.ALL           = ON
LOCALFORMAT        = E
INTERLOCALFORMAT   = AE
INTERNATIONALFORMAT = CAE
SYSTEMAREA         = 425
SYSTEMCOUNTRY      = 1
```

3. Verify that the entries of this section are accurate, or replace the entries with values for the area code, country code, and formats of the contact center. For more information about:
 - Codes used for the *format* parameters, see *IC Administration Volume 1: Servers & Domains*
 - Country codes, see *IC Administration Volume 2: Agents, Customers, & Queues*

4. In the Call Control Layer [CCLIC] section of the file:

- a. Set the value of the `PredictiveRoutePoint` property to the value of the Predictive Route Point on your switch.
- b. Verify that the value of the `Allocation = %AM_DETECTION%` property is the following, or replace this default value:

```
Allocation = 2
```

5. Find the following section:

```
LoginName =
Password =
```

6. Replace with:

```
LoginName = <Administrative_account_name>
Password = <password>
```

This is the administrative account and password that you created in [Creating an administrative user for Outbound Contact](#) on page 229. For example, if you use the default Administrative account for Outbound Contact, use the following values:

```
LoginName = pdkdevctrl
Password = dialer1
```

7. Save and close the file.

Creating an administrative user for Outbound Contact

Outbound Contact requires an administrative account in the same domain as Outbound Contact. This account is reserved for use by the Outbound Contact servers. Do not allow an agent to use this account to log in to Avaya IC. Do not change the password for this account.

The procedure in this section creates an administrative user named `pdkdevctrl` with a password of `dialer1` for Outbound Contact and the associated Telephony servers. You can use any login ID and password for the administrative user. However, you must make sure that the login information in the following are configured to use that administrative user and password:

- Outbound Contact `mcscon.ini` file
- **TS** tab of the Telephony server

To create administrative accounts:

1. In IC Manager, select the **Agent** tab.
2. Select **Administrator** in the left pane.

Configuring Outbound Contact

3. Select **Agent > New**.

4. Select the **General** tab and complete the fields as shown in the following table:

Field	Description
First Name	Required field Type <code>pdkdevctrl</code> .
Last Name	Required field Type <code>pdkdevctrl</code> .
Preferred Name	Required field Type the administrative user name. For example, type <code>pdkdevctrl</code> .
Employee ID	Type the employee ID. For example, type <code>pdkdevctrl</code> .
Login ID	Type the login ID. For example type <code>pdkdevctrl</code>
Domain	Required field Select the domain used by the Dialing Kernel server and the Telephony server.
Task Load	Required field Set to 0.
Task Ceiling	Required field. Set to 0.
Site	Select a site from the drop-down list. Note: Avaya IC uses the Site to compile statistics for groups or agents or queues.

5. Select the **Channels** tab and complete the fields as shown in the following table:

Field	Recommended entry
Disable Voice Channel	Do not check this box.
Phone Id	Leave this field empty.
Password	Leave this field empty.
Phone type	Select eas from the drop-down list.
Equipment	Leave this field empty.
Queue	Leave this field empty.

Field	Recommended entry
Task Load	Accept the default value of 1.
Task Ceiling	Accept the default value of 1.

6. Select the **Security** tab and complete the fields as shown in the following table:

Field	Recommended entry
Password	Type the password for this account. For example, type <code>dialer1</code> as the password.
Confirm	Re-type the password for this account.
Force password change on login	Do not check this field.
Disable login	Do not check this field.
Administrator	Check this field.

7. Select **Apply**.

8. Select **OK**.

9. If you did not use the defaults administrative user name and password shown in the above procedure, update the login ID and password in the `mson.ini` file and the Telephony server as described in [Configuring multiple Dialing Kernel servers](#) on page 235.

Creating the Softdialer server

The Softdialer server provides support for outbound agent call management and for web scheduled calls. The Avaya IC installation program does not automatically add this server.

To create the Softdialer server:

1. Select **Server > New** in IC Manager.
2. Select **Softdialer** from the list of servers. Select **OK**.

Configuring Outbound Contact

3. Select the **General** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	SoftDialer_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	This server does not have to be in the same domain as the Telephony server and the Predictive Dialing Kernel server. However, Avaya recommends that you put this server in the same domain for consistency. All domains for Outbound Contact agents must failover to this domain. For example, select <code>Voice1</code> from the drop-down list if the servers are in the Voice domain.
Host	Select the machine's IP address from the drop-down list, or type the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **Softdialer** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the IC Data Source for the Dialer database.	If you used the default name, select <code>Dialer</code> .
Site	Select a site where the SoftDialer server is located from the drop-down list.	Avaya IC uses the Site to compile statistics for groups or agents or queues.
Enable Polling	Check this field.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.
Polling Rate (sec)	30	Enter the number of seconds between polls.

Field	Recommended entry	Notes
Enable Agent Dispatching	Check this field.	Select this check box if the SoftDialer server will be responsible for dispatching agents between inbound channels and the outbound channel. If it is selected, the SoftDialer will blend agents based on each channel's service level exception. If this is cleared, some other components or scripts in the system must manage agent blending between inbound and outbound.
Agent Dispatching Rate (sec)	30	If Enable Agent Dispatching is selected, use this parameter to specify how often to check each channel queue's service level exception and dispatch agents between inbound and outbound channel as needed. The minimum is 10 seconds.

5. Select **OK**.
6. Start the server.

Creating the Dialing Kernel server

The Dialing Kernel server enables outbound dialing for Outbound Contact. This server also integrates with the Telephony server and places outbound calls for jobs based on priority, dialing mode, and agent availability. For more information about the Dialing Kernel server and Outbound Contact, see *IC Administration Volume 2: Agents, Customers, & Queues*.

The Avaya IC installation program does not automatically add this server.

You must create the Dialing Kernel server in the same domain and on the same machine as the Telephony server that it uses.

Note:

The Dialing Kernel server does not support failover.

To create the Dialing Kernel server:

1. Select **Server > New** in IC Manager.
2. Select **DialingKernel** from the list of servers. Select **OK**.

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3. Select the **General** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Dialing_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	This server must be in the same domain as the Telephony server and the Softdialer server. For example, select <code>Voice</code> from the drop-down list if the server is in the Voice domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **DialingKernel** tab.

5. Avaya recommends that you type 1:00 in the **Time to Run** field.

If you want the server to go through the event report once a day and write selected events to the database for reporting purposes, enter the time of day that this process should run in this field (format HH:MM). Time when the call data records are taken from the Dialing Kernel call detail record (CDR) file and entered in the database. The Dialing Kernel server outputs the file at midnight. If you set the Time to Run to 1:00, the data records will be entered into the database at 1:00 a.m. If you do not specify this parameter, then the server does not write the daily events to the database.

For information about the other fields on the DialingKernel tab, see *IC Administration Volume 1: Servers & Domains*.

6. Select **OK**.

7. Start the server.

Configuring multiple Dialing Kernel servers

You can include multiple Dialing Kernel servers in an Avaya IC system. However, you must host each Dialing Kernel server on a different machine and configure the server configuration file to

To configure an Avaya IC system for multiple Dialing Kernel servers:

1. Update the `mcscon.ini` file on each machine that hosts a Dialing Kernel server with the user name and password of the administrative account for that server.

For more information, see [Modifying the server configuration file](#) on page 228.

2. In IC Manager, create a separate `pdkdevctrl` administrative account for each Dialing Kernel server that matches the information in the `mcscon.ini` file. This account must have a login that includes `pdkdevctrl`.

For example, in a system with three Dialing Kernel servers, create the following three administrative accounts:

- `pdkdevctrl1`
- `pdkdevctrl2`
- `pdkdevctrl3`

3. In IC Manager, create a Telephony server for each Dialing Kernel server.
4. Specify the log in for the administrative account in the configuration of each Telephony server, as follows:
 - a. In the Server Editor for the Telephony server, select the **TS** tab.
 - b. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
 - c. Type the login of the administrative account for the Dialing Kernel server that uses the Telephony server.
 - d. Select **OK** to save the configuration.

Updating the runtime settings for Outbound Contact

To update the runtime settings for the Outbound Contact Dialing Client, you must update the `MCDesk.ini` file in the the `IC_INSTALL_DIR\IC61\etc` folder on the machine that hosts IC Manager.

To update the runtime settings;

1. In a text editor, such as Notepad, open `IC_INSTALL_DIR\IC61\etc\mcdesk.ini`
2. Find the following section:

```
[kernel]
ServiceAddress= 135.35.91.49
ServicePort    = 7800
```

3. Update the values for the following properties as shown in the following table:

Property	Value
ServiceAddress	Type the IP address of the machine that hosts the Softdialer server and Dialing Kernel server.
ServicePort	Confirm that this is 7800, the port that you entered when you configured the serverport property for the Dialing Kernel server.

4. Find the following section:

```
[trace]
Trace    = on
logpath  = C:/Program Files/Avaya/IC61/logs
FileSize= 2000000
```

5. Confirm that value for `logpath` is the logs directory for Avaya IC. The default logs directory is `IC_INSTALL_DIR/IC61/logs`. If you did not install Avaya IC in the Program Files directory, you must update this value.
6. Save and close the file.
7. If IC Manager is open, close and re-open IC Manager to ensure that these changes take effect.

Configuring disconnects for answering machine and nuisance calls

You must configure Outbound Contact to disconnect and route nuisance calls and call attempts answered by answering machines.

These instructions use the term "vector" which applies to a switch with Avaya DEFINITY/Communication Manager. The following table shows the appropriate term and definition for the other switches supported by Outbound Contact.

Switch	Term	Definition
DEFINITY G3	Vector Directory Number (VDN)	Vector
Aspect	Monitored subtype	Call Control Table (CCT) with the appropriate monitored subtype in the end Data (001) step
Meridian	Control Directory Number (CDN)	Customer Controlled Routing (CCR)

To configure disconnects for answering machine and nuisance calls:

1. In your telephony switch:
 - Create a vector with the following step:
 - `disconnect after announcement none`
 - Create a VDN as follows:
 - Use the VDN value shown in the following table:

Parameter	Value
Name	PredictiveDropPoint

- Refer the VDN to the new vector
2. On the machine that hosts your Outbound Contact servers:
 - a. In a text editor, such as Notepad, open
 - `IC_INSTALL_DIR\IC61\etc\mcscn.ini`
 - b. Find the following section: `cc1Ic`

Configuring Outbound Contact

c. Add the property shown in the following table:

Parameter	Value
Name	PredictiveDropPoint
Value	Predictive drop point on your switch.

For example, if your predictive drop point is 7001, add the following property:

```
PredictiveDropPoint = 7001
```

For more information about the Predictive Drop Point, see *Telephony Connectors Programmer's Guide*.

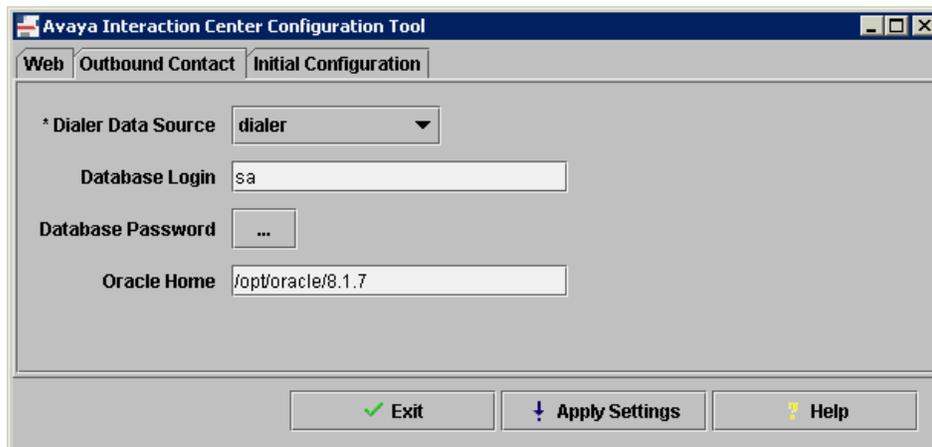
Configuring Outbound Contact Reports

This section describes how to create and configure a connection to the Dialer database for the Outbound Contact Reports. This section includes the following topics with steps that you must perform to configure Outbound Contact Reports:

1. [Configuring database connection for reporting](#) on page 238.
2. [Setting the environment variable](#) on page 239.

Configuring database connection for reporting

On the machine that hosts Outbound Contact servers, create this connection on the **Outbound Contact** tab of the Avaya IC Configuration Tool, shown in the following figure.



For more information about the Outbound Contact tab of the Configuration Tool, see [Outbound Contact tab](#) on page 491.

To configure Outbound Contact reports:

1. Select **Start > Programs > Avaya Interaction Center 6.1 > Configuration Tool**.
If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.
2. Select the **Outbound Contact** tab.
3. From the **Dialer Data Source** drop-down list, select **dialer**.
4. In the **Database Login** field, type a valid DBA login ID for the Dialer database.
Type a DBA login ID for the database server. Do not use the DBA login for a database client.
5. In the **Database Password** field, type the password for the database user.
6. In the **Oracle Home** field:
 - For Avaya IC systems with Oracle databases, type the home directory of the Oracle client on the machine that hosts the Outbound Contact Reports. For example, type `/opt/oracle/8.1.7`.
 - For Avaya IC systems with SQL Server databases or DB2 databases, leave this field empty.
7. Select **Apply Settings**.
8. Select **OK** in the **Success** dialog box.
9. Select **Exit**.

Setting the environment variable

Outbound Contact Reports uses an environment variable named DBSCOPE to connect to the Dialer database. This variable has different values for different databases. You must set this variable on the machine that hosts Outbound Contact Reports.

To set the environment variable:

1. On the Windows desktop, right-click **My Computer** and select **Properties**.
2. Select the **Advanced** tab.
3. Select **Environment Variables**.
4. In the **System Variables** section, select **New**.

Configuring Outbound Contact

5. Type DBSCOPE for the variable name, and set the value of the environment variable, as shown in the following table.

Database type	Value of environment variable
SQL Server	DBSCOPE=
Oracle	DBSCOPE=< <i>dialer_dbuser</i> > where <i>dialer_dbuser</i> is the administrative login for the Dialer database. For example, set the value as: DBSCOPE=sys
DB2	DBSCOPE=< <i>dialer_dbschema</i> > where <i>dialer_dbschema</i> is the schema name for the Dialer database. For example, if you used the default schema for the Dialer database, set the value as: DBSCOPE=db2inst1

6. Select **OK** in each dialog box.

Configuring Web scheduled calls

To use Web Scheduled Calls, you must configure the customer website to send scheduled call requests to Outbound Contact. This configuration defines the Web interface that sends scheduled call request to Outbound Contact.

When you build the Web page and define the interface, you can implement standard methods to lookup and populate the variables, such as:

- A standard link to a job
- A drop-down list of the regions defined in Outbound Contact Supervisor from which customers can select their region
- Hard code the region
- Dynamically detect the region for the originating request

Prerequisites for configuring Web scheduled calls

Before you configure Web Scheduled Calls, you must define the following before defining the web interface. For more information on how to define these items, see *IC Administration Volume 1: Servers & Domains*.

- [Outbound Contact system settings](#) on page 241.
- [Region](#) on page 241.
- [Job ID](#) on page 242.

Outbound Contact system settings

These settings include: Daylight Saving Time (DST) Rules, Time zones, and special dates or holidays

Region

This setting is the region where the scheduled call request originates. A region is an Outbound Contact system setting that define areas where the same time zone, DST rule, and special dates apply. Outbound Contact uses the settings of the assigned region to control its dialing behavior for the telephone number.

To define a region, the system settings in the following table must exist.

System Setting	Description
Daylight Savings Time (DST) rule	A DST rule defines the difference between daylight savings time and standard time, and the start and end dates of the DST period.
Time zone	The time zone of the geographical location where customers in your calling list are located. A time zone is the difference between local time and Coordinated Universal Time (UTC), which was formerly known as Greenwich Mean Time (GMT). UTC uses a 24 hour clock to express time.
Special date(s)	Days which need a separate entries in a dialing window that sets the legal times that the contact center can conduct outbound calling. Special dates take precedence over weekdays, Saturdays, and Sundays.

Job ID

This is the Job ID assigned to the outbound job that will conduct the scheduled calls. An outbound job is a calling activity that Outbound Contact uses to contact customers and connect them with agents. Each job has a goal or objective. Outbound Contact can run multiple outbound jobs simultaneously. One type of outbound job conducts calls customers who requested calls through Web Scheduled Calls.

The definition for each job includes a name, a user-friendly description, and parameters that define how Outbound Contact will handle the calling activities. Each job uses associated information and an optional script to dial telephone number and connect agents with customers.

When a supervisor defines a job, Outbound Contact assigns a Job ID to the job.

For more information about Job IDs, including how to retrieve the Job ID for a particular job, see *IC Administration Volume 2: Agents, Customers, & Queues*.

Configuring the scheduled call method

The following code in the Web page defines the Schedule Call method that sends scheduled call request to Outbound Contact.

```
// scheduled a call specified by local time in seconds since 1970
ORBStatus ScheduleCallLocTm( in string <eduID>, in long <jobID>,
    in string countryCode,
    in string <areaCode>, in string <extension>, in string
    <callerName>,
    in long <scheduleCallTimeInSecondsSince1970>, in long <regionID>
);
```

The following table lists the variables found in the Scheduled Callback method:

Variable	Required	Prerequisite	Description
eduID	Yes		The identifier that Outbound Contact assigns the customer context EDU when the customer issues a scheduled call request
jobID	Yes	Yes	The identifier that Outbound Contact assigns a job when a supervisor defines the job

Variable	Required	Prerequisite	Description
countryCode	Yes		The 1-, 2-, or 3-digit number that precedes the national number in an international telephone call. The country code identifies the country or the integrated numbering plan in which the telephone number is located. A country code may be referred to as an international area code or international dialing code.
areaCode	Yes		The code for the geographic area or locale
extension	Yes		The telephone subscriber number
callerName	Yes		The name of the customer.
scheduleCallTimeInSecondsSince1970	Yes		The time requested for the scheduled call to occur, converted to the number of seconds since 1970
regionID	Yes	Yes	The identifier that Outbound Contact assigns a region when a supervisor defines geographic areas.

Configuring Outbound Contact

■ ■ ■ ■ ■ ■

Chapter 10: Configuring Web Management

Web Management is a Web-based marketing, sales, and service application that personalizes and manages Web transactions for Avaya Interaction Center. Configure Web Management if your Avaya IC system includes Web Management, Email Management, or Voice Chat.

This section includes the following topic that describes Web Management:

- [Web Management support for media channels](#) on page 246.

This section includes the following topics that describe the steps that you must perform to complete the configuration of Web Management:

1. [Completing prerequisites for configuring Web Management](#) on page 247.
2. [Creating a secondary server environment for Web Management](#) on page 248.
3. [Configuring servers for Web Management](#) on page 248.
4. [Configuring Web Management services](#) on page 257.
5. [Integrating Web Management Administration](#) on page 272.
6. [Configuring a Workflow server for Web Management](#) on page 274.
7. [Using workflows for Web Management](#) on page 277.
8. [Configuring routing hints for the Qualify Chat workflow](#) on page 279.
9. [Configuring the ICM server](#) on page 282.
10. [Configuring the Central Internet Routing service](#) on page 286.
11. [Configuring the Website](#) on page 288.
12. [Refreshing the Directory server](#) on page 291.

This section includes the following topics that describe optional configurations for Web Management:

- [Configuring HTTP\(S\) tunneling \(optional\)](#) on page 292.
- [Configuring SSL security for Web servers \(optional\)](#) on page 295.
- [Setting up a separate administration Website \(optional\)](#) on page 298.
- [Setting up a separate customer Website \(optional\)](#) on page 302.

For information on how to set up RONA for Web Management, see *IC Administration Volume 2: Agents, Customers, & Queues*

Web Management support for media channels

This section includes the following topics:

- [Features available in chat channel and email channel](#) on page 246.
- [Support available for Shared Browsing](#) on page 247.

Features available in chat channel and email channel

The following table shows the integrated functionality that Web Management provides and the support that the functionality provides for the chat channel and the email channel.

Feature or component	Chat channel	Email channel
Customer management	X	X
Self-service to provide suggested responses for agents	X	X
Chat escalation	X	–
Chat & Phone escalation for voice chat	X	–
Chat & VoIP escalation for voice chat	X	–
Web scheduled calls for Outbound Contact	X	–
Email escalation	–	X
Survey	X	–
WebACD server administration	X	X
Web page multi-tenancy and multi-tenancy administration	X	X
Datawake and Datawake administration	X	X
Chat channel services: <ul style="list-style-type: none"> • Chat server and client components • Shared browsing 	X	–

Support available for Shared Browsing

The Shared Browsing component of Web Management allows agents to view the same Web pages as a customer. When you integrate Shared Browsing with your Website, note that:

- Shared Browsing supports:
 - State and session information stored in the cookie of the customer
 - State and session information stored in query parameters in the URL
 - Internet Explorer auto-complete feature
 - Form handling and preservation during and after chat sessions, such as separate windows for Web browser and chat
- Shared Browsing does not support:
 - State and session storage in a custom object
 - Form POST
 - Server.transfer

Completing prerequisites for configuring Web Management

Before you configure Web Management, make sure that you:

1. Install and configure all prerequisite software and hardware, including a Web server and a JDK.
For information on which prerequisites you need for each machine, see *IC Installation Planning and Prerequisites*.
2. Copy the server files to the machines where you plan to run the Avaya IC servers, described in [Installing Avaya IC servers](#) on page 49.
3. Install the Avaya IC design and administration tools.
4. Perform all the steps to configure the Avaya IC core servers, databases, and related components, described in [Configuring core servers](#) on page 113.
5. On Solaris and AIX machines, install a Windowing environment such as X-Windows on the machine that hosts the Website and ICM server.

Creating a secondary server environment for Web Management

You must create a secondary server environment, including a secondary ORB server, if you host the servers that you need to configure for Web Management on a different machine than the machine that hosts the primary ORB server.

You must configure a secondary server environment on the following machines:

- Machines that host Web Management servers
- Machines that host an IC customer Website or an Administrative Website

For more information about how to create a secondary server environment, see [Configuring secondary servers](#) on page 161.

Note:

On all machines that host a Website, set the startup options on the secondary ORB server to Manual unless that machine also hosts an Avaya IC server, such as an Attribute server.

Configuring servers for Web Management

You must add and configure Web Management servers to use Web Management and Email Management. These instructions include only those properties required to get the servers up and running. For information about other server properties, see *IC Administration Volume 1: Servers & Domains*.

This section describes the Web Management servers and how to configure them. Topics include:

Note:

Add and configure the servers in the order in which they are presented in the following topics. Avaya IC systems that include the email channel, but not the chat channel, do not require the Attribute server.

1. [Creating the WebACD server](#) on page 249.
2. [Creating the Attribute server](#) on page 252.
3. [Creating the ComHub server](#) on page 254.
4. [Creating the Paging server](#) on page 255.
5. [Starting the Web Management servers](#) on page 257.

Creating the WebACD server

The WebACD server performs as a call distributor for chat and email contacts. This server assigns tasks to agents and tracks the different states of the agent interactions. This server uses the Attribute server, Paging server, IC Email server, and ComHub server to complete support operations such as managing agent states and administering agent and contact interactions. This server is also known as the Web Agent Automatic Call Distributor (ACD) server.

The Avaya IC installation program does not automatically add this server. Web Management and Email Management require this server.

If your Avaya IC system includes multiple domains, ensure that the failover strategy for the WebACD server includes the following:

IC Email server failover - The domain that includes your IC Email server must failover to the domain that includes your WebACD server.

WebACD server failover - The domain that includes your WebACD server must failover to the domain that includes your IC Email server.

To create the WebACD server:

1. Select **Server > New** in IC Manager.
2. Select **WACD** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	WebACD_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>web</code> from the drop-down list.
Host	Enter or select the machine's IP address from the drop-down list.	When you select the host, IC Manager fills in Directory, Port, and Executable.

Configuring Web Management

4. Select the **WACD** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Host Name	Enter the name of the machine that hosts the WebACD server.	For example, enter TESTBOX.
Domain	Enter the domain of the machine that hosts the WebACD server.	For example, enter xyzcorp.com.
Service Port	4010	If you must change this port, see Ports used by Avaya IC components on page 28 for a list of the default port numbers used by the other Avaya IC servers. Port conflicts can cause serious problems within the Avaya IC system.
IC Data Source	Select the Interaction Center Data Source.	If you used the default name, select <code>interaction_center</code> .
WACD Webserver	Enter the name and domain of the machine that hosts the Web Administration pages.	For example, enter TEXTBOX.xyzcorp.com.
Port	Enter the port that the WebACD server uses for connections with Web applications.	Default port is 80 unless you plan to configure SSL for your website. If you must change this port, see Changing the service port for the WebACD server on page 36 for a list of the default port numbers used by the other Avaya IC servers. Port conflicts can cause serious problems within the Avaya IC system.
Protocol	Select the protocol that you use to connect to the Website.	Select <code>http</code> unless you plan to configure SSL for your Website. For more information on SSL, see Configuring SSL security for Web servers (optional) on page 295.
Comhub Host Name	Enter the fully-qualified domain name of the machine that hosts the ComHub server.	For example, enter TESTBOX.xyzcorp.com.

Field	Recommended entry	Notes
Comhub Port	Enter the service port for the Comhub server.	Default service port is 4001. If you must change this port, see Changing the service port for the ComHub server on page 36 for a list of the default port numbers used by the other Avaya IC servers. Port conflicts can cause serious problems within the Avaya IC system.
Website Context	Enter the name of the Web application used for Web Management.	The default website context is <code>website</code> .
Agent Timeout (secs)	100	If the WebACD assigns a contact to an agent who has turned on the "Wait for agent confirmation before accepting a contact" option in Avaya Agent, then this value specifies the number of seconds that the WebACD server will wait for confirmation from that agent before it reassigns the contact to another available agent. For details about setting this option, see the <i>Avaya Agent User Guide</i> .
Max Display Tasks		Enter the number of currently active tasks to display per request in the WebACD administration pages.
Task Wrap Timeout (secs)		Automatically wraps and completes a task after an customer or agent has timed out. For example, if the Avaya Agent shuts down and the user is forced to end the consultation, the WebACD server waits until the amount of time specified in the wrap-up timeout parameter has passed, then wraps and completes the task.
Interval Between Cleanup (mins)		Enter the period of time that the WebACD should wait between cleaning up threads from timed out and abandoned chat tasks.
Max Allowed Queue Time (mins)		Enter the maximum time that a chat task can stay in a queue before it is considered to be dead or abandoned.

Field	Recommended entry	Notes
Summary Interval (mins)		Enter the period of time that the WebACD should wait between creating summary records. This interval must be an even divisor of 60 (for example, you can use 4, 5, 6, 10, 12, or 15, but you cannot use 8 or 9.) If you set the interval to 5 minutes, then the WebACD will write summaries at 12:00, 12:05, 12:10, etc.
Requalify Contacts		Enable this option if you want the WebACD server to re-run the Qualify workflow on unassigned tasks.

5. Select **OK** to save your configuration settings.

Creating the Attribute server

The Attribute server acts as a communications bridge between the ICM server and the WebACD server for chats. Provides tracking of user web page browsing sessions for Datawake. This server also provides website property event notifications between the website and the ICM server.

If your Avaya IC system includes Datawake, or you are concerned with performance issues on the Website, you can host a second Attribute server on the Website machine in the DMZ. If your Avaya IC system includes this deployment, configure the secondary ORB server on the machine to start automatically.

The Avaya IC installation program does not automatically add this server. Web Management requires this server.

To create the Attribute server:

1. Select **Server > New** in IC Manager.
2. Select **Attribute** from the list of servers. Select **OK**.

3. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	Attribute_<domain>	Include the domain in the server name to identify the server in the list of servers.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>web</code> from the drop-down list if the server is in the Web domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **Attribute** tab and complete the fields in the following table.

Field	Recommended entry
Port	If you must change the default, see Changing the service port for the Attribute server . Port conflicts can cause serious problems within the Avaya IC system.
Enable Datawake Recording	Check this field if: <ul style="list-style-type: none"> • The Avaya IC system includes DataWake • You want this Attribute server to track the Web pages browsed by a Website customer.
Enable ICM Bridge	Check this field.
IC Login	By default, this field uses the icmbridge account that is provided with Avaya IC. If you have not already done so, change the default password for this account. Important: Do not use the Administrative account for IC Manager or any account for which the password may change.
IC Password	Type the password for the account in the IC Login field.
ICM Servers	<ul style="list-style-type: none"> • Select the Ellipsis (...) button. • In the ICM Servers dialog box: <ul style="list-style-type: none"> - Select New. - Check Enabled. - Type the name and domain of the machine that hosts the ICM server. For example, TESTBOX.xyzcorp.com. - Accept the default port number or change to an available port. - Select OK.

5. Select **OK** to save your configuration settings.

Creating the ComHub server

The ComHub server provides a communications hub for the Web Management and Email Management servers. This server also assists in passing information from a web-based interface to the WebACD server, and helps the WebACD server to respond to agent requests, such as logon or logoff.

The Avaya IC installation program does not automatically add this server. Web Management and Email Management require this server.

To create the ComHub server:

1. Select **Server > New** in IC Manager.
2. Select **ComHub** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	Comhub_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <i>web</i> from the drop-down list if the server is in the Web domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **ComHub** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Host Name	Enter the fully-qualified domain name of the machine that hosts the ComHub server.	For example, enter TESTBOX.xyzcorp.com.
Service Port	Accept the default port of 4001 or enter a new port.	If you must change the default, see <i>IC Installation and Configuration</i> . Port conflicts can cause serious problems within the Avaya IC system.

Field	Recommended entry	Notes
IC Data Source	Select the Interaction Center Data Source.	If you used the default name, select <code>interaction_center</code> .
Threads	Accept the default or enter a number of threads.	The default entry is 10. The number of threads that can be constructed to handle communication tasks.

5. Select **OK** to save your configuration settings.

Creating the Paging server

The Paging server serves as a communications bridge between Avaya Agent and the WebACD server. This server brokers messages to ensure they are sent to the correct agents and to the WebACD server.

 **Important:**

When you create Avaya IC accounts for agents who handle chat contacts, make sure that the domain for those agents fails over to the domain that includes the Paging server.

The Avaya IC installation program does not automatically add this server. Web Management and Email Management require this server.

To create the Paging server:

1. Select **Server > New** in IC Manager.
2. Select **Paging** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	Paging_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>web</code> from the drop-down list if the server is in the Web domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

Configuring Web Management

4. Select the **Paging** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Host Name	Enter the name of the machine that hosts the Paging server.	For example, enter TESTBOX. Important: The Avaya IC agent desktop application uses this host name without the "Domain" name to connect to the Paging server. Configure the agent machine to use the host name without the domain name suffix to communicate with the machine that hosts the Paging server.
Domain	Enter the domain of the machine that hosts the Paging server.	For example, enter xyzcorp.com. Important: The Avaya IC agent desktop application does not use this Domain field to connect to the Paging server. For more information, see the Notes for Host Name above.
Service Port	4200	If you must change the default, see Changing the service port for the Paging server on page 37. Port conflicts can cause serious problems within the Avaya IC system.
ComHub Host Name	Enter the fully-qualified domain name of the machine that hosts the ComHub server.	For example, enter TESTBOX.xyzcorp.com.

5. If you changed the default service port of 4001 for the Comhub server, perform the following steps:
- Right-click on a blank space of the **Paging** tab.
 - Check the box next to **Show Advanced Properties**.
 - In the **Comhub Port** field, type the service port for the Comhub server.
6. Select **OK** to save your configuration settings.

Starting the Web Management servers

Before you configure your media channels, Avaya recommends that you start the Avaya IC servers, including the Web Management servers. When you start the Attribute server, the WebACD server will start automatically.

To start the Avaya IC servers:

1. Select the server.
2. Right-click on the server and select **Start**.

For more information about the correct order for starting and stopping Avaya IC servers, see [Starting and stopping Avaya IC servers](#) on page 147.

Setting startup options for servers in IC Manager

Set the following Web Management servers to autostart:

- Attribute server
- ComHub server
- Paging server
- Workflow server that processes chat contacts

To set startup options for servers in IC Manager:

1. Double-click the server in the **Server** tab.
2. Select the **General** tab.
3. Check the **Auto Start** box.

Configuring Web Management services

This section describes how to install and configure Web Management services for each operating system that Avaya IC supports. This section includes the following topics:

- [Where to configure Web Management services](#) on page 258.
- [Hosting multiple Web applications on one machine](#) on page 258.
- [Advanced properties for Web Management services](#) on page 258.
- [Configuring Web Management services on Windows](#) on page 259.
- [Configuring Web Management services on Solaris](#) on page 263.
- [Configuring Web Management services on AIX](#) on page 268.

Where to configure Web Management services

Configure Web Management services on the following:

- Machines that host Web Management Websites
- Machines that host the WebACD server and Attribute servers to configure database access for:
 - Suggested Response feature of the WebACD server
 - Datawake recording feature of the Attribute server

Hosting multiple Web applications on one machine

If the Avaya IC system includes more than one Web application on the same machine as the WebLM, Avaya recommends that you:

- Select **Multiple** for the **Tomcat Setup** option.
- Configure all of the Web applications on the target machine at the same time.

 **Important:**

If you do not configure all of the Web applications simultaneously, leave the options for all Web applications on the target machine checked when you re-run the Configuration Tool to create the new Web applications. If you do not leave the options for the previously created Web applications checked, the Configuration Tool may delete those Web applications from the machine.

Advanced properties for Web Management services

The Web tab also includes advanced properties for the Java Virtual Machine. Only configure the advanced properties if you expect a high volume of contacts on the Website. For more information, see [Advanced properties on the Web tab](#) on page 501.

If you expect a high volume of chat contacts, increase the default settings for the advanced properties. For example, you can use the advanced properties to increase the memory allocations for the Website JVM and ICM JVM should be adjusted upward. For high volumes, Avaya recommends that you configure each of these properties to:

`-Xms64m -Xmx512m -Xss64k`

Configuring Web Management services on Windows

Use these instructions if you plan to host Web Management services on a Windows machine.

You do not need to stop the IIS Web server on Windows machines.

To configure Web Management services to run on a Windows machine:

1. To start the Configuration Tool, select **Start > Programs > Avaya Interaction Center 6.1 > Configuration Tool**.

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

2. Log in with your IC Manager login ID and password.
3. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	C:\jdk1.3.1_06
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
IIS Website	The name of the IIS Web server that the Web application will use. Tip: For a localized version of IIS, type the localized name for the IIS Web server.	Default Web Site
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox

Configuring Web Management

Field	Description	Sample entry
DNS Domain	<p>The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain.</p> <p>Note: Verify the default DNS domain carefully to ensure that it is correct.</p>	xyzcorp.com
Web Server Port	<p>The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are:</p> <ul style="list-style-type: none">● HTTP port is 80.● HTTPS port is 443. <p>Do not change the default port unless you assign a different port to the Web server.</p>	Default: 80
IC Test	<p>Optional.</p> <p>IC Test is a Web application that you can use to test your Tomcat configuration.</p> <p>If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test.</p> <p>To access IC Test, use the Tomcat HTTP port in the URL. For example, type: <code>http://<server>.<domain>.com:9606/ictest</code></p> <p>Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.</p>	Checkmark in box

4. Complete the Web Management fields in the following table.

Field	Description	Sample entry
Configure Web Management	<p>Check this box if you want to configure Web Management services on the target machine. After you check this box, the Configuration Tool automatically:</p> <ul style="list-style-type: none"> ● Displays the other Web Management fields ● Checks the following boxes: <ul style="list-style-type: none"> - Website - ICM - CIRS - Attribute - DataWake recording (PDM) 	Checkmark in box
Website	<p>Creates the Website Web application and performs other tasks that are required to configure a Web Management Website on the target machine. After you check this box, the Configuration Tool displays the following required fields for the Website:</p> <ul style="list-style-type: none"> ● Website Virtual Directory Name ● WebACD ● Attribute Server 	Checkmark in box
Website Virtual Directory Name	The name of the virtual directory for the Website.	website
WebACD	<p>The WebACD server in your Avaya IC system. You must create the WebACD server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the WebACD server on page 249.</p>	WebACD_web
Attribute Server	<p>The Attribute server that the Datawake plug-in uses. You must create the Attribute server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the Attribute server on page 252.</p>	Attribute_web
ICM Service	<p>Configures the ICM server and related components on the target machine. For more information, see Configuring the ICM server on page 282.</p>	Checkmark in box

Configuring Web Management

Field	Description	Sample entry
CIRS Service	Configures the CIRS server and related components on the target machine. For more information, see Configuring the Central Internet Routing service on page 286. Important: Only configure a CIRS server if your Avaya IC system includes more than one ICM server.	Checkmark in box
Attribute - DataWake recording (PDM)	Configures the DataWake recording feature of the Attribute server.	Checkmark in box
IC Login	Use the website account that you imported into the database with the seed data. If you have not already done so, change the default password for this account. For more information, see <i>IC Administration Volume 2: Agents, Customers, & Queues</i> . Note: Do not use the Administrator account for IC Manager or any other account for which the password may change.	website
IC Password	The password used by the IC Login.	website
IC Data Source	The Interaction Center data source that you create with the Interaction Center application for the CallCenterQ database. For more information, see Generating the Interaction Center application on page 109.	interaction_center
Repository Data Source	The Repository data source that you create with the repository application for the IC Repository database. For more information, see Generating the IC Repository application on page 98.	repository
Database Login	Type a DBA login ID for the database server.	SQL Server: sa Oracle: sys
Database Password	The password for the DBA login ID.	admin
Oracle Home	<i>Oracle databases only.</i> The home directory of the Oracle client on the machine that hosts the Web Management servers.	SQL Server: leave empty Oracle: C:\Oracle\Ora81

5. Select **Apply Settings**.
6. Select **OK** in the **Success** dialog box.
7. Select **Exit**.
8. To complete the configuration, perform the following steps to ensure that all Web Management services start properly:
 - a. Open the Windows Services control panel.
 - b. Start the Tomcat NT services:
 - For a multiple Tomcat setup, start Avaya IC Web Management Service 6.1.
 - For a single Tomcat setup, start Avaya IC Jakarta Service 6.1.

For more information about how to start and stop Web application services, see [Starting and stopping Avaya IC services](#) on page 154.

Configuring Web Management services on Solaris

Use these instructions if you plan to host Web Management services on a Solaris machine.

Important:

To configure Web Management services on Solaris, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure Web Management services to run on a Solaris machine:

1. Stop the Sun ONE server that hosts the Website application with the stop script packaged with the Web server:

```
<SunONE_install_dir>/servers/<my_ONE_server>/stop
```

2. Start the Configuration Tool:

- a. Navigate to `IC_INSTALL_DIR/IC61/bin`

- b. Run `./configure`

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

3. Log in with your IC Manager login ID and password.

Configuring Web Management

4. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	<p>This option determines how many Tomcat servers the Configuration Tool must configure on the target machine.</p> <p>Tip: Avaya recommends that you use the Multiple option.</p> <p>The Multiple option creates a separate Tomcat server for each Web application.</p> <p>The Single option creates a single Tomcat server that controls all Web applications.</p> <p>For more information, see General fields on the Web tab on page 495.</p>	Multiple
JDK Home	<p>The path to the directory where the Java SDK is installed.</p> <p>For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i>.</p>	/opt/j2sdk1_3_1_06
Tomcat Base Port	<p>The port used to configure the following ports:</p> <ul style="list-style-type: none">● Tomcat HTTP ports for Web applications● Tomcat AJP (Web server connector) ports	Default: 9600
Web Server Home	<p>The installation path for the Sun ONE™ Server that hosts the Web application.</p>	/opt/iplanet
Web Server Name	<p>The root name of the server as found in the Sun ONE™ Server home directory.</p> <p>Note: Do not include <code>https-</code> in the Web server name.</p>	testbox.xyzcorp.com
Web Server Host	<p>The name of the machine that hosts the Web server.</p> <p>Do not include the DNS domain.</p>	testbox
DNS Domain	<p>The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain.</p> <p>Note: Verify the default DNS domain carefully to ensure that it is correct.</p>	xyzcorp.com
Web Server Port	<p>The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are:</p> <ul style="list-style-type: none">● HTTP port is 80.● HTTPS port is 443. <p>Do not change the default port unless you assign a different port to the Web server.</p>	Default: 80

Field	Description	Sample entry
IC Test	<p>Optional.</p> <p>IC Test is a Web application that you can use to test your Tomcat configuration.</p> <p>If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test.</p> <p>To access IC Test, use the Tomcat HTTP port in the URL. For example, type: http://<server>.<domain>.com:9606/ictest</p> <p>Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.</p>	Checkmark in box

5. Complete the Web Management fields in the following table.

Field	Description	Sample entry
Configure Web Management	<p>Check this box if you want to configure Web Management services on the target machine. After you check this box, the Configuration Tool automatically:</p> <ul style="list-style-type: none"> ● Displays the other Web Management fields ● Checks the following boxes: <ul style="list-style-type: none"> - Website - ICM - CIRS - Attribute - DataWake recording (PDM) 	Checkmark in box
Website	<p>Creates the Website Web application and performs other tasks that are required to configure a Web Management Website on the target machine.</p> <p>After you check this box, the Configuration Tool displays the following required fields for the Website:</p> <ul style="list-style-type: none"> ● Website Virtual Directory Name ● WebACD ● Attribute Server 	Checkmark in box
Website Virtual Directory Name	The name of the virtual directory for the Website.	website

Configuring Web Management

Field	Description	Sample entry
WebACD	The WebACD server in your Avaya IC system. You must create the WebACD server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the WebACD server on page 249.	WebACD_web
Attribute Server	The Attribute server that the Datawake plug-in uses. You must create the Attribute server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the Attribute server on page 252.	Attribute_web
ICM Service	Configures the ICM server and related components on the target machine. For more information, see Configuring the ICM server on page 282.	Checkmark in box
CIRS Service	Configures the CIRS server and related components on the target machine. For more information, see Configuring the Central Internet Routing service on page 286. Important: Only configure a CIRS server if your Avaya IC system includes more than one ICM server.	Checkmark in box
Attribute - DataWake recording (PDM)	Configures the DataWake recording feature of the Attribute server.	Checkmark in box
IC Login	Use the website account that you imported into the database with the seed data. If you have not already done so, change the default password for this account. For more information, see <i>IC Administration Volume 2: Agents, Customers, & Queues</i> . Note: Do not use the Administrator account for IC Manager or any other account for which the password may change.	website
IC Password	The password used by the IC Login.	website
IC Data Source	The Interaction Center data source that you create with the Interaction Center application for the CallCenterQ database. For more information, see Generating the Interaction Center application on page 109.	interaction_center

Field	Description	Sample entry
Repository Data Source	The Repository data source that you create with the repository application for the IC Repository database. For more information, see Generating the Interaction Center application on page 109.	repository
Database Login	Type a DBA login ID for the database server. Note: Do not use the DBA login for a database client on a DB2 database.	<i>Oracle:</i> sys
Database Password	The password for the DBA login ID.	admin
Database Host	The host name of the machine that hosts your database server.	testbox.xyzcorp.com
Oracle SID	The Oracle SID of your database. Note: The Oracle SID field is case-sensitive.	icutf8db

6. Select **Apply Settings**.
7. Select **OK** in the **Success** dialog box.
8. Select **Exit**.
9. To complete the configuration, perform the following steps to ensure that all Web Management services start properly:
 - a. In the Sun ONE Server installation directory:
 - Open the https-admserv directory.
 - If the directory includes a file called start-ICEnv.backup, execute the following command to rename the file:


```
mv start-ICEnv.backup oldstart-ICEnv
```
 - b. Start the Sun ONE server that hosts the Website application with the following start script:


```
<SunONE_install_dir>/servers/<my_ONE_server>/start
```
 - c. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.
 - d. Use the following script to start Tomcat:
 - If you selected **Multiple** in the **Tomcat Setup** field:


```
./ictomcat.sh start all
```
 - If you selected **Single** in the **Tomcat Setup** field:


```
./ictomcat.sh start website
```

Configuring Web Management services on AIX

Use these instructions if you plan to host Web Management services on an AIX machine.

 **Important:**

To configure Web Management services on AIX, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure Web Management services to run on an AIX machine:

1. Stop the IBM HTTP Server that hosts the Website application with the stop script packaged with the Web server:
`./httpserver.sh stop`
2. Start the Configuration Tool:
 - a. Navigate to `IC_INSTALL_DIR/IC61/bin`
 - b. Run `./configure`

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.
3. Log in with your IC Manager login ID and password.
4. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	<code>/usr/java131</code>
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600

Field	Description	Sample entry
Web Server Home	The installation path for the IBM HTTP server instance that hosts the Web application.	/usr/HTTPServer
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: http://<server>.<domain>.com:9606/ictest Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

Configuring Web Management

5. Complete the Web Management fields in the following table.

Field	Description	Sample entry
Configure Web Management	<p>Check this box if you want to configure Web Management services on the target machine. After you check this box, the Configuration Tool automatically:</p> <ul style="list-style-type: none"> ● Displays the other Web Management fields ● Checks the following boxes: <ul style="list-style-type: none"> - Website - ICM - CIRS - Attribute - DataWake recording (PDM) 	Checkmark in box
Website	<p>Creates the Website Web application and performs other tasks that are required to configure a Web Management Website on the target machine. After you check this box, the Configuration Tool displays the following required fields for the Website:</p> <ul style="list-style-type: none"> ● Website Virtual Directory Name ● WebACD ● Attribute Server 	Checkmark in box
Website Virtual Directory Name	The name of the virtual directory for the Website.	website
WebACD	<p>The WebACD server in your Avaya IC system. You must create the WebACD server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the WebACD server on page 249.</p>	WebACD_web
Attribute Server	<p>The Attribute server that the Datawake plug-in uses. You must create the Attribute server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the Attribute server on page 252.</p>	Attribute_web
ICM Service	<p>Configures the ICM server and related components on the target machine. For more information, see Configuring the ICM server on page 282.</p>	Checkmark in box

Field	Description	Sample entry
CIRS Service	Configures the CIRS server and related components on the target machine. For more information, see Configuring the Central Internet Routing service on page 286. Important: Only configure a CIRS server if your Avaya IC system includes more than one ICM server.	Checkmark in box
Attribute - DataWake recording (PDM)	Configures the DataWake recording feature of the Attribute server.	Checkmark in box
IC Login	Use the website account that you imported into the database with the seed data. If you have not already done so, change the default password for this account. For more information, see <i>IC Administration Volume 2: Agents, Customers, & Queues</i> . Note: Do not use the Administrator account for IC Manager or any other account for which the password may change.	website
IC Password	The password used by the IC Login.	website
IC Data Source	The Interaction Center data source that you create with the Interaction Center application for the CallCenterQ database. For more information, see Generating the Interaction Center application on page 109.	interaction_center
Repository Data Source	The Repository data source that you create with the repository application for the IC Repository database. For more information, see Generating the IC Repository application on page 98.	repository
Database Login	Type a DBA login ID for the database server. Note: Do not use the DBA login for a database client on a DB2 database.	DB2: db2inst1
Database Password	The password for the DBA login ID.	admin
Database Host	The host name of the machine that hosts your database server.	testbox.xyzcorp.com
DB2 Port	The port that the target machine uses to communicate with the DB2 database.	Default: 50,000

6. Select **Apply Settings**.
7. Select **OK** in the **Success** dialog box.
8. Select **Exit**.
9. To complete the configuration, perform the following steps to ensure that all Web Management services start properly:
 - a. Start the IBM HTTP Server that hosts the Website application with the following start script:

```
./httpserver.sh start
```
 - b. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.
 - c. Use the following script to start Tomcat:
 - If you selected **Multiple** in the **Tomcat Setup** field:

```
./ictomcat.sh start all
```
 - If you selected **Single** in the **Tomcat Setup** field:

```
./ictomcat.sh start website
```

Integrating Web Management Administration

Web Management Administration is a set of Web pages that you use to administer and configure Web Management and Email Management. You open Web Management Administration from IC Manager. Before you use Web Management Administration, you must integrate it with IC Manager.

Note:

Complete only those properties listed in this section to integrate Web Management administration. You do not need to complete the other properties available in the System/Configuration list.

To integrate Web Management Administration with IC Manager:

1. In IC Manager, select **Tools > Groups**.
2. Select the **Properties** tab.
3. Select the IC node in the left pane.
4. In the **Sections** list, select **System/Configuration**.

5. Double-click the **Value** column next to ChatLoginServer in the list of properties and complete the following fields:
 - a. In the **Property Value** field, type the fully-qualified domain name of the machine that hosts the Tomcat server for the Web Management Administration Website. For example, type support.xyzcorp.com.
 - b. Select **OK**.
6. Double-click the **Value** column next to ChatLoginServerWebsite in the list of properties and complete the following fields:
 - a. Type the name of the Tomcat web application for the Web Management Administration Website.

This is the name that you specified when you configured the website Tomcat application in [Configuring Web Management services](#) on page 257. The Web Management Administration Website must be on the machine that you specified for the ChatLoginServer property.
 - b. Select **OK**.
7. If you serve your Web Management Administration pages from a secure web server, you must also modify the properties shown in the following table:

Property	Recommended entry	Notes
ChatLoginServerProtocol	Type the protocol that your Web server uses.	For secure server protocol, type https . For non-secure server protocol, type http .
ChatLoginServerPort	Type the port that your Web server uses for chat communications.	For http, default port is 80. For https, default port is 443. Do not change the default unless you assign a different port to the Web server.

8. Select **OK**.
9. Exit and restart IC Manager.

Configuring a Workflow server for Web Management

To configure the Workflow server for Web Management, perform the steps in the following topics:

1. [Creating a Workflow server for Web Management](#) on page 274.
2. [Creating the chat channel for the Workflow server](#) on page 275.

If your Avaya IC system includes multiple Workflow servers, perform these steps on each Workflow server that processes chat contacts.

Creating a Workflow server for Web Management

These instructions only provide information about those parameters you need to set when you create a Workflow server to handle chat contacts. For more information about other parameters in the Workflow server, see [Configuring multiple Workflow servers](#) on page 135 and *IC Administration Volume 1: Servers & Domains*.

 **CAUTION:**

If you do not configure the Workflow server with synchronous startup flows, the Qualify Chat workflow cannot resolve the pkey of the queue where a contact is to be routed. If this occurs, Avaya IC cannot route chat contacts.

To create a Workflow server for Web Management:

1. In IC Manager, select **Server > New**.
2. Select **Workflow** from the list of servers.
3. Select **OK**.
4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Workflow_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Web</code> to use the preconfigured domain for Web Management.
Host	Select the machine's IP address from the drop-down list, or type the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **Workflow** tab.
6. From the **IC Data Source** drop-down list, select the Interaction Center data source.
The default name for this data source is `interaction_center`. This is the data source that you created in [Generating the Interaction Center application](#) on page 109.
7. Select **Synchronous Startup Flows**.
8. If the following rows do not exist, add them to the Synchronous Startup Flows:
 - a. Select **New**.
 - b. In the new row, type `web_routing.update_qw_cache`
 - c. Select **OK**.
9. Continue with [Creating the chat channel for the Workflow server](#) on page 275.

Creating the chat channel for the Workflow server

To create the chat channel for the Workflow server:

1. In the Server Editor for the Workflow server, select the **Channels** tab.
2. Select the **Channels** tab.
3. Select **New Channel**.
4. In the **Channel Editor** dialog box:
 - a. Complete the fields as shown in the following table.

Field	Recommended entry	Notes
Global	Do not check this field.	Do not check this field to create a channel for a specific server or media, such as Chat.
By Server	<ul style="list-style-type: none"> ● Do not check this field if you want this channel to handle events from all servers of the type that you select from the Service drop-down list. ● Check this field if you want this channel to handle events from only one specific server that you select from the Service drop-down list. 	If you check this field, and you need this Workflow server to communicate with more than one server, you must create another channel for that server. Warning: If you check this field and the WebACD server is named "WACD", the Workflow server will not be able to communicate with the WebACD server.
Channel Range	No entry necessary.	Completed by IC Manager

Configuring Web Management

Field	Recommended entry	Notes
Service	Select WACD or the WebACD server from the drop-down list.	Whether you can select a server or a type of server, depends up whether or not you checked the By Server field.
Criteria	Type media=chat	

- b. Select **OK**.
5. Select the channel that you created in the step above.
6. Select **New Association**.
7. In the **Channel Association** dialog box, complete the fields as shown in the following table. Select **OK**.

Field	Recommended entry
Channel Range	Completed by IC Manager
Service Range	Completed by IC Manager
Event	WACD.QualifyChat Note: This field is case-sensitive.
Flow	<flow_project>.<flow_name> For example, to use the sample workflow, type wacd.qualifychat

8. Select **OK**.
9. In the Server tab of IC Manager, select the Workflow server that handles voice contacts.
10. Right-click the Workflow server and select **Start**.

Using workflows for Web Management

You can use the sample workflows to configure and test your Web Management servers. When you move into production, modify the sample workflows to meet your system needs and configuration. For more information, see *Avaya IC Media Workflow Reference*.

Note:

If you add a queue to route chat contacts, you must re-run the `update_qw_cache` workflow in the `Web_Routing` project. If you do not want to stop and start the Workflow server that processes chat contacts, select **Run Flows** on the General tab of the Workflow server.

This section includes the following topics:

- [Workflows required by Web Management](#) on page 277.
- [Reloading the customer management workflows](#) on page 278.

Workflows required by Web Management

Web Management requires the following sample and system workflows:

- Qualify Chat workflow in the WACD project
- All workflows in the WebRouting project
- All workflows in the WebCenter project

The Avaya IC seed data includes compiled sample workflows for these projects. When you created the CCQ database, you imported the compiled workflows with the seed data and stored them in the database.

For a complete list of the workflows in these projects, including the directories where Avaya IC installs the workflows, see *Avaya Workflow Designer User Guide*.

**Important:**

Make sure that no workflows use a formatted telephone number to look up customer records. For example, confirm that your Qualify Chat workflow does not use a formatted telephone number in the Customer Lookup block.

Reloading the customer management workflows

The customer management workflows in the WebCenter project require file-based IC Scripts. By default, the `include` property contains the names of the required file-based IC Scripts.

Before you compile the workflows in the WebCenter project, add the following IC Script directory to the project:

```
IC_INSTALL_DIR\IC61\design\IC\Flows\Avaya\WebCenter
```

To add the IC Script directory:

1. With the project open in Workflow Designer, select **Project > Settings**.
2. In the **Directories** tab of the **Project Settings** dialog box, select **New Folder**.
3. In the **Open** dialog box:
 - a. Navigate to the following IC Script folder:

```
IC_INSTALL_DIR\IC61\design\IC\Flows\Avaya\WebCenter
```
 - b. Select **OK** to add the IC Script folder to the **Directories** tab.
4. In the **Project Settings** dialog box, select **OK**.

You can now compile and load the customer management workflows.

Configuring routing hints for the Qualify Chat workflow

The Fetch Routing Hints (chat) block in the Qualify Chat workflow uses the routing hints in the RoutingHint table of the Directory server to route incoming chat contacts. The following table shows the routing hints used in the sample Qualify Chat workflow.

Category	Sample routing hint values
language	This category requires ISO-639-1 values, such as: <ul style="list-style-type: none"> ● en ● sp ● fr ● de ● zh
intent	<ul style="list-style-type: none"> ● sales ● support

To route chat contacts with the sample Qualify chat workflow, create these hints, then assign them to the default chat queue.

 **Important:**

Routing hints must be in lower case. Do not use mixed upper and lower case in your routing hints. If the routing hint is not in all lower case, the workflow cannot locate the routing hint, and Avaya IC cannot correctly route the contact.

To configure routing hints, perform the steps in the following topics:

1. [Creating routing hints](#) on page 280.
2. [Associating routing hints with Web Self-Service documents](#) on page 281.

Creating routing hints

Use the Configuration tab of IC Manager to create routing hints and add them to the RoutingHint table. The Qualify Chat workflow uses hints from the RoutingHint table to route incoming chat contacts.

Each row in the routing hint table contains the following:

- A routing hint
- The IDs of the queues where contacts that match the routing hint should be routed

Tip:

The default chat queue is DefaultChatQueue@DefaultTenant. You can create and use additional chat queues for routing chat contacts. For more information, see *IC Administration Volume 2: Agents, Customers, & Queues*.

To create routing hints:

1. In IC Manager, select the **Configuration** tab.
2. In the left pane, select **Tables > Workflow > RoutingHint**.
3. Select **New**.
4. In the right pane, complete the fields shown in the following table.

Parameter	Recommended entry	Description
Routing Hint	Type a routing hint.	For the sample Qualify Chat workflow, enter a value for the language or intent category. For language, type a value such as: <ul style="list-style-type: none"> - en - sp - fr - de - zh For intent, type a value such as: <ul style="list-style-type: none"> - sales - support The routing hint must be a text string in all lower case. The text string cannot contain any special characters.
Chat Queue ID	Type DefaultChatQueue@DefaultTenant.	DefaultChatQueue@DefaultTenant is the default chat queue. For more information about chat queues, see <i>IC Administration Volume 2: Agents, Customers, & Queues</i> .

Parameter	Recommended entry	Description
Category/Qualifier	Leave this field blank.	Used only for routing hints for chat contacts in Business Advocate.
Tenant	Select <code>DefaultTenant</code> from the queue from the drop-down list.	Select the tenant used by the queue. For the <code>DefaultChatQueue</code> , select <code>DefaultTenant</code> to ensure that the routing hint uses the correct queue.

5. Select **OK**.

Repeat Steps 3 through 6 to create the second routing hint.

6. Select **Manager > Refresh**.

Associating routing hints with Web Self-Service documents

After you add the routing hints to the Directory server tables, you can associate the routing hints with documents in the Web Self-Service database.

When a customer requests a chat contact with an agent, Web Management records the last document that the customer viewed on the Website. If that document has an associated routing hint, the Qualify Chat workflow uses that routing hint to determine the correct queue for the chat contact.

You need to create at least one document for that database to fully test the Qualify Chat workflow. For more information about the Web Self-Service database, see *IC Administration Volume 2: Agents, Customers, & Queues*.

To associate routing hints with Web Self-Service documents:

1. In IC Manager, select **Services > Web Response Unit**.
2. In the left frame, select **Web Self-Service Console**.
3. In the Web Self-Service Console page:
 - a. Select a tenant from the drop-down list.
 - b. In the left frame, select **Manage FAQ**.
4. In the Manage FAQ page:
 - a. Select the document in the list of documents.
 - b. Select **Update**.
5. In the document, scroll down to the **Routing Attributes** section.
6. Select one routing hint from the **Routing Hint** drop-down lists.
7. Select **Update**.

Configuring the ICM server

The ICM server is a service that hosts text conferencing for Web Management. The ICM server does not run in IC Manager. For information about how to stop and restart the ICM server, see [Starting and stopping Avaya IC services](#) on page 154.

 **Important:**

The steps in *Configuring the ICM server* are optional. Do not perform these steps if the ICM server requires only the default functionality. For example, perform these steps if you want to increase the logging level from the default logging level of "1".

To configure the ICM Server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Chat > ICM**.
3. Select **New**.
4. In the right pane, type a name for the ICM server in the **Global ICM Name** field.

If your Avaya IC system includes multiple ICM servers, type a name that allows you to easily identify the ICM server. For example, for an ICM server on the TESTBOX machine, type `icm_TESTBOX`.

The ICM server uses the global name to determine which ICM record to read for configuration. The global name in this field must match the `dsobject` parameter in the `etc/systemParams.txt` file

5. In the right pane, review the fields as shown in the following table.

Note:

Do not enter a value or change the default values in these fields unless a property needs to be explicitly changed from the default value calculated by the ICM server during its initialization. Most Avaya IC systems do not require changing any of these fields.

Parameter	Description
ICM Active	External clients use this parameter to determine which ICMs to use.
ICM Server Name	The fully-qualified domain name of the machine that hosts this ICM server.
SMTP Host	The fully-qualified domain name of the machine that hosts the SMTP server. For example, <code>SMTPSVR.xyzcorp.com</code> .

Parameter	Description
Chat Transcript Directory	The directory where Avaya IC stores the chat transcripts. The default directory is <i>IC_INSTALL_DIR\IC61\comp\icm\transcript</i>
Style Sheet Directory	The directory where Avaya IC stores the style sheets used to format emails that include chat transcripts. If you use the default installation directory, IC Manager automatically enters the following directory: <i>../comp/icm/transcriptxsl</i>
CIRS Host	The name of the machine that hosts the CIRS server used for load balancing.
ICM Property Management Debug Level	A number from 0 to 4 that represents the debug level for ICM components. Level 0 provides no debugging information in the logs, and level 4 provides full debugging information.
ICM Toolkit Debug Level	A number from 0 to 4 that represents the debug level for ICM toolkit components. Level 0 provides no debugging information in the logs, and level 4 provides full debugging information.
ICM Debug Level	A number from 0 to 4 that represents the debug level for the ICM server. Level 0 provides no debugging information in the logs, and level 4 provides full debugging information.

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- Right-click in the right pane, check the box next to **Show Advanced Properties**, and then review the fields as shown in the following table.

Note:

Do not enter a value or change the default values in the Advanced Properties unless a property needs to be explicitly changed from the default value calculated by the ICM server during its initialization. Most Avaya IC systems do not require setting any of the advanced properties.

Parameter	Description
Agent Connectivity Options (sec sec sec)	<p>This field contains three sets of seconds separated by spaces. For example, 60 600 1200.</p> <p>These sets of seconds represent the following parameters for configuring agent connections in seconds:</p> <ul style="list-style-type: none">● checkInterval determines how often the ICM server should check the state of the agent connections● sendInterval determines how often the ICM server should send a <code>keepalive</code> event across each agent connection● disconnectInterval determines how long the ICM server should wait before the server disconnects an agent connection due to inactivity
CIRS Connectivity Options (sec sec sec)	<p>This field contains three sets of seconds separated by spaces. For example, 60 600 1200.</p> <p>These sets of seconds represent the following parameters for configuring CIRS connections in seconds:</p> <ul style="list-style-type: none">● checkInterval determines how often the ICM server should check the state of the connections to the CIRS server● sendInterval determines how often the ICM server should send a <code>keepalive</code> event across each connection to a CIRS server● disconnectInterval determines how long the ICM server should wait before the server disconnects a connection to a CIRS server due to inactivity
Caller Connectivity Options (sec sec sec)	<p>This field contains three sets of seconds separated by spaces. For example, 60 600 1200.</p> <p>These sets of seconds represent the following parameters for configuring caller connections in seconds:</p> <ul style="list-style-type: none">● checkInterval determines how often the ICM server should check the state of the caller connections● sendInterval determines how often the ICM server should send a <code>keepalive</code> event across each caller connection● disconnectInterval determines how long the ICM server should wait before the server disconnects a caller connection due to inactivity

Parameter	Description
ICMBridge Connectivity Options (sec sec sec)	<p>This field contains three sets of seconds separated by spaces. For example, 60 600 1200.</p> <p>These sets of seconds represent the following parameters for configuring ICM Bridge connections in seconds:</p> <ul style="list-style-type: none"> ● checkInterval determines how often the ICM server should check the state of each connection to an ICM bridge ● sendInterval determines how often the ICM server should send a <code>keepalive</code> event across each connection to an ICM bridge ● disconnectInterval determines how long the ICM server should wait before the server disconnects a connection to an ICM bridge due to inactivity
IC Site	Automatically lists all sites in your Avaya IC system. This field contains the site where this ICM server is located.
Transcript Poll Interval (min)	How long the ICM server waits before checking the chat transcript directory and processing the transcripts to email to customers and save to the database.
CIRS Port	Type the port number. The default is 9506.
PDM Path	<p>The directory and file name of the <code>pdm.xml</code> file. For example, <code>IC_INSTALL_DIR\IC61\etc\pdm.xml</code>.</p> <p>Note: This field is case-sensitive. Use all lower-case letters in the directory and file name.</p>
Attribute Server	Automatically lists all Attribute servers in IC Manager. This field contains the same Attribute server that you use in the Website configuration.
Maximum Property Management Log Size (KB)	<p>The property management log is named:</p> <p><code>icmname_website.log</code></p>
Tunnel Port	<p>The ICM tunnel port used by the ICM server. The default port is 9505.</p> <p>Note: To enable tunnelling, perform the following steps on the machine that hosts the ICM server:</p> <ol style="list-style-type: none"> 1. Open the <code>callerap.txt</code> file in a text editor such as Notepad. 2. Make sure that the <code>\$tunnelEnabled</code> parameter is set to <code>True</code>.
Agent Server Port	The default port is 9501.
Caller Port	The default port is 9502.
ICMBridge Port	The default port is 9503.
Util Port	The default port is 9504.

Parameter	Description
Enable Transcript Added Flow	Only check this box if your Avaya IC system includes integration with another system. When you check this box, the ICM server runs the workflow from the Transcript Added Flow Name field when Avaya IC processes chat transcripts.
Transcript Added Flow Name	Name of the workflow to run when Avaya IC processes the chat transcript. Use the format <code>project_name.flow_name</code> in this field.
Transcript Added Flow Event	Name of the event to send in the WorkFlow.Run request when the server processes the chat transcript.

7. Select **OK**.
8. Restart the ICM server.

Configuring the Central Internet Routing service

If your Avaya IC system includes multiple ICM servers, you must configure a Central Internet Routing service (CIRS server) to balance the load between the ICM servers. Repeat the following steps for each CIRS server in your Avaya IC system.

The CIRS server does not run in IC Manager. For information about how to stop and restart the CIRS server, see [Starting and stopping Avaya IC services](#) on page 154.

 **Important:**

The steps in *Configuring the Central Internet Routing service* are optional. Do not perform these steps if the CIRS server requires only the default functionality. For example, perform these steps if you want to increase the logging level from the default logging level of "1".

To configure the CIRS server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Chat > CIRS**.
3. Select **New**.

4. In the right pane, type a name for the CIRS server in the **Global CIRS Name** field.

If your Avaya IC system includes multiple CIRS servers, type a name that allows you to easily identify this CIRS server. For example, for a CIRS server on the TESTBOX machine, type `cirs_TESTBOX`.

The CIRS server uses the global name to determine which CIRS record to read for configuration. The global name in this field must match the `dsObjectName` parameter in the `etc/cirsSystemParms.txt` file.

5. In the right pane, review the fields as shown in the following table.

Note:

Do not enter a value or change the default values in these fields unless a property needs to be explicitly changed from the default value calculated by the CIRS server during its initialization. Most Avaya IC systems do not require changing any of these fields.

Parameter	Description
CIRS Active	External clients use this parameter to determine which ICMs to use. This box must be checked for the CIRS server to function.
IC Site	Automatically lists all sites in your Avaya IC system. This field contains the site where this CIRS server is located.

6. Right-click in the right pane, check the box next to **Show Advanced Properties** then review the fields as shown in the following table.

Note:

Do not change the default or complete the Advanced properties unless a property needs to be explicitly changed from the default value calculated by CIRS server during its initialization. Most Avaya IC systems do not require setting any of the advanced properties.

Parameter	Description
CIRS Servlet Port	The default port is 9508. This is the CIRS service - CIRS caller referred to in Ports used by Avaya IC components on page 28,
CIRS Hostname	The name and domain of the machine that hosts the CIRS server. For example, <code>TESTBOX.xyzcorp.com</code> .
CIRS Port	The default port is 9506.

Parameter	Description
No Resource URL.	This is the URL used if no resources are available.
Util Port	The default port is 9507. This port is used to monitor the CIRS server.

7. Select **OK**.
8. Restart the CIRS server.

Configuring the Website

Before you configure the website, create the website application in the Configuration Tool. For more information, see [Configuring Web Management services](#) on page 257.

If you are configuring a localized version, you can specify a supported language for the Website. For more information, see [Configuring the Website for supported languages](#) on page 550.

Important:

The steps in *Configuring the Website* are optional. Do not perform these steps if the Website requires only the default functionality. For example, perform these steps if you want to create a separate administration Website and you want to disable access to the administration pages on the customer Website.

To configure the Website:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in the left pane, select **Website > Website Context**.
3. Select **New**.
4. In the right pane, type a name for the Website in the **Global Name** field.

Type a name that allows you to easily identify the Website. For example, for a Website on the TESTBOX machine, type `website_TESTBOX`.

The Website uses this parameter to determine which website context record to read. This value must match the `dsobject` parameter in the following file:

```
IC_INSTALL_DIR\IC61\comp\website\WEB-INF\web.xml
```

5. In the right pane, review the fields as shown in the following table.

Note:

Do not enter a value or change the default values in these fields unless a property needs to be explicitly changed from the default value calculated by the Website during its initialization. Most Avaya IC systems do not require changing any of these fields.

Parameter	Description
Context Active	External clients use this parameter to determine which website context to use. This box must be checked for the Website to function.
CIRS Name	This is the CIRS server to which the ICM CIRS servlet connects to perform load-balancing for chat contacts.
Website Debug Level	A number from 0 to 4 that represents the debug level for the website. Level 0 provides no debugging information in the logs, and level 4 provides full debugging information.
Default hostname for context	The name of the machine that hosts the Website. Used by external clients to determine the location of your customer-facing Website. If you enter a value in this field, Web Management uses this as the default <i>machine_name</i> in the URL for the customer-facing Website. If you leave this field blank, Web Management uses the value that you use in the URL when you access the customer-facing website for the first time. For example, if you use localhost in the URL the first time, the URL will be <code>http://localhost/website/public</code> .
IC Site	This property is not currently used.
Servlet context name	The name of your Website servlet. For example, <code>website</code> . This is the web application name in the Tomcat server. Used by external clients to determine website context name. This value is part of the URL used to access the customer-facing Website. For example, if you enter support for a customer support Website, the URL will be: <code>http://<hostname>/support/public</code>
Default internet protocol	Either HTTP or HTTPS protocol. Used by external clients to determine website protocol.
Default port for context	This is the HTTP connection port that the website uses. The defaults are: <ul style="list-style-type: none"> ● 80 for HTTP ● 443 for HTTPS

Configuring Web Management

- Right-click in the right pane, check the box next to **Show Advanced Properties** then complete the fields as shown in the following table.

Note:

Do not change the default or complete the Advanced properties unless a property needs to be explicitly changed from the default value calculated by Website during its initialization. Most Avaya IC systems do not require setting any of the advanced properties.

Parameter	Description
Admin Pages Active	Used by Website administration pages to determine if the administration pages should be accessible.
Public Pages Active	Used by Website administration pages to determine if the public pages should be accessible.
ICM Servlets Active	Used by ICM servlets to determine if they should be accessible.
ICM CIRS Servlet Active	You must check ICM Servlets Active to use this field. Used by ICM CIRS servlet to determine if it should be accessible.
ICM Tunnel Servlet Active	You must check ICM Servlets Active to use this field. Used by ICM Tunnel servlet to determine if it should be accessible.
ICM Tunnel Servlet Host	The name of the machine that hosts the ICM server. When this field is empty, the website determines the URL from the chat escalation request. Used by ICM applet to construct tunneling URL.
ICM Tunnel Servlet Polling Interval (msec)	The number of milliseconds that the CIRS server should wait between ICM applet tunnel requests.
Time to wait before tunneling (sec)	The number of seconds that the ICM chat applet will wait before attempting to tunnel.
Maximum website debug file length (KB)	Log size for the website debug file.
Toolkit Debugging Level for Website	A number from 0 to 4 that represents the debug level for website components.
Path to PDM metadata file	The directory path and file name of the pdm.xml metadata file. The default path and file name are: <i>IC_INSTALL_DIR\IC61\etc\pdm.xml</i>

Parameter	Description
Attribute Server	This is the Attribute server to which the website connects to send or receive property management and self-service FAQ updates. This field contains the same Attribute server that you use in the ICM server configuration. If you leave this blank, the Website tries to locate the Attribute server.
WebACD URL	The URL that an Administrative website uses to access the WebACD Administration pages. If you leave this field blank, the Website determines the URL from the WebACD server.
ICM Tunnel Servlet Maximum Request Length (bytes)	The maximum length in bytes for ICM applet tunnel requests.

7. Select **OK**.

8. Restart the Tomcat server that hosts the Website, as shown in the following table:

Operating system	Step
Windows	From the Services Control Panel, restart the Tomcat server.
Solaris	Run the following command: <code>./ictomcat.sh start</code>
AIX	Run the following command: <code>./ictomcat.sh start</code>

Refreshing the Directory server

After you configure the Website, you must refresh the Directory server. The refresh ensures that the Directory server is updated with the new information from the **Configuration** tab.

To refresh the Directory server:

- In IC Manager, select **Manager > Refresh**.

If you do not receive a Success message, perform the steps in [Troubleshooting the refresh in IC Manager](#) on page 510.

Configuring HTTP(S) tunneling (optional)

By default, the Web Management chat applet is not enabled for HTTP or HTTPS tunneling. You can configure the chat applet to try to tunnel if the applet cannot make a direct connection to the ICM server.

To configure HTTP(S) tunneling, perform the steps in the following topics:

- [Modifying the chat applet template file](#) on page 292.
- [Testing the configuration](#) on page 293.
- [Optional configuration for tunneling](#) on page 293.

Modifying the chat applet template file

To modify the chat applet template file.

1. In a text editor, open the chat applet template file, callerap.txt.

The version of this file can vary, depending upon the tenant and language of the contact. The following table describes the default versions and locations of this.

Operating system	File location
Windows	<i>IC_INSTALL_DIR</i> \IC61\comp\icm\default\callerap.txt
Solaris and AIX	<i>IC_INSTALL_DIR</i> /IC61/comp/icm/default/callerap.txt

2. Scroll down to the line in the file that reads:

```
appletCode += "<param name=\"tunnelEnabled\"
value=\"\$tunnelEnabled$\">";
```

3. Change this line to read:

```
appletCode += "<param name=\"tunnelEnabled\" value=\"true\">";
```

You must preserve the backslashes that occur before the double quotation marks.

Note:

You can customize the Website application to automatically populate the `$tunnelEnabled$` template variable with "true" or "false" according to unique business logic. Contact your Avaya technical representative if you want to use this type of customization.

4. Save the chat client template file (callerap.txt).

Testing the configuration

Note:

The chat client will not use tunneling if the client is able to make a connection on the configured ICM chat client port (default 9502). The client only uses tunneling if a direct connection cannot be made. To test tunneling, configure the applet to use an invalid port to connect to the ICM server.

To test the configuration of HTTP(S) tunneling:

1. Open the chat applet template file.
2. Change the default port in the chat applet template file:
 - a. Open the file as described in [Modifying the chat applet template file](#) on page 292.
 - b. Scroll down to the line that reads:

```
appletCode += "<param name=\"CallerPort\" value=\"9502\">";
```
 - c. Change this line to something like the following:

```
appletCode += "<param name=\"CallerPort\" value=\"9999\">";
```
 - d. Save the chat applet template file.
3. Start a new chat.

After you complete the test, re-open the chat applet template file and set the line back to the original port value.

Optional configuration for tunneling

In addition to modifying the caller applet template file, you can also perform the optional configuration in this topic. The optional configuration uses the Advanced Properties for the Website. For more information about the Advanced Properties, see [Configuring the Website](#) on page 288.

You can also include the following optional configuration for tunneling:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Website > Website Context**.
3. In the right pane, select the entry for the website and select **Edit**.

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4. To enable the Tunneling servlet.
 - a. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
 - b. Select the **ICM Tunnel Servlet Active** check box.

If you check this box, the Tunnel servlet will accept tunnel requests.
 - c. Select **Apply**.
5. To configure the server name used by the Tunneling Servlet to connect to the ICM server:
 - a. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
 - b. In the **ICM Tunnel Servlet Host** field, leave this field empty or type the fully-qualified domain name of the server that hosts the ICM server.

For example, type `myserver.mydomain.com`.

Avaya recommends that you do not complete this field. If you leave the field empty, the Tunneling servlet automatically determines the location of the ICM server.
 - c. Select **Apply**.
6. To configure the polling interval used by the chat client.
 - a. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
 - b. In the **ICM Tunnel Servlet Polling Interval** field, type the number of milliseconds between tunneling requests.

For example, type 4000.

If you leave this field empty, the Tunneling servlet uses an 8000 milliseconds interval between tunneling requests. An interval greater than 8000 milliseconds results in slower chat updates. An interval less than 8000 milliseconds results in a greater load on the Tunneling servlet.
 - c. Select **Apply**.
7. To configure the time to wait before trying to use tunneling after a direct connection to the ICM server fails:
 - a. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
 - b. In the **Time to wait before tunneling** field, type the number of seconds before the servlet makes a tunneling request.

For example, type 4.

If you leave this field empty, the Tunneling servlet waits 10 seconds before making a tunneling request. If you expect most users to tunnel, use 2 seconds or 3 seconds.
 - c. Select **Apply**.

Configuring SSL security for Web servers (optional)

You can configure Web Management and Email Management to work with Secure Sockets Layer (SSL) to provide secure Internet sessions. SSL is optional.

SSL connections require additional work for the Web servers, because they encrypt and decrypt all communications. Therefore, if your system includes SSL, install an ICM server on a machine dedicated to text conferencing. If desired, this ICM server can be a second ICM server. To install a second ICM server, see [Installing and configuring a second ICM server](#) on page 468.

If all tenants will be using SSL, you can host all Web Management servers on one machine, but should still host the ICM server on a dedicated machine.

To configure SSL, perform the steps in the following topics:

1. [Prerequisites for configuring SSL](#) on page 295.
2. [Modifying the Website configuration](#) on page 296.
3. [Configuring the WebACD server](#) on page 296.
4. [Editing the configuration file](#) on page 297.
5. [Modifying the SSL properties](#) on page 297.
6. [Configuring SSL for specific tenants](#) on page 298.

Prerequisites for configuring SSL

Before you configure Web Management or Email Management to use SSL, you must complete the following steps:

- Install and properly configure SSL. This step requires you to obtain SSL authentication keys from a certifying authority such as VeriSign, Thawte, or GTE CyberTrust.
- If your Avaya IC system includes a second Web Management server for SSL, configure SSL on the secure server and the machine that hosts the ComHub server.
- Install, configure, and test one of the following on the secure server machine:
 - A full set of Web Management servers or Email Management servers
 - A second ICM server

Modifying the Website configuration

You must modify the configuration of the website to use SSL values.

To modify the website configuration:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Website > Website Context**.
3. In the right pane, select the entry for the website and select **Edit**.
4. Update the values as shown in the following table:

Property	Recommended entry
Default internet protocol	Select https from the drop-down list
Default port for context	Type 443 .

5. Select **OK**.
6. Select **Manager > Refresh**.

Configuring the WebACD server

To configure the WebACD server:

1. In IC Manager, double-click the WebACD server in the lists of servers.
2. Select the **WACD** tab.
3. In the **WACD Webserver** field, update the values as shown in the following table:

Property	Recommended entry
Default internet protocol	Select https from the drop-down list
Default port for context	Type 443 .

4. Select **OK**.

Editing the configuration file

To edit the configuration file:

1. In Notepad or another text editor, open `webadmin.cfg`.
2. Change the value of the attribute `serverPort` to 443.
3. Add the new attribute-value pair shown in the following table:

Attribute	Value
protocol	https://

4. Save and close the file.

Modifying the SSL properties

To modify the SSL properties:

1. In IC Manager, select **Tools > Groups**.
2. Select the **Properties** tab.
3. Select **IC** in the left pane of the **Group Manager**.
4. Select **System/Configuration** in the Sections list.
5. Select the following properties.
6. Select **Edit** and set values for the properties, as shown in the following table:

Property	Recommended entry
ChatLoginServerProtocol	Type https .
ChatLoginServerPort	Type 443 .

7. Select **OK**.

Configuring SSL for specific tenants

The values that you set in the previous steps become the default values for all tenants. All tenants are not configured for SSL by default. You can override this default behavior by setting a tenant specific property.

To set the `website.pages.public` property:

1. In IC Manager, select **Services > MultiTenancy Administration**.
2. Select **Tenant Properties** in the **Tenant Admin** menu.
3. Select the tenant you want to customize from the **Select a Tenant** drop-down list.
4. Select **Customize Tenant**.
5. In the **Customize Tenant** page, select the language properties you want to set from the **Select Language** drop-down list at the top of the page.
6. Select the website properties.
7. Change the `website.pages.public` property to an absolute URL with the protocol specified as `http` for non SSL and `https` for SSL.

For example, to set SSL for a website,
`https://mymachine.company.com/website/public`.
8. Select **Update Data** at the bottom of the page.

Setting up a separate administration Website (optional)

You can configure a web server to serve as an administration website only. The administration Website will not contain any accessible external or customer-facing content, and the chat functions will be disabled.

These instructions assume that you have already configured Web Management.

Note:

If your Avaya IC system includes multiple Attribute servers, all websites and ICM servers must use the same Attribute server, so that their Tenant customization properties remain synchronized.

To set up a separate administration website, complete the steps in the following topics:

1. [Creating the Web application for the administration website](#) on page 299.
2. [Configuring an administration Website](#) on page 299.
3. [Configuring the WebACD server](#) on page 300.
4. [Integrating the administration Website](#) on page 301.

Creating the Web application for the administration website

Create the Web application for the administration website, as described in [Configuring Web Management services](#) on page 257.

Configuring an administration Website

Create a separate entry for the administration Website in IC Manager.

To configure the administration website:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Website > Website Context**.
3. Select **New**.
4. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
5. Complete the fields in the right pane, as shown in the following table:

Field	Recommended entry
Global Name	Type a name for the website, for example, type AdminWebsite.
Context Active	Check this box.
Admin Pages Active	Check this box.
Public Pages Active	Check this box.
ICM Servlets Active	Do not check this box.

For more information about these fields, see [Configuring the Website](#) on page 288

6. Select **OK**.
7. Select **Manager > Refresh**.
8. Restart the Tomcat server that hosts the Administration website.

Configuring the WebACD server

The administration and customer websites share the WACD Webserver property in the WebACD server. If you install separate administration and customer websites, you must configure this property and create a new name-value pair in the WebACD server for Collaboration and Sametime to function correctly.

For information on how to set up Sametime, see *IC Administration Volume 2: Agents, Customers, & Queues*.

To configure the WebACD server for the administration website:

1. In IC Manager, double-click the WebACD server in the lists of servers.
2. Select the **WACD** tab.
3. In the **WACD Webserver** field, type the fully-qualified domain name of the machine that hosts the administration website.
4. Select **Apply**.
5. Select the **Configuration** tab.
6. Select **New**
7. In the **CTI Type Editor** dialog box:
 - a. Complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple
Name	collaborationRootURL
Value	http://<customer_webserver>/icm/aimagentcl.hta

These entries are case-sensitive.

- b. Select **OK**.
8. If your Web Management system includes the Sametime feature:
 - a. Select **New**.
 - b. In the **CTI Type Editor** dialog box, complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple

Field	Recommended entry
Name	sametimeurl
Value	http://<customer_webserver>/website/sametime/kickoffsametime.jsp

c. Select **OK**.

You do not need to complete this step if your Web Management system does not include the Sametime feature.

9. Select **OK**.

Integrating the administration Website

To integrate the administration website:

1. In IC Manager, select **Tools > Groups**.
2. Select the **Properties** tab.
3. Select **IC** in the left pane of the **Group Manager**.
4. Select **System/Configuration** in the Sections list.
5. Select the following properties:
 - a. Select **Edit**.
 - b. Set values for the properties, as shown in the following table:

Property	Recommended entry
ChatLoginServer	Type the fully-qualified domain name of the machine that hosts the administration website.
ChatLoginServerWebsite	Type the servlet context name that you gave to this website in Configuring an administration Website on page 299.

Note:

If the columns in the right pane are Name, Entity, Value, and Overridable, select the - (**minus**) button on the toolbar to view and edit these properties.

6. Select **OK**.

Setting up a separate customer Website (optional)

You can configure a web server to serve as a customer Website only. The customer Website will not contain any accessible administration functions. These instructions assume that you have already configured Web Management.

Note:

If the Avaya IC system includes multiple Attribute servers, all Websites and ICM servers must use the same Attribute server, so that their Tenant customization properties remain synchronized.

To set up a separate customer Website, complete the steps in the following topics:

1. [Creating the Web application for the customer Website](#) on page 302.
2. [Configuring the customer Website](#) on page 302.
3. [Configuring the WebACD server](#) on page 303.

Creating the Web application for the customer Website

Create the Web application for the customer website, as described in [Configuring Web Management services](#) on page 257.

Configuring the customer Website

Create a separate entry for the customer website in IC Manager.

To configure the customer Website:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Website > Website Context**.
3. Select **New**.
4. Right-click in the right pane, and check the box next to **Show Advanced Properties**.
5. Complete the fields in the right pane, as shown in the following table:

Field	Recommended entry
Global Name	Type a name for the Website, for example, type CustomerWebsite.
Context Active	Check this box.

Field	Recommended entry
Admin Pages Active	Do not check this box.
Public Pages Active	Check this box.
ICM Servlets Active	Check this box.

For more information about these fields, see [Configuring the Website](#) on page 288

6. Select **OK**.
7. Select **Manager > Refresh**.
8. Restart the Tomcat server that hosts the customer website.

Configuring the WebACD server

If you install separate administration and customer websites, you must configure this property and create a new name-value pair in the WebACD server for Collaboration and Sametime to function correctly. These entries are case-sensitive.

To configure the WebACD server for the customer website:

1. In IC Manager, double-click the WebACD server in the lists of servers.
2. Select the **Configuration** tab.
3. Select **New**.
4. In the **CTI Type Editor** dialog box:
 - a. Complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple
Name	collaborationRootURL
Value	http://<customer_webserver>/icm/aimagentcl.hta

These entries are case-sensitive.

- b. Select **OK**.

Configuring Web Management

5. If your Web Management system includes the Sametime feature:
 - a. Select **New**.
 - b. In the **CTI Type Editor** dialog box, complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple
Name	sametimeurl
Value	http://<customer_webserver>/website/sametime/ kickoffsametime.jsp

- c. Select **OK**.
- You do not need to complete this step if your Web Management system does not include the Sametime feature.
6. Select **OK**.

■ ■ ■ ■ ■ ■

Chapter 11: Configuring Voice Chat

Avaya™ Interaction Center (Avaya IC) installations can include Voice Chat. Voice Chat is a component of Web Management that includes the following features:

Chat and VOIP - Voice chat contact is initiated from a chat session. The customer uses VOIP, and the agent uses a telephone.

Chat and Phone - Voice chat contact is initiated from a chat session. The customer and the agent use a telephone.

To set up both types of Voice Chat, perform the steps in the following topics:

1. [Prerequisites for Voice Chat](#) on page 306.
2. [Configuring the Workflow server for Voice Chat](#) on page 306.
3. [Building and loading workflows for Voice Chat](#) on page 309.
4. [Running the VMM setup script for Solaris](#) on page 312.
5. [Configuring the Voice Chat gateway](#) on page 312.
6. [Configuring the Voice Media Manager server](#) on page 314.
7. [Configuring the Voice Chat workflow table](#) on page 315.
8. [Setting startup options for the VMM server](#) on page 316.

Prerequisites for Voice Chat

Before you configure Voice Chat, you must:

1. Install and configure your Telephony switch and other hardware, including the following:
 - Install and configure a supported IP Gateway
 - Create a separate route point (VDN) for Voice Chat
 - Direct all calls on the Voice Chat route point to the PBXLink (TS) using the Adjunct Route

For information about supported Telephony switches, see *IC Installation Planning and Prerequisites*. For information about your Telephony switch, see the switch documentation.

2. Install and configure Telephony, including an ACD. For more information, see [Configuring Telephony](#) on page 191.
3. Install and configure Web Management. For more information, see [Configuring Web Management](#) on page 245.
4. Confirm that the Avaya Voice Media Manager (VMM) is installed and running. The Voice Media Manager does not run in IC Manager. On a Windows machine, you can view and start the Voice Media Manager in the Services Control Panel.

Avaya IC installs the VMM with the Avaya IC servers.

Configuring the Workflow server for Voice Chat

To configure the Workflow server for Voice Chat, perform the steps in the following topics:

1. [Adding a semaphore for the Voice Chat workflow](#) on page 307.
2. [Creating the Voice Chat channel for the Workflow server](#) on page 307.
3. [Restarting the Workflow server](#) on page 309.

Note:

This section assumes that you will use an existing Workflow server to handle Voice Chat contacts. If the Avaya IC system includes a separate Workflow server for Voice Chat, see [Creating a Workflow server](#) on page 135,

Adding a semaphore for the Voice Chat workflow

You must add a semaphore to all Workflow servers that process voice chat contacts and are in the same domain as the icmbridge account. The Attribute server uses the ICM account to log in to the ICM server. You entered this account in the **IC Login** field of the Attribute server configuration. For more information about the icmbridge account, see [Creating the Attribute server](#) on page 252 and [Using administrative accounts for non-human users](#) on page 120.

To add the semaphore for the Voice Chat workflow:

1. In IC Manager, double-click the Workflow server.
2. Select the **Workflow** tab.
3. Select the **Ellipsis (...)** button next to **Semaphores**.
4. In the **Semaphores** dialog box:
 - a. Select **New**.
 - b. Select in the new row and type `ivchat.ivchat_key`.
 - c. Select **OK**.
5. Select **OK**.

Creating the Voice Chat channel for the Workflow server

If your Avaya IC system includes multiple Workflow servers, perform these steps on the Workflow server that processes voice contacts.

To create the voice chat channel for the Workflow server:

1. In IC Manager, double-click the Workflow server that processes voice contacts.
2. Select the **Channels** tab.
3. Select **New Channel**.

Configuring Voice Chat

4. In the **Channel Editor** dialog box, complete the fields as shown in the following table. Select **OK**.

Field	Recommended entry	Notes
Global	Do not check this field.	Do not check this field to create a channel for a specific server or media, such as Voice Chat.
By Server	<ul style="list-style-type: none"> Do not check this field if you want this channel to handle events from all servers of the type that you select from the Service drop-down list. Check this field if you want this channel to handle events from only one specific server that you select from the Service drop-down list. 	<p>If you check this field, and you need this Workflow server to communicate with more than one server, you must create another channel for that server.</p> <p>Warning: If you check this field and the Telephony server is named "TS", the Workflow server will not be able to communicate with the Telephony server.</p>
Channel Range	No entry necessary.	Completed by IC Manager
		<ul style="list-style-type: none"> If you did not check the By Server field, select TS. If you checked the By Server field, select the Telephony server with which you want this Workflow server to communicate.
		*r<VDN_for_Voice_Chat> For example, *r57001.
Service	Select TS or a specific Telephony server from the drop-down list.	Whether you can select a server or a type of server, depends up whether or not you checked the By Server field.
Criteria	Type *r<VDN_for_Voice_Chat>	For example, type *r57001.

5. Select the channel that you created in the step above.
6. Select **New Association**.

7. In the **Channel Association** dialog box, complete the fields as shown in the following table. Select **OK**.

Field	Recommended entry
Channel Range	Completed by IC Manager
Service Interface	Completed by IC Manager
Event	TS.IncomingCall Note: This field is case-sensitive.
Flow	<project_name>.<flow_name> For example, type ts.incoming_ivchat

8. Select **OK**.

Restarting the Workflow server

To restart the Workflow server:

1. In IC Manager, select the Workflow server that handles voice contacts.
2. Right-click the Workflow server and select **Stop**.
3. After the Alarm Monitor at the bottom of IC Manager displays a message confirming that the Workflow server has stopped, right-click the Workflow server and select **Start**.

Building and loading workflows for Voice Chat

Voice Chat uses the following sample workflows:

- Incoming Voice Chat workflow in the TS project
- Voice Chat workflow in the ivchat project
- Telephony workflows, see [Building and loading workflows for Telephony](#) on page 214

The Avaya IC seed data does not include a compiled sample Voice Chat or a compiled sample Incoming Voice Chat workflow. You must build and load these workflows.

CAUTION:

By default, the Qualify Chat workflow assumes that you will create a WebVoice workgroup that includes agents who are configured to receive contacts from the voice and chat channels. If you do not intend to create this workgroup, you must customize the IVChatWorkgroup and PVChatWorkgroup properties in the Set Route Parameter blocks. The value of these properties must be the name of a valid workgroup. The workgroup must include agents who can handle contacts from the voice and chat channels. If you change these blocks, you must build and load the Qualify Chat workflow.

For more information about voice chat workflows and Workflow Designer, see *Avaya Workflow Designer User Guide*.

To load the Voice Chat workflows, complete the steps in the following topics:

1. [Building the Incoming Voice Chat workflow](#) on page 310.
2. [Building the Voice Chat workflow](#) on page 311.

Building the Incoming Voice Chat workflow

To build the Incoming Voice Chat workflow:

1. In Workflow Designer, select **File > Open Project** and open the TS project.

You can find the TS project in the following directory:

```
IC_INSTALL_DIR\IC61\design\IC\Flows\Avaya\TS\TS.prj
```

2. Double-click incomingivchat.qfd in the **Project** pane.
3. Select **Project > Settings**.
4. Select the **Database** tab and type the following values:
 - Interaction Center Data Source name in the **IC Data Source** field
 - Valid Avaya IC Administrator account in the **Login ID** field
The default account is Admin.
 - Password for the account in the **Password** field

5. Select **OK**.

6. Select **Build > Build Flowset**.

Workflow Designer verifies and compiles the flows. All error messages, including the block name, script name, and offending line, are displayed in the Output bar.

7. Select **File > Exit** to exit Workflow Designer.

Building the Voice Chat workflow

To build the voice chat workflow:

1. In Workflow Designer, open the Voice Chat workflow located in the following directory:
`IC_INSTALL_DIR\IC61\design\IC\flows\Avaya\ivchat\ivchat.qfd`
2. Select **Project > Settings**.
3. Select the **Database** tab and type the following values:
 - Interaction Center Data Source name in the **IC Data Source** field
 - Valid Avaya IC Administrator account in the **Login ID** field
 - Password for the account in the **Password** field
4. Select **OK**.
5. Select **Build > Build Flowset**.

Workflow Designer verifies and compiles the flows. All error messages, including the block name, script name, and offending line, are displayed in the Output bar.

Configuring the Telephony server for Voice Chat

You must configure the Telephony server to ensure that the agent is not placed in a Busy state and can receive a voice chat contact.

To configure the Telephony server for Voice Chat:

1. In IC Manager, double-click the Telephony server.
2. Select the **TS** tab.
3. Right-click in the background and check the box next to **Show Advanced Properties**.
4. Check the **Dial By Equipment** box.
You might need to scroll down to see this box.
5. Select **OK**.

Running the VMM setup script for Solaris

If you host your Avaya IC servers on Solaris, you must run the VMM setup script to start and configure the Voice Media Manager (VMM) for Voice Chat. The VMM setup script configures the VMM to start automatically.

 **Important:**

You only must perform this step if you host your Avaya IC servers on Solaris. Do not perform this step if you host your servers on Windows machines.

To run the VMM setup script and start the VMM on Solaris:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/bin`
2. Run `./vmm_setup start`

To stop the VMM on Solaris:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/bin`
2. Run `./vmm_setup stop`

Configuring the Voice Chat gateway

You must configure one Voice Chat gateway for each CLAN/Prowler card. Repeat the following steps for each gateway.

To configure the Voice Chat gateway:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Voice Chat > IPGateway**.
3. Select **New**.
4. Complete the following fields in the right pane:

Field	Recommended entry	Description
Name	Type a unique name for the gateway.	For example, type the node name of the CLAN card.
IP Address	Type the IP Address of the CLAN card.	

Field	Recommended entry	Description
Port	Type the near end listening port of the CLAN card.	
ACD Name	Select the name of the ACD from the drop-down list.	Select the same ACD that you configured for the Telephony server.
Site	Select the site from the drop-down list.	For example, select DefaultSite.
RoutePoint	Type the VDN that you set up in the switch to receive voice chat calls.	
Capacity	Type the number of calls which this gateway can handle.	For example, the default capacity is 31. Check your switch documentation for more information.
Active	Check this box if you want voice chat to be able to use the gateway.	Gateways should always be active unless there is a problem with the gateway, or you must perform maintenance on the machine. If there is a problem with a gateway, uncheck this box immediately to ensure the gateway cannot be used for subsequent calls. Before you bring the machine that hosts the gateway down for maintenance, make the gateway inactive so that it will not be used for subsequent calls. You can bring the machine down as soon as there are no more calls on the gateway.

5. Select **OK**.

Configuring the Voice Media Manager server

Avaya IC installs the Voice Media Manager (VMM) server when you install Avaya IC servers on a machine. You can configure and run more than one VMM server in an Avaya IC system.

Avaya IC uses a round robin algorithm to select a VMM server from an available list of VMMs to handle a voice chat.

To configure the VMM Server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Voice Chat > VMM**.
3. Select **New**.
4. Complete the following fields in the right pane:

Field	Recommended entry	Description
Name	Type the name of the machine that hosts the VMM server.	For example, if host the VMM server on testbox.xyzcorp.com, type "testbox" as the name of that VMM server.
IP Address	Type the IP Address of the machine that hosts the VMM server.	
Port	Accept the default of 8120.	

Field	Recommended entry	Description
Site	Select the site from the drop-down list.	For example, select DefaultSite.
Active	Check this box.	<p>A VMM server should always be active unless there is a problem with the VMM server, or you must perform maintenance on the machine.</p> <p>If there is a problem with a VMM server, uncheck this box immediately to ensure the VMM server cannot be used for subsequent calls.</p> <p>Before you bring the machine that hosts the VMM server down for maintenance, make the VMM server inactive so that it will not be used for subsequent calls. You can bring the machine down as soon as there are no more calls on the VMM server.</p>

5. Select **OK**.

6. Select **Manager > Refresh**.

If you do not receive a Success message, perform the steps in [Troubleshooting the refresh in IC Manager](#) on page 510.

Configuring the Voice Chat workflow table

To configure the Voice Chat workflow table:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Workflow > VoiceChat**.
3. Select **New**.

Configuring Voice Chat

4. Complete the following fields in the right pane:

Parameter	Recommended entry	Description
Name	Type the name of the IV chat workflow.	For example, type ivchat.
Timeout (sec)	Type the number of seconds that the workflow should wait before it times out.	This entry represents how many seconds a gateway should have to respond to a MakeCall request.

5. Select **OK**.

6. Select **Manager > Refresh**.

If you do not receive a Success message, perform the steps in [Troubleshooting the refresh in IC Manager](#) on page 510.

Setting startup options for the VMM server

You must set the VMM server to autostart, as described in the following topics:

- [Setting startup options for the VMM server on Windows](#) on page 316
- [Setting startup options for the VMM server on Solaris](#) on page 317

Setting startup options for the VMM server on Windows

To set startup options for the VMM server on Windows:

1. In the Services control panel, right-click on Avaya Voice Media Manager and select **Properties**.
2. Select **Automatic** from the **Startup Type** drop-down list.
3. Select **OK**.

Setting startup options for the VMM server on Solaris

You do not need to perform this step if you have already run the VMM setup script, as described in [Running the VMM setup script for Solaris](#) on page 312.

To configure the VMM server to start automatically on Solaris:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/bin`
2. Run `./vmm_setup start`

To stop the VMM server on Solaris:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/bin`
2. Run `./vmm_setup stop`

■ ■ ■ ■ ■ ■

Chapter 12: Configuring Email Management

Email Management is part of the email channel for Avaya™ Interaction Center (Avaya IC).

To configure Email Management, perform the steps in the following topics:

1. [Prerequisites for configuring the email channel](#) on page 320.
2. [Creating a secondary server environment for Email Management](#) on page 320.
3. [Configuring an IC Email server](#) on page 321.
4. [Configuring Email Template Administration](#) on page 328.
5. [Configuring a Workflow server for Email Management](#) on page 336.
6. [Using workflows for Email Management](#) on page 341.
7. [Creating routing hints for email workflows](#) on page 343.
8. [Configuring the WebACD server for Email Management](#) on page 345.
9. [Integrating Email Template Administration](#) on page 346.
10. [Configuring email accounts](#) on page 348.
11. [Creating an email status](#) on page 351.

Your Avaya IC system can also include optional Email Management features, such as an approval process or email message loop detection. For more information on how to configure these features, see *IC Administration Volume 1: Servers & Domains*.

For information on how to set up RONA for Email Management, see *IC Administration Volume 2: Agents, Customers, & Queues*

Prerequisites for configuring the email channel

Before you configure the email channel, you must:

1. Install and configure all prerequisite software and hardware. Depending on which Avaya IC servers you plan to configure, the prerequisites can include one or more of the following:

- Database
- POP3 and SMTP email servers and environment
- JDK
- Web servers

For information on which prerequisites you need for each machine, see *IC Installation Planning and Prerequisites*

2. Verify that all required third party software, including SMTP servers, POP3 servers, and email accounts are installed and configured and accessible through the network. For more information, see *IC Installation Planning and Prerequisites*.
3. Copy the server files to the machines where you plan to run the Avaya IC servers, described in [Installing Avaya IC servers](#) on page 49
4. Install the Avaya IC design and administration tools
5. Perform all the steps to configure the Avaya IC servers, databases, and related components, described in [Configuring core servers](#) on page 113
6. Configure Web Management, as set out in [Configuring Web Management](#) on page 245.

Creating a secondary server environment for Email Management

You must create a secondary server environment, including a secondary ORB server, if you host the servers that you need to configure for Email Management on a different machine than the machine that hosts the primary ORB server.

For more information about how to create a secondary server environment, see [Configuring secondary servers](#) on page 161.

Configuring an IC Email server

The IC Email server interacts with SMTP and POP3 servers. This server also manages all polling and forwarding of emails into the Avaya IC system from customer to agent. Through workflows, this server also handles the filtering of spam, the delivery of automatic replies, and the management of traffic flow to external agents and approval agents.

This section includes the following topics:

- [Guidelines for an IC Email server](#) on page 321.
- [Creating the IC Email server](#) on page 321.

Guidelines for an IC Email server

Ensure that the failover strategy for your Avaya IC domains includes the following:

IC Email server failover - The domain that includes your IC Email server must failover to the domain that includes your WebACD server

WebACD server failover - The domain that includes your WebACD server must failover to the domain that includes your IC Email server

Creating the IC Email server

The Avaya IC installation program does not automatically add this server. Email Management requires this server.

To create the IC Email server:

1. Select **Server > New** in IC Manager.
2. Select **Email** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Name	Email_<domain>	Include the domain in the server name to identify the server.

Configuring Email Management

Field	Recommended entry	Notes
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Email</code> from the drop-down list if the server is in the Email domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **ICEMail** tab and complete the fields in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the Interaction Center Data Source.	If you used the default name, select <code>interaction_center</code> .
SMTP Server Name	Enter the name of the machine that hosts the SMTP server.	This is the IC Email server that Avaya IC uses for outbound email. For example, enter <code>MailSrvExchange</code> .
SMTP Helo Domain Name	Enter the domain of the machine that hosts the SMTP server.	For example, enter <code>xyzcorp.com</code> .
HTTP Timeout (sec)	20	This is the number of seconds that the IC Email server waits for a response to an HTTP request before timing out.
Duplicate Message Checking	Check this field, if desired.	Checks to make sure that duplicate messages are not received. Does not check outbound email contacts. An incoming email contact is considered to be a duplicate if all of the following parts of the contact are identical to those in a previous contact: <ul style="list-style-type: none"> ● From address ● To address ● Subject ● Body

Field	Recommended entry	Notes
Maximum Messages Retrieved per POP3 Cycle	240	<p>Determines the maximum number of email contacts retrieved from a POP3 server over a single connection.</p> <p>The default entry assumes that the server takes approximately 1 second to download an email contact from the POP3 server. Thus, the server can process 240 contacts before the next polling cycle, 240 seconds later.</p>
POP3 Cycle Wait Time (sec)	240	<p>Specifies the default number of seconds that the server waits between checking for new contacts on a POP3 server. You can override this property per mail account.</p> <p>Increase this cycle if you expect to receive:</p> <ul style="list-style-type: none"> ● Large email contacts that take longer to download, such as contacts with big attachments. ● A relatively low volume of email contacts to avoid an unnecessary drain on system and network resources. <p>If you increase wait time, there will be a delay in when agents receive email contacts, since contacts are downloaded less frequently.</p>

Configuring Email Management

Field	Recommended entry	Notes
Detect Message Loops	Check this field, if desired.	<p>If you enable this field, the IC Email server cannot get into a loop if a customer has an auto-response (such as an Out Of Office notification) configured for their email account.</p> <p>It controls the use of email templates that the SmartAck block in the analyze workflow uses to send automatic responses to the sender, and it prevents the workflow from automatically sending a template acknowledgement to a customer.</p> <p>If you check this field, the EDU for a contact will activate a variable that counts the number of smart acknowledgments sent to the email address in a 24 hour period. If you customize the workflow to use this variable, the workflow will not send another smart auto acknowledgement when the limit is reached.</p>
Message Loop Count	Accept the default or change, if desired.	<p>The number of automated responses you want the customer to receive in a 24-hour period. Email Management will not automatically respond to messages that reach or exceed this count.</p> <p>For example, if you set this value to 5, Avaya IC returns the New Message template to the first five email contacts from the customer. The customer does not receive an acknowledgement for the sixth email contact.</p>
Loop Detection Type	Select a number from the drop-down list.	<p>Loop detection is based on "originator", "from address", "reply to address" or "both".</p> <p>You can select:</p> <ul style="list-style-type: none"> ● 0 for Originator (first looks for Reply-To, if not set then looks for "from") ● 1 for "from" address ● 2 for "reply to" address ● 3 for Both

Field	Recommended entry	Notes
Loop Template Id	Select the Ellipsis (...) button and navigate to the template ID you want to use.	ID of the template used to send a final message to a customer after the message loop count is exceeded. Create this template in Email Template Administration. For details, see <i>IC Administration Volume 1: Servers & Domains</i> .
Blank Message Template Id	Select the Ellipsis (...) button and navigate to the template ID you want to use.	Determines the ID of the template that is sent when a blank message is received from a contact. Create this template in Email Template Administration. For details, see <i>IC Administration Volume 1: Servers & Domains</i> .
Bounced Message Email Address	Enter an email address.	Determines the email address to which "bounce" messages are sent, including messages returned as undeliverable and messages bounced by Avaya IC workflows. For example, enter bounce@exchange.xyzcorp.com. A supervisor or administrator should monitor this account. Note: Make sure that the IC Email server does not poll this email address, or the server will retrieve all the bounce emails and enter them into the Avaya IC system.
Database Query Retries	Accept the default or change, if desired.	Determines the maximum number of times that the IC Email server will retry database queries if they fail. If this number of retries is exceeded, the IC Email server will shut itself down.

Configuring Email Management

Field	Recommended entry	Notes
Store All Messages	Check this field, if desired.	Determines whether Email Management stores the message body of acknowledgements initiated by workflows. Email Management stores these messages in the database, and agents can view them in the history browser. If you do not check this field, the agent can see that a message was sent, but cannot see the body of the message.
Validate Agent Reply	Do not check this field.	This field is no longer used.
Directory for Stored Messages	Enter a directory path.	The directory that the IC Email server should use to store messages larger than 1 MB in size. (The file path must be relative to the machine that hosts the IC Email server.) Note: If you do not specify a path, the files will be stored in <code>IC_INSTALL_DIR\IC61\MessageCenter\messages</code> .
Port for HTTP Requests	Accept the default of 19114.	Specifies the port on which the built-in HTTP server will listen. This is the port that is used if the specific server ports are not set. If this value is 0, the port defaults to the value set in the advanced property: HTTP Port for Admin Interface. If you must change this port, see Port assignments on page 26 for a list of the default port numbers used by the other Avaya IC servers. Port conflicts can cause serious problems within the Avaya IC system.

5. Select the **Analysis** tab and complete the fields in the following table.

Field	Recommended entry	Notes
Run Analyze Flow	Check this field.	<p>Check this field if you want:</p> <ul style="list-style-type: none"> ● The IC Email server to invoke an email analysis workflow to assist in the routing of incoming email contacts. ● To use Analyze with Keywords or Content Analyzer to process incoming email. <p>You must also complete all steps to configure Email workflows to use email analysis. For details, see Using workflows for Email Management on page 341 and the <i>Avaya IC Media Workflow Reference</i>.</p>
Run Outbound Email Flow	For the initial installation of Avaya IC, clear this field.	<p>Select this field if you want to:</p> <ul style="list-style-type: none"> ● Have Avaya IC analyze outbound email. ● Have a supervisor approve outbound email. ● Use Analyze with Keywords or Content Analyzer to process outbound email. <p>You must also complete all steps to configure Email workflows to use email analysis.</p>

Even if you check the fields in the **Analysis** tab, email analysis will not work if you do not perform the steps in the following topics:

- [Configuring a Workflow server for Email Management](#) on page 336
- [Using workflows for Email Management](#) on page 341
- [Creating routing hints for email workflows](#) on page 343

6. Select **OK** to save your configuration settings.

7. Right-click on the IC Email server and select **Start**.

For more information about the correct order for starting and stopping Avaya IC servers, see [Starting and stopping Avaya IC servers](#) on page 147.

Configuring Email Template Administration

Email Template Administration requires a Web application. You configure Email Template Administration on the **Web** tab of the Avaya IC Configuration Tool.

This section describes how to install and configure Email Template Administration for each operating system that Avaya IC supports. This section includes the following topics:

- [Where to configure Email Template Administration](#) on page 328.
- [Hosting multiple Web applications on one machine](#) on page 328.
- [Advanced properties for Email Template Administration](#) on page 329.
- [Configuring Email Template Administration on Windows](#) on page 329.
- [Configuring Email Template Administration on Solaris](#) on page 331.
- [Configuring Email Template Administration on AIX](#) on page 334.



Important:

The Configuration Tool overwrites all manual edits that you make to an Avaya IC configuration file.

Where to configure Email Template Administration

Configure Email Template Administration on the machine that hosts the templates for Email Management and the Web pages for Email Template Administration.

Hosting multiple Web applications on one machine

If the Avaya IC system includes more than one Web application on the same machine as the WebLM, Avaya recommends that you:

- Select **Multiple** for the **Tomcat Setup** option.
- Configure all of the Web applications on the target machine at the same time.



Important:

If you do not configure all of the Web applications simultaneously, leave the options for all Web applications on the target machine checked when you re-run the Configuration Tool to create the new Web applications. If you do not leave the options for the previously created Web applications checked, the Configuration Tool may delete those Web applications from the machine.

Advanced properties for Email Template Administration

The Web tab also includes advanced properties for the Java Virtual Machine.

Only configure the advanced properties if you expect a high volume of access to Email Template Administration. For more information, see [Advanced properties on the Web tab](#) on page 501.

Configuring Email Template Administration on Windows

Use these instructions if you plan to host Email Template Administration on a Windows machine.

You do not need to stop the IIS Web server on Windows machines.

To configure Email Template Administration to run on a Windows machine:

1. To start the Configuration Tool, select **Start > Programs > Avaya Interaction Center 6.1 > Configuration Tool**.

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

2. Log in with your IC Manager login ID and password.
3. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	<p>This option determines how many Tomcat servers the Configuration Tool must configure on the target machine.</p> <p>Tip: Avaya recommends that you use the Multiple option.</p> <p>The Multiple option creates a separate Tomcat server for each Web application.</p> <p>The Single option creates a single Tomcat server that controls all Web applications.</p> <p>For more information, see General fields on the Web tab on page 495.</p>	Multiple
JDK Home	<p>The path to the directory where the Java SDK is installed.</p> <p>For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i>.</p>	C:\jdk1.3.1_06

Configuring Email Management

Field	Description	Sample entry
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
IIS Website	The name of the IIS Web server that the Web application will use. Tip: For a localized version of IIS, type the localized name for the IIS Web server.	Default Web Site
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: <code>http://<server>.<domain>.com:9606/ictest</code> Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

4. Check the **Configure Email Template Administration** box.
5. Select **Apply Settings**.
6. Select **OK** in the **Success** dialog box.
7. Select **Exit**.

8. To complete the configuration, perform the following steps to ensure that Email Template Administration services start properly:
 - a. Open the Windows Services control panel.
 - b. Start the Tomcat NT services:
 - For a multiple Tomcat setup, start Avaya IC Email Template Management Service 6.1.
 - For a single Tomcat setup, start Avaya IC Jakarta Service 6.1.

For more information about how to start and stop Web application services, see [Starting and stopping Avaya IC services](#) on page 154.

Configuring Email Template Administration on Solaris

Use these instructions if you plan to host Email Template Administration on a Solaris machine.

 **Important:**

To configure Email Template Administration on Solaris, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure Email Template Administration to run on a Solaris machine:

1. Stop the Sun ONE server that hosts the Email Template Administration application with the stop script packaged with the Web server:
`<SunONE_install_dir>/servers/<my_ONE_server>/stop`
2. Start the Configuration Tool:
 - a. Navigate to `IC_INSTALL_DIR/IC61/bin`
 - b. Run `./configure`

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.
3. Log in with your IC Manager login ID and password.

Configuring Email Management

4. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	<p>This option determines how many Tomcat servers the Configuration Tool must configure on the target machine.</p> <p>Tip: Avaya recommends that you use the Multiple option.</p> <p>The Multiple option creates a separate Tomcat server for each Web application.</p> <p>The Single option creates a single Tomcat server that controls all Web applications.</p> <p>For more information, see General fields on the Web tab on page 495.</p>	Multiple
JDK Home	<p>The path to the directory where the Java SDK is installed.</p> <p>For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i>.</p>	/opt/j2sdk1_3_1_06
Tomcat Base Port	<p>The port used to configure the following ports:</p> <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
Web Server Home	<p>The installation path for the Sun ONE™ Server that hosts the Web application.</p>	/opt/iplanet
Web Server Name	<p>The root name of the server as found in the Sun ONE™ Server home directory.</p> <p>Note: Do not include <code>https-</code> in the Web server name.</p>	testbox.xyzcorp.com
Web Server Host	<p>The name of the machine that hosts the Web server.</p> <p>Do not include the DNS domain.</p>	testbox
DNS Domain	<p>The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain.</p> <p>Note: Verify the default DNS domain carefully to ensure that it is correct.</p>	xyzcorp.com
Web Server Port	<p>The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are:</p> <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. <p>Do not change the default port unless you assign a different port to the Web server.</p>	Default: 80

Field	Description	Sample entry
IC Test	<p>Optional.</p> <p>IC Test is a Web application that you can use to test your Tomcat configuration.</p> <p>If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test.</p> <p>To access IC Test, use the Tomcat HTTP port in the URL. For example, type: <code>http://<server>.<domain>.com:9606/ictest</code></p> <p>Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.</p>	Checkmark in box

5. Check the **Configure Email Template Administration** box.
6. Select **Apply Settings**.
7. Select **OK** in the **Success** dialog box.
8. Select **Exit**.
9. To complete the configuration, perform the following steps to ensure that all Email Template Administration services start properly:
 - a. In the Sun ONE Server installation directory:
 - Open the `https-admserv` directory.
 - If the directory includes a file called `start-ICEnv.backup`, execute the following command to rename the file:


```
mv start-ICEnv.backup oldstart-ICEnv
```
 - b. Start the Sun ONE server that hosts the Email Template Administration application with the following start script:


```
<SunONE_install_dir>/servers/<my_ONE_server>/start
```
 - c. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.
 - d. Use the following script to start Tomcat:
 - If you selected **Multiple** in the **Tomcat Setup** field:


```
./ictomcat.sh start all
```
 - If you selected **Single** in the **Tomcat Setup** field:


```
./ictomcat.sh start rlmanager
```

Configuring Email Template Administration on AIX

Use these instructions if you plan to host Email Template Administration on an AIX machine.

 **Important:**

To configure Email Template Administration on AIX, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure Email Template Administration to run on an AIX machine:

1. Stop the IBM HTTP Server that hosts the Website application with the stop script packaged with the Web server:

```
./httpserver.sh stop
```

2. Start the Configuration Tool:

- a. Navigate to `IC_INSTALL_DIR/IC61/bin`

- b. Run `./configure`

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

3. Log in with your IC Manager login ID and password.

4. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	/usr/java131
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600

Field	Description	Sample entry
Web Server Home	The installation path for the IBM HTTP server instance that hosts the Web application.	/usr/HTTPServer
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: http://<server>.<domain>.com:9606/ictest Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

5. Check the **Configure Email Template Administration** box.
6. Select **Apply Settings**.
7. Select **OK** in the **Success** dialog box.
8. Select **Exit**.
9. To complete the configuration, perform the following steps to ensure that all Email Template Administration services start properly:
 - a. Start the IBM HTTP Server that hosts the Email Template Administration application with the following start script:

```
./httpserver.sh start
```

Configuring Email Management

b. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.

c. Use the following script to start Tomcat:

- If you selected **Multiple** in the **Tomcat Setup** field:

```
./ictomcat.sh start all
```

- If you selected **Single** in the **Tomcat Setup** field:

```
./ictomcat.sh start rlmanager
```

Configuring a Workflow server for Email Management

To configure the Workflow server for Email Management, perform the steps in the following topics:

1. [Creating a Workflow server for Email Management](#) on page 336.
2. [Creating the email channels for the Workflow server](#) on page 337.
3. [Starting the Workflow server](#) on page 341.

If your Avaya IC system includes multiple Workflow servers, perform these steps on each Workflow server that handles pre-qualification for email contacts and routes email contacts.

Creating a Workflow server for Email Management

These instructions only provide information about those parameters you need to set when you create a Workflow server to handle email contacts. For more information about other parameters in the Workflow server, see [Configuring multiple Workflow servers](#) on page 135 and *IC Administration Volume 1: Servers & Domains*.

CAUTION:

If you do not configure the Workflow server with synchronous startup flows, the Qualify Email workflow cannot resolve the pkey of the queue where a contact is to be routed. If this occurs, Avaya IC cannot route email contacts.

To create a Workflow server for Email Management:

1. In IC Manager, select **Server > New**.
2. Select **Workflow** from the list of servers.
3. Select **OK**.

4. Select the **General** tab, and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	Workflow_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select <code>Email</code> to use the preconfigured domain for Email Management.
Host	Select the machine's IP address from the drop-down list, or type the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

5. Select the **Workflow** tab.

6. From the **IC Data Source** drop-down list, select the Interaction Center data source.

The default name for this data source is `interaction_center`. This is the data source that you created in [Generating the Interaction Center application](#) on page 109.

7. Select **Synchronous Startup Flows**.

8. If the following rows do not exist, add them to the Synchronous Startup Flows:

- a. Select **New**.
- b. In the new row, type `web_routing.update_gw_cache`
- c. Select **OK**.

9. Continue with [Creating the email channels for the Workflow server](#) on page 337.

Creating the email channels for the Workflow server

You must add email channels and associations with the workflows for each channel. You create separate channels for email qualification and for email analysis. If the Avaya IC system uses different Workflow servers to handle each task, create these channels in the appropriate Workflow server.

This section includes the following topics:

- [Creating the email channel for email qualification](#) on page 338.
- [Creating the email channel for email analysis](#) on page 339.

Creating the email channel for email qualification

Perform these steps in each Workflow server that will run the Qualify Email workflow.

To create an email channel for a Workflow server that qualifies emails:

1. In the Server Editor for the Workflow server, select the **Channels** tab.
2. Select **New Channel**.
3. In the **Channel Editor** dialog box, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Global	Do not check this field.	Do not check this field to create a channel for a specific server or media, such as Email.
By Server	<ul style="list-style-type: none"> • Do not check this field if you want this channel to handle events from all servers of the type that you select from the Service drop-down list. • Check this field if you want this channel to handle events from only one specific server that you select from the Service drop-down list. 	<p>If you check this field, and you need this Workflow server to communicate with more than one server, you must create another channel for that server.</p> <p>Warning: If you check this field and the WebACD server is named "WACD", the Workflow server will not be able to communicate with the WebACD server.</p>
Channel Range	No entry necessary.	Completed by IC Manager
Service	Select WACD or the WebACD server from the drop-down list.	Whether you can select a server or a type of server, depends up whether or not you checked the By Server field.
Criteria	Type media=email	

4. Select **OK** in the **Channel Editor** dialog box.
5. Select the channel that you created in the step above.
6. Select **New Association**.
7. In the **Channel Association** dialog box, complete the fields as shown in the following table.

Field	Recommended entry
Channel Range	Completed by IC Manager
Service Interface	Completed by IC Manager

Field	Recommended entry
Event	WACD.QualifyEmail Note: This field is case-sensitive.
Flow	<flow_project>.<flow_name> For example, type wacd.qualifyemail

8. Select **OK** in the **Channel Association** dialog box.
9. Perform one of the following steps:
 - Select **OK** in the Server Editor to complete the Workflow server configuration.
 - If the Workflow server will also run email analysis workflows, continue with [Creating the email channel for email analysis](#) on page 339.

Creating the email channel for email analysis

Perform these steps in each Workflow server that will run the email analysis workflow.

To create an email channel for a Workflow server that analyzes emails:

1. In the Server Editor for the Workflow server, select the **Channels** tab.
2. Select **New Channel**.
3. In the **Channel Editor** dialog box, complete the fields as shown in the following table.

Field	Recommended entry	Notes
Global	Do not check this field.	Do not check this field to create a create a channel for a specific server or media, such as Email.
By Server	<ul style="list-style-type: none"> ● Do not check this field if you want this channel to handle events from all servers of the type that you select from the Service drop-down list. ● Check this field if you want this channel to handle events from only one specific server that you select from the Service drop-down list. 	<p>If you check this field, and you need this Workflow server to communicate with more than one server, you must create another channel for that server.</p> <p>Warning: If you check this field and the WebACD server is named "WACD", the Workflow server will not be able to communicate with the WebACD server.</p>
Channel Range	No entry necessary.	Completed by IC Manager

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Field	Recommended entry	Notes
Service	Select WACD or the WebACD server from the drop-down list.	Whether you can select a server or a type of server, depends up whether or not you checked the By Server field.
Criteria	Type *.	

4. Select **OK** in the **Channel Editor** dialog box.
5. Select the channel that you created in the step above.
6. Select **New Association**.
7. In the **Channel Association** dialog box, complete the fields as shown in the following table to create an inbound and an outbound association for the email channel.

Channel or Association	Field	Recommended entry
Association 1	Channel Range	Completed by IC Manager
	Service Interface	Completed by IC Manager
	Event	ICEmail.Analyze Note: This field is case-sensitive.
	Flow	<flow_project>.<flow_name > For example, enter one of the following: <ul style="list-style-type: none"> ● icemail.analyzenoca if your system does not include Content Analyzer ● icemail.analyzeca if your system includes Content Analyzer

Channel or Association	Field	Recommended entry
Association 2	Channel Range	Completed by IC Manager
	Service Interface	Completed by IC Manager
	Event	ICEmail.OutboundEmail Note: This field is case-sensitive.
	Flow	<flow_project>.<flow_name> For example, enter one of the following: <ul style="list-style-type: none"> ● icemail.outboundnoca if your system does not include Content Analyzer ● icemail.outboundca if your system includes Content Analyzer

8. Select **OK** in the **Channel Association** dialog box.
9. Select **OK** in the Server Editor to complete the Workflow server configuration.

Starting the Workflow server

To start the Workflow server:

1. In IC Manager, select the Workflow server that handles email contacts.
2. Right-click the Workflow server and select **Start**.

Using workflows for Email Management

You can use the sample workflows to configure and test your Email Management servers. The Avaya IC seed data includes compiled sample workflows. When you imported seed data into the CCQ database, you stored the compiled workflows in the database.

Email Management uses the following sample workflows:

- An incoming and outbound Email Analysis workflow from the ICEmail project
- The Qualify Email workflow in the WACD project
- All Web Management workflows, see [Using workflows for Web Management](#) on page 277

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Before your Avaya IC system moves into production, you can modify the properties of the sample workflows to meet your contact center's needs. For example, you can route an outbound email to an approval queue or to an approving agent.

For a complete list of the workflows in these projects, including the directories where Avaya IC installs the workflows, see *Avaya IC Media Workflow Reference*.

Configuring Outbound Email Analysis workflows

The ICEmail project contains two sample Outbound Email Analysis flows. The sample Outbound with Keywords workflow (outboundnoca) performs analysis on outbound email in Avaya IC systems that do not include Content Analyzer. The sample Outbound with Content Analyzer workflow (outboundca) performs analysis on outbound email in Avaya IC systems with Content Analyzer.

The sample Outbound Email Analysis flows depend on settings in the following:

- Outbound settings in the IC Email server
- Email channel in the Workflow server
- Group properties in IC Manager
- Blocks in the Qualify Email workflow
- Blocks in the Outbound Email Analysis workflow

You must know the configuration of your production environment before you can configure the Outbound Email Analysis flows to work in your Avaya IC system. Therefore, until you have tested your Email Management system and know the configuration of your production environment, you should not run any Outbound Email Analysis flows. For more information on this setting, see [Creating the IC Email server](#) on page 321.

If you want to run an Outbound Email Analysis workflow in your Email Management system, you must configure and test your system carefully.

To configure Outbound Email Analysis:

1. In Workflow Designer, open the appropriate Outbound Email Analysis workflow in the ICEmail project, as shown in the following table:

Workflow	Avaya IC system configuration
outboundca	Avaya IC systems with Content Analyzer.
outboundnoca	Avaya IC systems without Content Analyzer.

2. Double-click the GetAgentQuota block and in the Property Sheet:
 - a. Select the **Basic** tab.
 - b. Set the value of `DefaultQuotaValue` to 0 (zero).

The default value is 0 (zero), no review of outbound email contacts.
3. Save and recompile the workflow.
4. In IC Manager, set the group properties for agents
 - a. Select **Groups > Properties** to open the **Group Properties** dialog box:
 - b. Select Email/Agent and set the value of the ReviewQuota property.

The default value is 0 (zero), no review of outbound email contacts.
 - c. Apply and save the changes.

For more detailed instructions, see [Setting global properties for all agents](#) on page 389.
5. In IC Manager, if you configured any agents not to cascade their properties from the global properties, set the value of ReviewQuota to 0 (zero) for those agents also. For more detailed instructions, see [Setting properties for individual agents](#) on page 389.

Creating routing hints for email workflows

The sample email workflows contain blocks that use routing hints from the RoutingHint table in the Directory server to analyze and route email contacts. These blocks include:

- Fetch Routing Hints (email) block in the Qualify Email workflow
- Set Routing Hint blocks in each of the Email Analysis workflows

 **Important:**

Routing hints must be in lower case. Do not use mixed upper and lower case in your routing hints. If the routing hint is not in all lower case, the workflow cannot locate the routing hint, and Avaya IC cannot correctly route the contact.

For more information about the sample email workflows and how the workflows use routing hints, see *Avaya IC Media Workflow Reference*.

The email workflows use hints from the RoutingHint table to route email contacts.

Each row in the routing hint table contains the following:

- A routing hint
- The IDs of the queues where contacts that match the routing hint should be routed

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Tip:

The default email queue is DefaultEmailQueue@DefaultTenant. You can create and use additional email queues for routing email contacts. For more information, see *IC Administration Volume 2: Agents, Customers, & Queues*.

The routing hints that you need to create for the sample email workflows depend upon your Avaya IC system. The following table describes the routing hints required by the different sample email workflows.

Avaya IC deployment	Email workflow	Routing hints
Email contact routing	wacd.qualifyemail	If deployment includes email analysis, no additional hints required. If no email analysis, create a routing hint for the To address of email. For example, <ul style="list-style-type: none"> incomingemail@ic.avaya.com
Email Analysis with Keywords	icemail.analyzenoca	Create a routing hint with a value such as: <ul style="list-style-type: none"> sales support printers
	icemail.outboundnoca	Create a routing hint with a value of: <ul style="list-style-type: none"> approvalrequired
Email Analysis with Content Analyzer	icemail.analyzeca	Create a routing hint with a value such as: <ul style="list-style-type: none"> home computing desktop Also, create routing hints for language with an ISO-639-1 value such as: <ul style="list-style-type: none"> en sp fr de zh
	icemail.outboundca	Create a routing hint with a value of: <ul style="list-style-type: none"> approvalrequired suspectcontent

To create routing hints:

1. In IC Manager, select the **Configuration** tab.
2. In the left pane, select **Tables > Workflow > RoutingHint**.
3. Select **New**.

4. In the right pane, complete the fields shown in the following table:

Parameter	Recommended entry	Description
Routing Hint	Type a routing hint.	Type the name of a routing hint required by a sample email workflow. The routing hint must be a single word in all lower case, and cannot contain any special characters.
Email Queue ID	Type DefaultEmailQueue@DefaultTenant.	DefaultEmailQueue@DefaultTenant is the default email queue. For more information about email queues, see <i>IC Administration Volume 2: Agents, Customers, & Queues</i> .
Category/Qualifier	Leave this field blank.	
Tenant	Select DefaultTenant from the queue from the drop-down list.	Select the tenant used by the queue. For the DefaultEmailQueue, select DefaultTenant to ensure that the routing hint uses the correct queue.

5. Select **OK**.

6. Select **Apply**.

Repeat Steps 3 through 6 until you create all required routing hints.

7. Select **Manager > Refresh**.

Configuring the WebACD server for Email Management

If you install the WebACD server and IC Email server on different machines, you must configure the WebACD server for Email Management.

To configure the WebACD server for Email Management:

1. In IC Manager, double-click the WebACD server in the lists of servers.
2. Select the **Configuration** tab.
3. Select **New**.

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4. In the **CTI Type Editor** dialog box:
 - a. Complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple
Name	emailservername This field is case-sensitive.
Value	Fully-qualified domain name or IP address of the machine that hosts the IC Email server. Make sure this name can be resolved to the correct machine from all agent machines.

- b. Select **OK**.
5. Select **OK**.
6. Stop and restart the WebACD server.

Integrating Email Template Administration

You must configure Email Template Administration to launch the Email Template Administration Tool from IC Manager.

Note:

You only need to complete those properties listed in this section to integrate Email Management administration. You do not need to complete the other properties available in the System/Configuration list.

To configure Email Template Administration:

1. In IC Manager, select **Tools > Groups**.
2. Select the **Properties** tab.
3. Select **IC** in the left pane of the **Group Manager**.
4. Select **System/Configuration** in the **Sections** list.

5. Select the following properties:
 - a. Select **Edit**.
 - b. Set values for the properties, as shown in the following table:

Property	Recommended entry
EmailLoginServer	Type the fully-qualified domain name of the server that hosts the Email Template Administration pages. For example, type ICEmail.xyzcorp.com .
EmailLoginServerPort	Type the IC Email server web port. For example, the default port is 80.
EmailLoginServerWebsite	Type rlmanager as the name of the Response Library Manager web application. The Configuration Tool defined this application name when you configured Email Template Administration.
EmailServer	Type the fully-qualified domain name of the machine that hosts the IC Email server.
EmailServerPort	Type the IC Email server HTTP port. For example, the default is 19114.

If one of these properties is not available, select **Property Insert** and select the property name from the drop-down menu.

Note:

If the columns in the right pane are Name, Entity, Value, and Overridable, select the - (**minus**) button on the toolbar to view and edit these properties.

6. Select **Apply**.
7. Select **OK**.
8. Start the IC Email server, if necessary.

Configuring email accounts

You must configure Email Management to use your mail accounts to:

- Retrieve inbound email from customers
- Send outbound agent replies

The following table describes the email accounts that must exist before you configure Email Management to use email accounts.

Required email accounts	Description
Email Management mail accounts	These accounts must exist as mailboxes on the POP3 server. Note the login ID and password. IC Manager can only link to an existing mailbox. IC Manager cannot create mailboxes on a POP3 server.
At least one email account for the Customer account for inbound customer messages	Web Management uses customer email accounts to send email from the Customer Web site to your contact center. Use this email address for mailto: links on your website and wherever you plan to make email addresses available to customers.
Bounced email account	Email Management uses this account as the destination address for emails sent by the IC Email server that the SMTP server bounces or rejects. All filtered spam and other junk emails also get forwarded to this bounced email. You include this account in your IC Email server configuration.
Disabled accounts (optional)	You can set up Disabled accounts to test or troubleshoot the following servers: <ul style="list-style-type: none"> ● Web Management servers ● IC Email server ● Tomcat server where you install the website application Email Management does not retrieve messages for disabled accounts.

Email Management can manage mailboxes in any number of domains so long as it has the necessary information to log onto the POP3 server.

Tip:

The IC Email server generates the "to address" for an incoming email from the **Name** and **Domain** fields on the **General** tab of the server. As a result, the logon account does not need to match the first part of the email address, and the "to address" is independent of the logon account used to poll the POP3 server.

To add a POP3 email account to Email Management:

1. In IC Manager, select **Services > Email Accounts**.
2. In the **Email Accounts** dialog box, select **New**.
3. In the **New Email Account** property sheet, complete the fields as shown in the following table.

Tab	Field	Description
General tab	Name	Type the mailbox name exactly as it is configured in your POP3 server. For example, type <code>agent</code> .
	Domain	Type the mailbox domain exactly as it is configured in your POP3 server. For example, type <code>xyzcorp.com</code> .
	Tenant	Select the tenant that should be associated with this email account from the drop-down list.
	Return address	This address appears in the "From" field in an email response sent to the customer from this account. IC Manager automatically completes this field with <code>name@domain</code> . To use a different return address, select it from the Return Address drop-down list.
Server tab	Outgoing Email	Type the network address for the SMTP email server you would like to use here.
	Incoming Email	Type the network address of the POP3 server where the email accounts are configured, the logon account, and password in the appropriate field. Note: If any of these settings are incorrect, Email Management will not be able to connect to the POP3 email server.
	Log on using Secure Password Authentication	Secure Password Authentication is a challenge-response protocol used by the Windows security subsystem to prevent passwords from being sent through the network in plain text. Your POP3 server must support Secure Password Authentication to use this option.

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Tab	Field	Description
Templates tab	—	<p>The Templates tab allows you to specify the following templates:</p> <ul style="list-style-type: none"> ● Header template specifies the text to be inserted at the top of any email to a customer. ● Footer template specifies the text to be appended to the end of any email to a customer. ● New Message template specifies the text to be automatically sent to a customer when a new email is received from that customer. ● Follow Up template specifies the basic acknowledgement message to be sent when a customer replies to a message sent from Avaya IC. Email Management sends this template whether the message to the customer was an automated outbound or an agent reply. <p>Create these templates in Email Template Administration.</p>
Miscellaneous tab	Validate incoming email addresses	Select this check box if you want to limit the addresses that can send email to this account.
	Valid email addresses	Select the button following this field to specify which addresses can send email to this account. If a message comes in from a different email address, it will be rejected by Email Management. You must check Validate incoming email addresses to use this field.
	Override global email checking scheduler	Check this box if you want this account to check for new messages either more or less frequently than the global setting that was specified for the IC Email server.
	New email check frequency	Type the number of seconds between email checks in this field. You must check Override global email checking scheduler to use this field.

4. Select **Test** to test your incoming and outbound accounts with your POP3 server or SMTP server.
5. Select **OK**.

For more information about how to create Avaya IC email accounts, see *IC Administration Volume 1: Servers & Domains*.

Creating an email status

An agent can select an email status from a scrollable list in Avaya Web Agent. The agent selects a status to resolve an email contact. You use IC Manager to create the different types of email status that appear in the list.

Important:

You must create at least one email status of Dismiss and check the **Messages set to this status should be treated as answered** field for that status. Email Management requires this Dismiss status when tasks are cancelled in IC Website Administration Tool. If you do not create a Dismiss status, and a task is cancelled from IC Website Administration Tool, the IC Email server server will generate an alarm.

For more information on how to create an email status, see *IC Administration Volume 1: Servers & Domains*.

To create an email status:

1. In IC Manager, select **Services > Mail Template Administration**.

If prompted, log in to Email Template Administration with the same login ID and password that you used for IC Manager.

2. Select **New**.

3. Select **New Status**.

4. In the **New Status Properties** dialog box, complete the following fields:

- a. Type a brief description of the status in the **Description** field.

This text is displayed on the list of statuses available to agents in Avaya Agent.

- b. Check the boxes shown in the following table, if desired:

Check box	Recommended entry
Messages set to this status should be treated as answered	Check this box if the status indicates a resolution of the issue that requires no further action by the agent.
Send template for this status	Check this box if you want to send an auto-response message to the user when an agent assigns this status to a message. Choose a template to send. If you do not know the location of the template, select Browse and navigate to the desired template.

5. Select **OK** to close the **Status Properties** dialog box.

■ ■ ■ ■ ■ ■

Chapter 13: Configuring agent applications

Perform the steps in the following topics to configure Avaya™ Interaction Center (Avaya IC) agent applications:

1. [Required privileges and permissions](#) on page 353.
2. [Creating installation files for agent applications](#) on page 355.
3. [Preparing for installation by agents](#) on page 370.
4. [Configuring automatic updates for agent applications](#) on page 376.
5. [Cautions and tips for creating agent accounts](#) on page 379
6. [Creating test agents](#) on page 381.
7. [Configuring agents for Outbound Contact](#) on page 390.
8. [Configuring the Unified Agent Directory](#) on page 393.
9. [Configuring the Citrix integration](#) on page 398.



Important:

Read the Avaya IC Readme file and *IC Installation Planning and Prerequisites* before you begin the agent desktop application installation.

Required privileges and permissions

Avaya IC users require different levels of privileges and permissions for the operating system, depending on the tasks that the users perform.

This section describes the privileges and permissions required for users who perform tasks related to agent desktop applications. Topics include:

- [Required permissions for agents](#) on page 354.
- [Required privileges for agent installer](#) on page 354.

Required permissions for agents

Agents can run Avaya IC agent desktop applications with limited permissions over certain directories on their desktops. Agents do not require administrator privileges.

Windows XP and the NTFS file system have more security control. Windows XP is more restrictive by default.

The following table describes the permissions and allowable restrictions on Avaya IC directories for agent desktop applications.

Directory	Required permissions	Allowable restrictions
<i>IC_INSTALL_DIR</i> \IC61\bin	Modify permissions (also includes Read, Write, Execute)	Delete
<i>IC_INSTALL_DIR</i> \IC61\etc	Modify permissions (also includes Read, Write, Execute)	Delete
<i>IC_INSTALL_DIR</i> \IC61\apps	Modify permissions (also includes Read, Write, Execute)	Delete
<i>IC_INSTALL_DIR</i> \IC61\logs	Modify permissions (also includes Read, Write, Execute)	Delete

Required privileges for agent installer

All Avaya IC users who create agent installers and who install or configure Avaya IC components require the administrator privileges in the following table.

Operating system	Required administrator privileges
Windows	An Administrator login or a login with administrator privileges
Solaris	Sun ONE administrator rights
AIX	IBM http server administrator rights

Creating installation files for agent applications

To create installation files for agent applications, perform the steps in the following topics:

1. [Cautions and tips for installation files](#) on page 355
2. [Required information for the Agent Site Preparation wizard](#) on page 357.
3. [Running the Agent Site Preparation wizard](#) on page 361.
4. [Copying the server implementation file](#) on page 366.
5. [Mapping a virtual directory to a Web server installation directory](#) on page 367.

Cautions and tips for installation files

Before you run the Agent Site Preparation wizard, note the cautions and tips in the following topics:

- [Stopping agent desktop applications](#) on page 355.
- [Installation path for agent desktop applications](#) on page 356.
- [Size of agent installer directory](#) on page 356.
- [Installer directory availability](#) on page 356.
- [Location for Avaya Agent installation](#) on page 356.
- [Size of Avaya Agent installation directory](#) on page 356.
- [IIS Web servers](#) on page 357.
- [Solaris server machine](#) on page 357.
- [Telephone settings for Outbound Contact](#) on page 357.

Stopping agent desktop applications

Before you or an agent runs the Agent Installer on an agent desktop machine, confirm that there are no Avaya IC agent desktop applications or qui.exe processes running on the agent machine. The Agent Installer may stop responding or pause indefinitely if an agent desktop or qui.exe process is still running.

Installation path for agent desktop applications

The agent installer automatically adds the following to the installation path for agent desktop applications: `\apps\<application_name>`

When you specify the initial section for the installation path, do not include any duplication of the directories. If you include a duplicate directory, the `-d` parameter in the shortcut cannot find the working directory for the applications.

For example, if you specify `C:\apps` as the installation path for agent desktop applications, the `-d` parameter cannot locate the `apps` directory, as it is duplicated in the installation path of `C:\apps\Avaya\IC61\apps\interaction_center`

Size of agent installer directory

Select a network share or web location with at least 110MB of available disk space for each agent installer directory.

Installer directory availability

Make sure that each web server or network machine is online when you run the Agent Site Preparation wizard.

Location for Avaya Agent installation

Select the directory path for the Avaya Agent installation on the desk top machines.

Size of Avaya Agent installation directory

Make sure that the agent desktop machines have at least 350 MB of available disk space. Approximately 220 MB of the required available space must be in a `temp` directory. The agent installer deletes the files in the `temp` directory when you reboot the agent machine.

IIS Web servers

If your Avaya IC system uses IIS and you plan to place the agent installer on a Web server, you must create a separate virtual directory in IIS for the agent installer. The agent installer requires different permissions than the virtual directory used by the Avaya IC server applications.

The IIS virtual directory used by the agent installer must have the following properties:

Property	Recommended entry
Alias	AgentInstaller
Directory	Path to the location of the agent installer. For example, C:\Program Files\Avaya\IC613\AgentInstaller
Access Permissions	<p>Check the following boxes:</p> <ul style="list-style-type: none"> ● Read ● Run scripts (such as ASP) <p>Caution: Do not check the following box: Execute (such as ISAPI applications or CGI).</p>

After you create the IIS virtual directory, review the Properties of the directory and confirm that the value of the **Execute Permissions** field is **Scripts only** (not Scripts and Executables).

Solaris server machine

If you plan to host agent installer on a Solaris machine, run the Agent Site Preparation wizard on a Windows machine, then transfer the files to the Solaris machine.

Telephone settings for Outbound Contact

Configure the telephone to auto-answer for all agents who will work with Outbound Contact in predictive mode.

Required information for the Agent Site Preparation wizard

Before you complete the required information, you must know how many different agent configurations your contact center requires. If you must create multiple agent configurations, you must run the Agent Site Preparation wizard for each configuration.

You must plan your agent desktop configuration before you run the Agent Site Preparation wizard. The tables in each section provide examples of the kind of planning and information that you must complete before you run the Agent Site Preparation wizard. You

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can fill out your configuration information in these tables, or create similar tables of your own.

This section includes the following topics:

- [Path for agent installers](#) on page 358.
- [Directory on agent desktop](#) on page 358.
- [Applications to be installed](#) on page 359.
- [Switch type](#) on page 360.
- [Automatic updates](#) on page 360.
- [Automatic reboot](#) on page 360.

Path for agent installers

The directory path for the folder where you place the agent installer and configuration data for each agent configuration.

The default directory is: C:\Program Files\Avaya\IC61\AgentInstaller. You can copy the installation files to another location, such as a Web server, after you create the agent installer. If you intend to make the Agent Installer available on a Web server, create a virtual directory that points to the installation directory for each agent configuration.

Agent Configuration	Path to Installer

Directory on agent desktop

The name and directory path for the agent configuration on each agent desktop. Use a drive and directory that is valid on all agent desktop machines. The agent installer will present this directory to all agents during the installation. If desired, you can let agents override the default installation directory and select their own installation directory.

For example, the default directory and path for installing agent desktop applications is:
 C:\Program Files\Avaya\IC61\

Agent Configuration	Directory Path	Override?

Applications to be installed

The agent applications that you plan to include in each agent configuration. With a single configuration, check the desired applications in the following table. With multiple configurations, write the name of each configuration group that uses an application. For more information about the applications that are available for agent desktops, see *IC Installation Planning and Prerequisites*.

Agent Applications	Agent Configurations
Contact-based CallCenterQ	
Contact-based CallCenterQ for Consumer Relations	
Request-based CallCenterQ	
Request-based CallCenterQ for Consumer Relations	
CustomerQ	
HRQ	
Report Wizard	

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Agent Applications	Agent Configurations
ListQ	
Custom application, such as Siebel Report Wizard	

Switch type

If your Avaya IC system includes Telephony, you must know the type of telephony switch used in your contact center.

Automatic updates

Update agent configurations to the latest version whenever agents log in. For more information, see [Configuring automatic updates for agent applications](#) on page 376.

Agent Configuration	Automatic Updates?

Automatic reboot

Whether the agent desktop machine will automatically reboot when the installation is complete.

Agent Configuration	Automatic Reboot?

Agent Configuration	Automatic Reboot?

Running the Agent Site Preparation wizard

Repeat this entire procedure for each agent configuration that you must create.

CAUTION:

The InstallShield application used for the Agent Site Preparation Wizard fails if you use the **Back** button when you select whether to use the Web server or network drive installation. If the Agent Site Preparation Wizard fails, delete all InstallShield temporary files from the %TEMP% directory and re-run the Agent Site Preparation Wizard.

By default, the Agent Site Preparation Wizard places the agent installer in a directory path that includes *IC613* to ensure that you do not overwrite an IC 6.1 version of the agent installer. The default directory path is **C:\Program Files\Avaya\IC613\AgentInstaller**.

By default, the agent installer places the agent desktop applications in a directory path that includes IC 6.1, to ensure that the agent applications are correctly updated.

To run the Agent Site Preparation Wizard:

1. Log in to the machine as an Administrator or user with administrator privileges and insert the Avaya Interaction Center 6.1.3 CD-ROM.
2. Select **Agent Site Preparation Wizard**.
3. In the **Welcome** window, select **Next**.
4. In the **Avaya Agent Installation Area** window, accept the default or type the path to the directory where you want to install the agent installer files. Select **Next**.

The default directory is: C:\Program Files\Avaya\IC613\AgentInstaller. If you do not want to use the default directory and do not know the path to the correct directory, select **Browse** and navigate to the desired location. If the directory is on a network drive, you must map that directory on the current machine.

5. In the **Avaya Agent Installation Folder** window, accept the default, or type the directory where the agent installer installs the application files on each agent desktop. Select **Next**.

The default directory and path is: C:\Program Files\Avaya\. To use a different directory, select **Browse** and navigate to the desired location.

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Note:

Do not use `apps` in the installation path for agent desktop applications. If you do, the `-d` parameter cannot locate the `apps` directory and start the application.

6. In the **Installation Folder Override** window, shown in the following figure:

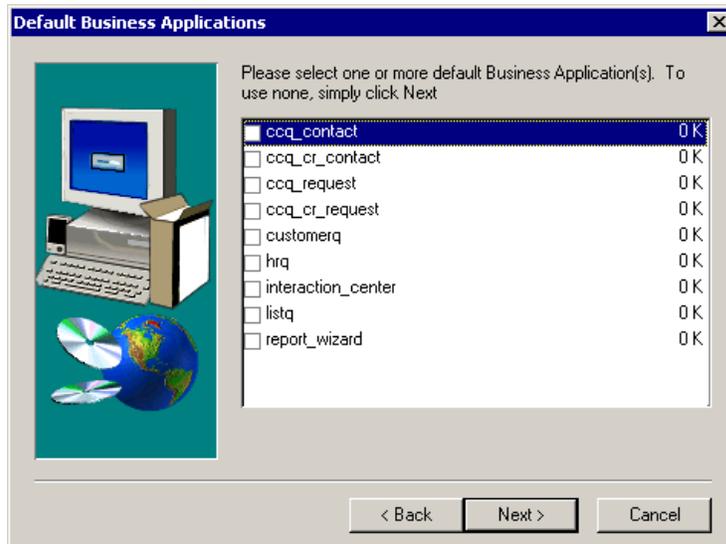
a. Select one of the options in the following table:

Option	Purpose
Yes, allow agents to choose an alternate folder	To allow agents in this configuration to choose an alternate folder in which to install the agent application files.
No, always use the pre-defined folder	To ensure that you know where agents in this configuration install their agent application files.

b. Select **Next**.



7. Select the agent desktop applications required by agents who use this configuration in the **Default Business Applications** window, shown in the following figure. Select **Next**.



8. In the **Custom Business Applications** dialog box, select one of the buttons in the following table:

Button	Purpose
Yes	To add a custom Business Application.
No	To proceed to the next step without adding a custom Business Application.

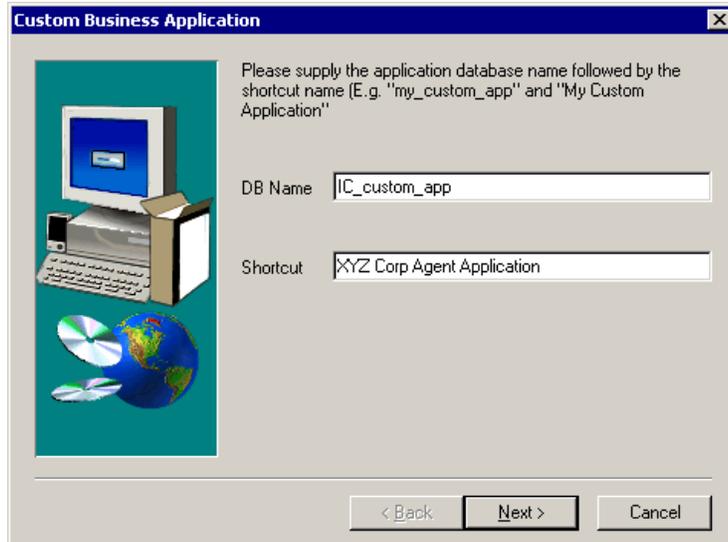
9. In the Custom Business Applications screen, shown in the following figure, if you chose to include a custom Business Application in your agent installer:
- a. Complete the fields as shown in the following table:

Field	Recommended entry
DB Name	Type the name of the database that you created for your custom application.
Shortcut	Type the name to give to the shortcut in the Start menu on the agent desktop machine.

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b. Select **Next**.

The Site Preparation wizard allows you to select another custom Business Application. If you must include a second custom Business Application, repeat steps 8 and 9.



10. Select the type of phone switch to use with Avaya Agent in the **Phone Switch** window, shown in the following figure.

If this configuration does not include Telephony, select **None**.



11. In the **Avaya Agent Automatic Update** window, shown in the following figure:

a. Select one of the options in the following table:

Option	Purpose
Yes, allow Avaya Agent to perform updates automatically	To have Avaya Agent automatically check for and apply updates each time an agent logs in.
No, updates will be done manually	To require agents to apply updates manually when you notify them that an update is available.

b. Select **Next**.



12. In the **Query Reboot** window:

a. Select one of the options in the following table:

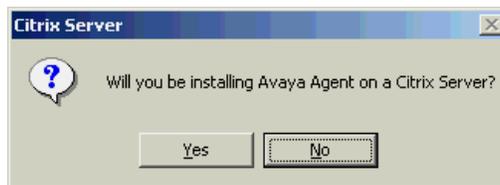
Option	Purpose
Yes, offer the agent the choice to reboot now or later	To allow an agent to choose to continue with the previous configuration and install the update at a later time.
No, reboot after informing the agent that a reboot will occur	To force a reboot and install the update immediately.

b. Select **Next**.

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13. In the **Citrix Server** window, shown in the following figure, select one of the options in the following table.

Option	Purpose
Yes	If the Avaya IC agent desktop applications will be hosted on a Citrix server.
No	If the Avaya IC agent desktop applications will be hosted on an agent workstation.



The Agent Site Preparation Wizard creates the agent installer.

14. Select **Finish** in the **Site Prep Wizard Complete** window to complete the installation.

Copying the server implementation file

The agent installer requires access to the `vesp.imp` server implementation file from the machine that hosts the primary ORB server. You must copy this file to a location where the agent installer has access.

To copy the server implementation file.

1. Navigate to the following directory where the `vesp.imp` file is located:

```
IC_INSTALL_DIR\IC61\etc
```

2. Copy the `vesp.imp` file to the following directory on the machine that hosts the agent installer:

```
IC_INSTALL_DIR\IC61\AgentInstaller\config
```

Note:

Do not copy the `vesp.imp` file to the `IC_INSTALL_DIR\IC61\bin` directory. The `vesp.imp` file cannot function properly from this directory.

Mapping a virtual directory to a Web server installation directory

If you selected a location on a web server in the Agent Site Preparation wizard, you must map a virtual directory for each agent installer directory.

To map the virtual directory to an agent installer directory, complete the steps in one of the following topics, depending on which operating system and Web server you use in your Avaya IC system:

- [Mapping a virtual directory to an agent installer directory on Windows](#) on page 367
- [Mapping a virtual directory to an agent installer directory on Solaris](#) on page 368
- [Mapping a virtual directory to an agent installer directory on AIX](#) on page 369.

Mapping a virtual directory to an agent installer directory on Windows

Repeat these instructions for each Web site agent installer that you create with the Agent Site Preparation wizard.

To map a virtual directory to an agent installer directory on Windows:

1. In IIS Internet Service Manager, select a Web site, such as Default Web Site.
2. Right-click on the Web site and select **New > Virtual Directory**.
3. Complete the Virtual Directory Creation wizard, as shown in the following table:

Field	Recommended entry	Description
Alias	Type a name for the virtual directory.	Use the same naming convention as for directories. For example, AgentInstaller.
Directory path	Type or navigate to the directory where the Agent Site Preparation wizard placed the agent installer.	The default directory is: C:\Program Files\Avaya\IC61\AgentInstaller
Permissions	Check the desired access permissions for the virtual directory.	CAUTION: Do not give Execute permissions. If an agent exercises Execute permission, the executable runs on the server, cannot connect to the client machine, and can cause serious resource problems.

4. Repeat these instructions for each Web site agent installer you created with the Agent Site Preparation wizard.

Mapping a virtual directory to an agent installer directory on Solaris

If you selected a location on a web server in the Agent Site Preparation wizard, you must map a virtual directory for each agent installer directory. A sample virtual directory entry has been provided in a commented-out line in the `obj.conf` file of your Web server.

Repeat these instructions for each Web site agent installer that you create with the Agent Site Preparation wizard.

To create more than one virtual directory on the same web server, duplicate the virtual directory stanza in the `obj.conf` file and update with that information.

You can use Sun ONE's administrative interface to create this virtual directory. However, check your `obj.conf` file to make sure the virtual directory has a similar format to the example virtual directory.

Important:

The Configuration Tool overwrites the contents of the `obj.conf` file. If you host the agent installer on an Avaya IC Website, you must reconfigure `obj.conf` every time you run the Configuration Tool.

To map a virtual directory to an agent installer directory on Solaris:

1. Open the following file:

```
<Sun_ONE_install_dir>/servers/https-<server_name>/config  
/obj.conf
```

Note:

To create more than one virtual directory on the same Web server, duplicate the virtual directory section in the `obj.conf` file and update the duplicate stanza with the information below.

2. Scroll down to the following line:

```
#AgentGuard#NameTrans fn="pfx2dir" from="/AgentInstaller"  
dir="IC_INSTALL_DIR/IC613/AgentInstaller" name="send_exe"
```

3. Make the following changes to that line:

- a. Delete `#AgentGuard#`
- b. Replace `/AgentInstaller` with the name of the virtual directory that you specified in the Agent Site Preparation wizard.
- c. Replace `IC_INSTALL_DIR/IC613/AgentInstaller` with the correct path to the agent installer files.

4. Check the desired access permissions for the virtual directory.

⚠ CAUTION:

Do not give Execute permissions. If an agent exercises Execute permission, the executable runs on the server, cannot connect to the client machine, and can cause serious resource problems.

5. If desired, perform one of the steps in the following table to restrict access to the agent installer:

Access Restriction	Steps
Restrict access by IP	To restrict access by IP: <ol style="list-style-type: none"> 1. Remove #AgentGuard# from the following: <ul style="list-style-type: none"> - #AgentGuard#<Client ip="your_host_ip_range"> - #AgentGuard#</Client> 2. Replace your_host_ip_range with the desired IP range.
Restrict access by domain	To restrict access by domain: <ol style="list-style-type: none"> 1. Remove #AgentGuard# from the following: <ul style="list-style-type: none"> - #AgentGuard#<Client dns="*.your_domain"> - #AgentGuard#</Client> 2. Replace *.your_domain with the desired domain.

6. Save and close the `obj.conf` file.

Mapping a virtual directory to an agent installer directory on AIX

If you selected a location on a Web server on an AIX machine, map a virtual directory for each agent installer directory. The `obj.conf` file includes an entry for a sample virtual directory.

Repeat these instructions for each Web site agent installer that you create with the Agent Site Preparation wizard.

To map a virtual directory to an agent installer directory on AIX:

1. In a text editor, such as Notepad, open
`IC_INSTALL_DIR/IC61/etc/ictomcat.cfg`
2. Scroll down to the following lines


```
#Begin Agent installer configuration
# Uncomment the following lines and add the IP address of the
```

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```
client machines -
# in allow list to grant access to the AgentInstaller download
#Alias /AgentInstaller "%AVAYA_IC_HOME%/AgentInstaller
#<Location /AgentInstaller>
#   order deny,allow
#   deny from all
#   allow from IPADDRESS1 IPADDRESS2
#</Location>
#End Agent installer configuration
```

3. Uncomment the 6 lines from the following sections:

- Alias
- <Location</Location>

4. Replace the following entries with the IP addresses of the client machines that you want to have access to the agent installer on the Web server:

- IPADDRESS1
- IPADDRESS2

To add additional IP addresses or the fully-qualified domain names of the client machines, separate the entries with spaces. You can use wildcards in the entries.

5. Save and close the `ictomcat.cfg` file.

Preparing for installation by agents

As you complete these procedures, refer to the following table for the directories and files in the Avaya Agent installer directory.

Directory	Contents
<code><agent_installdir>\config</code>	This directory contains the files that agents install to update Avaya Agent.
<code><agent_installdir>\update</code>	This directory contains updates that you make available to the agent applications.

Directory	Contents
<agent_installdir>\default.htm	If you store the installation files on a Web site, this file is the Web page that an agent sees. You can modify this file to add custom notes and instructions for your agents. By default, this page contains only a link to the AgentInstaller.exe file.
<agent_installdir>\AgentInstaller.exe	The executable that runs the installation of an agent configuration on the machine of any agent who clicks on the mapped URL.

To prepare an agent installer for installation by agents, perform the steps in the following topics:

1. [Testing the agent installer](#) on page 371.
2. [Creating installation instructions for agents](#) on page 375.
3. [Configuring automatic updates for agent applications](#) on page 376.

Testing the agent installer

You must test the agent installer to make sure that:

- The agent installer works properly.
- The correct installation options are available for agents when they install the agent configuration.
- The agents can access the agent installer through a shared network drive.

Note:

Before you install Avaya IC agent applications, configure all agent workstations with restore points. The agent installer replaces some system files during the installation. If software conflicts arise, restore points allow easy rollback after you uninstall Avaya IC. See the Windows documentation or third-party guides for procedures on enabling such functionality.

To test the installation, perform the steps in the following topics, according to where you placed the agent installer:

- [Testing the agent installer from a network drive](#) on page 372
- [Testing the agent installer from a Web server](#) on page 374

Testing the agent installer from a network drive

If you placed the agent installer on a shared network drive, you can have agents copy the folders to their machines, or run the agent installer across the network.

If the agents will run the agent installer across the network, they must be able to access the shared network drive from their machines. Agents cannot use the **Run** dialog box on the **Start** menu to run the agent installer.

 **Important:**

The **Back** button can cause unpredictable results. If you use the **Back** button and the agent installer adds garbage characters to the fields in the window, delete those characters and re-type the correct information.

To test the agent installer from a network drive:

1. Close down all Windows applications.
2. Use Windows Explorer to navigate to the folder, then double-click `AgentInstaller.exe`.

The agent installer verifies the agent's operating system and browser. If the computer is missing the required version of either, the installation terminates with a warning to the agent. If the supported operating system includes a service pack that is later than the service pack certified by Avaya, the agent installer issues a warning and asks if you would like to continue.

The agent installer also checks whether the computer already has Avaya IC agent applications installed. If Avaya IC files already exist, the agent installer warns you.

The agent installer extracts the files, then starts the installation.

3. In the **Select Access Method** window, shown in the following figure:
 - a. Select **Network Share**.
 - b. Select **Next**.



4. Type the path to the directory where you placed the agent installer in the **Agent Installation Network Location** window. Select **Next**.

If you do not know the location of the agent installer, select **Browse** to navigate to the directory.
5. If the agent configuration allows the agent to override the default installation folder, accept the default location in the **Agent Installation Folder** window or browse to an alternate location. Select **Next**.

The agent installer installs the agent desktop applications on the target machine.
6. After the installation completes, the agent installer prompts you to either:
 - Choose whether to reboot the machine now, then select **Finish**.
 - Select **OK** in a window that states that the machine is about to restart.After the machine reboots, the installer registers all necessary DLLs and OCXs.

Testing the agent installer from a Web server

CAUTION:

Do not run the agent installer across the network from a Web server. The installer does not function correctly across the network.

The **Back** button can cause unpredictable results. If you use the **Back** button and the agent installer adds garbage characters to the fields in the window, delete those characters and re-type the correct information.

To test the agent installer from a web server:

1. Close down all Windows applications.
2. Start the agent installer:
 - a. Use an internet browser to navigate to the following URL:

```
http://<machine_name>.<domain_name>/<Agent_Installer_Virtual_Directory>/default.htm
```
 - b. When the default page opens, select **Install Avaya Agent**.
 - c. Select **Save to file** and save the agent installer to the agent desktop.
 - d. After the agent installer downloads to the desktop, select **Open** to run the agent installer.

The agent installer verifies the agent's operating system and browser. If the computer is missing the required version of either, the installation terminates with a warning to the agent. If the supported operating system includes a service pack that is later than the service pack certified by Avaya, the agent installer issues a warning and asks if you would like to continue.

The agent installer also checks whether the computer already has Avaya IC agent applications installed. If Avaya IC files already exist, the agent installer warns you.

3. If you see a **Security Warning** window that asks if you want to install and run **Agent.exe**, select **Yes**.

The agent installer extracts the files, then starts the installation.

If the Installation Folder Override was enabled during the running of the Agent Site Preparation wizard, the Avaya Agent Installation Folder screen is displayed.

4. In the **Select Access Method** window, shown in the following figure:
 - a. Select **Web Server**.
 - b. Select **Next**.
5. Type the URL to the web server where you placed the agent installer in the **Agent Installer Web Address** window. Select **Next**.

6. If the agent configuration allows the agent to override the default installation folder, accept the default location in the **Agent Installation Folder** window or browse to an alternate location. Select **Next**.

The agent installer installs the agent desktop applications on the target machine.

7. After the installation completes, the agent installer prompts you to either:

- Choose whether to reboot the machine now, then select **Finish**.
- Select **OK** in a window that states that the machine is about to restart.

After the machine reboots, the installer registers all necessary DLLs and OCXs.

Creating installation instructions for agents

Follow these steps to send the URL or directory path and other instructions to all agents who must install a specific agent configuration.

To send instructions to your agents:

1. Create instructions for agents that include the following:
 - URL to the web server directory or directory path to the network drive
 - Instructions to close all applications before starting the installation
 - Instructions not to use the **Back** button in the agent installer, as the **Back** button can cause unpredictable results
 - Instructions to delete garbage characters from fields, if Back button used, and re-type the correct information
 - Any other special instructions, such as whether they can select their own installation directory or can choose to reboot the machine at a later time
 - The name of a person to contact if they have problems
2. If you placed the agent installer on a web server, you can customize `default.htm` in an HTML Editor or a text editor, such as Notepad, with any information or instructions you want to provide to the agents. You can find `default.htm` in the Agent Installer virtual directory.
3. If you are installing the localized version of Avaya IC, you must include instructions for the agents to apply the language packs. You can install the language packs through an automatic update. For more information, see [Configuring automatic updates for agent applications](#) on page 376.

Configuring automatic updates for agent applications

Avaya IC allows you to make different types of updates to agent desktop applications. If you enable more than one type of update, Avaya IC applies the updates in the following order:

Language pack updates - Install updated language packs for all supported languages

Service pack updates - Install updated application files on the agent desktop

Point patch updates - Install patch updates to the application files

Note:

For any type of automatic update to work correctly, the agents must have Read access to the `version.html` file and to the updates. For example, if you install the language pack update on a network server, each agent that logs in must have Read permissions for the directory.

If you enabled Automatic Updates in the Agent Site Preparation wizard:

1. When an agent logs in, Avaya IC reads the `version.html` file from `<agent_installdir>\config`.
2. Avaya IC compares the values for the following fields against the values in the agent machine's registry at `HKLM\Software\Avaya\IC\6.1\Agent`:
 - `majorversion`
 - `minorversion`
 - `patchversion`
 - `servicepackversion`
 - `languagepackversion`
3. If the following is true, then Avaya IC invokes the automatic updates:
 - Value of `icagent` in the `version.html` file is "1"
 - Values for `majorversion` and `minorversion` in the downloaded `version.html` file on the agent machine match the values in the agent registry
 - Values for `patchversion`, `servicepackversion`, or `languagepackversion` are greater than the values in the agent registry
4. When the automatic update is invoked:
 - a. A message is displayed to the agent.
 - b. The agent application exits.
 - c. Avaya IC updates the agent applications on the agent desktop.

Updating the version.html file

You must update the `version.html` file in the agent installer directory with new values to invoke automatic updates of the agent applications. The `version.html` file contains the following fields. You can update the highlighted section.

```
<versioninfo>
  <remote>
    <client>
      <icagent enabled="1" majorversion="6" minorversion="0" patchversion="0"
        patchpath="%VALUE%" servicepackversion="0" servicepackpath="%VALUE%"
        languagepackversion="0" languagepackpath="%VALUE%"/>
    </client>
    <server>
    </server>
  </remote>
  <local>
    <client>
      <icagent regkeyname="Agent"/>
    </client>
    <server>
    </server>
  </local>
</versioninfo>
```

To update the `version.html` file:

1. Open the `version.html` file in a text editor.
2. In the `version.html` file, increase the value of one or more of the fields as shown in the following table by one. For example, if the value of a field is currently 1, increase the value to 2.

Field	Purpose
languagepackversion	Increase the value of this field for a language pack update.
servicepackversion	Increase the value of this field for a service pack update.
patchversion	Increase the value of this field for a patch update.

Do not change the `majorversion` and `minorversion` values unless specifically instructed.

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3. In the `version.html` file, type the location of the agent installer files in one or more of the following fields. The shared network directory or Web site must be available from the agent desktop.

Field	Purpose
<code>languagepackpath</code>	Type the location in this field for a language pack update.
<code>servicepackversion</code>	Type the location in this field for a service pack update.
<code>patchversion</code>	Type the location in this field for a patch update.

Avaya IC checks this field before it downloads the files from that location. If the URL or network directory is not valid, an error message is displayed to the agent. After the agent selects **OK**, the agent applications are launched without being updated.

4. Save the `version.html` file.
5. Repeat these steps for every Avaya Agent configuration.

Temporarily disabling automatic updates

In some cases, you may want to disable your Automatic Update option temporarily and allow agents to log in without waiting for the Automatic Update to complete.

To disable Automatic Updates:

1. Open the `version.html` file in the `<agent_installdir>\config` directory.
2. Change the value of the `icagent enabled` field to 0.
3. Save the file.

Cautions and tips for creating agent accounts

You must create an account in IC Manager for all agents, supervisors, and other Avaya IC users. Each agent and other user account requires that you configure permissions, media channels, and other requirements for the account.

This manual contains only the information that you require to create agent and other user accounts for testing, including the minimal permissions and configuration settings. For more detailed information, see *IC Administration Volume 2: Agents, Customers, & Queues*.

This section includes some important cautions and tips that you need to consider when you create agents for your Avaya IC system. Before you plan the tenants, workgroups, and agents that you need for your production system, carefully review the information in *IC Administration Volume 2: Agents, Customers, & Queues*.

This section includes the following topics:

- [Systems with Business Advocate and Outbound Contact](#) on page 379.
- [Agent domains](#) on page 379.
- [Agent workgroups and tenants](#) on page 380.
- [Agent login IDs](#) on page 380.

Systems with Business Advocate and Outbound Contact

If your Avaya IC system includes agents that use Business Advocate and Outbound Contact, each of those agents must have a separate login for Business Advocate and for Outbound Contact. The agent cannot use both components simultaneously.

Agent domains

All Avaya IC agent accounts must belong to a User domain. You must create all User domains before you create your agents. If you create agents first, you must assign all agents to the Default domain, and then create the User domains and reassign the agents.

If your User domain does not include a secondary ORB server, the domain must failover to a domain that includes an ORB server, such as the Default domain.

Agent workgroups and tenants

Avaya strongly recommends that you organize your agent population into sets of tenants and workgroups that mirror the organization of your contact center. A tenant is a set of workgroups that fulfill a particular business function. You can use tenants to define the security and administrative boundaries around data, queues, and content resources. A workgroup is a set of agents or queues that form a logical grouping.

A workgroup can only belong to one tenant. However, you can share agents across tenants by assigning them to multiple workgroups. If you use workgroups, you must create workgroups and tenants before you create agents.

Tenants, workgroups, and agents inherit properties from parent to child entities. By default, if you assign a property value to a tenant, the workgroups in that tenant inherit that property value from the tenant, and the agents in the workgroups inherit the property value from the workgroups. When you assign agents to workgroups, and workgroups to agents, you can specify the order of inheritance. The inheritance order controls which property value IC Manager uses for an agent if an entity inherits multiple values for the same property.

Agent login IDs

Each agent must have a separate and unique login ID.

To monitor multiple devices, the agent or supervisor can login to more than one workstation simultaneously. However, Avaya does not recommend simultaneous logins with the same login ID. Avaya recommends that the agent or supervisor uses a separate login ID for each machine.

 **Important:**

Simultaneous logins with the same login ID can impact migration scripts.

Avaya IC does not recommend:

- Two agents logging in with the same login ID.
- One agent simultaneously logging in to more than one machine with the same login ID.

Creating test agents

You must create at least one test agent account to make sure that your Avaya IC system handles tasks correctly. This test agent account should be in the User domain. Your Avaya IC system includes a preconfigured User1 domain.

Add a test agent to each User domain, and configure the agent to handle the media channels in the Avaya IC system.

Agents can belong to multiple workgroups. However, all agents who work in Web Management and Email Management must have the Default workgroup as their primary workgroup.

The procedures in this section contain information on how to set basic properties for agent accounts, so you can test your system. If you want to set additional properties for your test agents, see *IC Administration Volume 2: Agents, Customers, & Queues*.

To create a test agent, perform the tasks in the following topics:

1. [Creating a test agent account](#) on page 381.
2. [Configuring the media channels for a test agent](#) on page 383.
3. [Setting properties for a test agent](#) on page 386.

Creating a test agent account

To create a test agent account:

1. In IC Manager, select the **Agent** tab.
2. Expand the **DefaultTenant** node in the left pane.
3. Select **Agent > New**.
4. Select the **General** tab and complete the fields as shown in the following table:

Field	Description
First Name	Required field Type agent's first name.
Last Name	Required field Type agent's last name.
Preferred Name	Required field Type agent's preferred name.
Employee ID	Type the agent's company employee ID (if available).

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Field	Description
Domain	Required field Select domain for the agent from the list. Note: If the agent will handle chat contacts, the agent domain must failover to the domain that includes the Paging server.
Site	Select a site from the drop-down list. Note: Avaya IC uses the Site to compile statistics for groups or agents or queues.

5. In the **System Information** group of the **General** tab, complete the fields as shown in the following table:

Field	Description
Login ID	Required field Type a login ID that the agent uses for all Avaya IC applications. Each agent account must have a separate and unique login ID. For more information, see Agent login IDs on page 380.
Options	<ol style="list-style-type: none"> 1. Select the Ellipsis (...) button next to Options. 2. Check the User Addressable box to make the agents visible for transfers. 3. Select OK.
Task Load	Required field Set this field to no more than 6 concurrent tasks. Use the arrow keys to set the maximum number of contacts that the agent can handle concurrently. These contacts can come from any of the media channels used by the agent. For example, if you plan to configure the test agent to use Email and Voice media channels, and to set the task load on Email to 2 and the task load on Voice to 1, set this Task Load property to 3.
Task Ceiling	Required field. Use the arrow keys to set the limit of the task load across all of the media channels. The task load must be less than or equal to the task ceiling. Note: The Task Load can vary according to your system conditions, such as number of tasks, agents, or time of day. The Task Ceiling is an upper limit on the Task Load.

6. In the **Membership Information** group of the **General** tab, complete the fields as shown in the following table:

Field	Recommended entry
Domain	Required field Select your User domain from the drop-down list.
Workgroup	<ol style="list-style-type: none"> 1. Select the Ellipsis (...) button next to Workgroup. 2. Expand the DefaultTenant node in the Workgroups list. 3. Select the Default workgroup. 4. Select >> to add the agent to the Default workgroup. 5. Select OK.
Site	Select a site from the drop-down list. Note: Avaya IC uses the Site to compile statistics for groups or agents or queues.

Tip:

If you want this agent to be a Supervisor who can monitor chats between other agents and customers, configure this agent as the Supervisor for the Workgroup.

7. Select the **Security** tab and complete the fields as shown in the following table to set agent security:

Field	Recommended entry
Password	Type the password that the agent uses to log in to Avaya IC applications. For example, type agent1.
Confirm	Type the password a second time to confirm.
Roles	Check one or more boxes to select the agent's security level.

8. Select **OK**.

Configuring the media channels for a test agent

When you set Task Load and Task Ceiling for the media channels, make sure that:

- The total of all Task Load values does not exceed the Task Load that you set for the agent on the **General** tab
- The total of all Task Ceiling values does not exceed the Task Ceiling set on the **General** tab

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This step continues from the previous step and assumes that the agent account remains open in IC Manager.

To configure the media channels for a test agent:

1. Select the **Channels** tab.
2. To enable the agent to receive chat contacts and voice chat contacts:
 - a. Select **Chat** from the **Channel** drop-down list.
 - b. Complete the fields as shown in the following table:

Field	Recommended entry
Disable Chat Channel	Clear this box.
Task Load	Set the maximum number of chat contacts an agent can handle at one time.
Task Ceiling	Set the maximum value for the chat Task Load.

- c. Select **Apply**.
 3. To enable the agent to receive email contacts:
 - a. Select **Email** from the **Channel** drop-down list.
 - b. Complete the fields as shown in the following table:

Field	Recommended entry
Disable Email Channel	Clear this box.
Show Full Headers	Check this box if you want the agent to see the full header of each email contact.
From Address	Type the email address that you want recipients to see in emails from this agent.
Task Load	Set the maximum number of email contacts an agent can handle at one time.
Task Ceiling	Set the maximum value for the email Task Load.

- c. Select **Apply**.

4. To enable the agent to receive voice contacts, send outbound voice contacts, or receive voice chat contacts:
 - a. Select **Voice** from the **Channel** drop-down list.
 - b. Complete the fields as shown in the following table:

Field	Recommended entry
Disable Voice Channel	Clear this box.
Phone ID	Type the logical extension number for the agent's phone. For example, type 34181.
Password	Type the password for agent login to the ACD.
Phone Type	Type the type of phone that the agent uses. The switch requirement for agent login determines the phone type. Some supported switches support both phone types. Other supported switches only support one phone type. <ul style="list-style-type: none"> ● Type EAS if the configuration controls the queue structure. You can only type EAS for Avaya DEFINITY/Communication Manager, or Aspect. ● Type ACD if the switch requires a queue. You can type ACD for all supported switches.
Equipment	Type the physical extension number for the agent's phone. For example, type 24181.
Queue	Type the default voice queue for this agent.
Task Load	Set the maximum number of voice contacts an agent can handle at one time.
Task Ceiling	Set the maximum value for the voice Task Load.

- c. Select **Apply**.
5. Select the **General** tab.

Configuring agent applications

6. Select the **Email** tab in the center of the **General** tab.
 - a. Complete the fields as shown in the following table:

Field	Recommended entry
Primary	Type the email address assigned to the agent by the contact center. This address is configured at the mail server. If you specify that the agent is user addressable on the System tab, Avaya IC lists this email address for the agent in the Agent Directory.
Internal	Type the email address assigned to the agent for internal email messages only. This address is not intended to be used outside of the contact center.
Personal	Type the email address assigned to the agent for personal, non-business communication from the agent.
Mobile Device	Type the email address assigned to the agent for use with their mobile device.

7. Select **OK**.

Setting properties for a test agent

You must configure a minimum number of agent properties for your test agents to ensure that the agent applications function correctly. For information about the remaining agent properties or how to enable other features, see *IC Administration Volume 2: Agents, Customers, & Queues*.

If you want your agent desktop applications to include wrapup functionality, configure agents for wrapup and create reason codes. For more information, see *IC Administration Volume 2: Agents, Customers, & Queues*.

To prevent access to Avaya IC by unauthorized users, agents are assigned passwords that are required when they log into Avaya IC.

Tip:

Password requirements (such as the required length and duration) are controlled by the properties in the Agent/Security section. For information about these properties, see [Agent/Security](#) on page 388.

Set the properties in the following table for your test agents. Follow the steps in the following topics to apply these properties to agents:

- [Setting global properties for all agents](#) on page 389
- [Setting properties for individual agents](#) on page 389

For information about properties for Outbound Contact, see [Configuring agents for Outbound Contact](#) on page 390.

Section	Property	Recommended entry	Notes
Agent	UILanguage	Select a language code from the drop-down list.	Specifies the language in which the agent desktop displays the interface of the agent application. For more information, see Setting language properties for agents on page 551.
Agent/Desktop	ScreenPopEnabled	Yes	Allows agents to receive screen pops.
	WrapupEnabled	Yes	Allows agents to wrapup contacts.
	Layout	Leave blank if you do not want this agent to use Avaya Agent. Default layout is <code>avaya_agent_en</code>	Specifies the Avaya Agent layout. If your Avaya IC system includes a customized Avaya Agent layout, type the name of that layout. If you type a layout here, you must include an Avaya Agent with all agent applications used by this agent, including Report Wizard. Note: Do not include the <code>.cdl</code> extension.
Agent/Desktop/Directory	ShowAgentsOnStartup	Yes	Adds agents to the Unified Agent Directory
Agent/Desktop/ScreenPop	PopOnAllArrivingContacts	Yes	
	PopOnContactActivation	Yes	

Configuring agent applications

Section	Property	Recommended entry	Notes
Agent/Desktop/Prompter	WrapupFlowset	prompter	The name of the flow set that includes the Prompter wrapup workflow. For example, the name of the sample Prompter flow set is <code>prompter</code> .
	WrapupFlow	wrapup	The name of the wrapup workflow. For example, the name of the sample Prompter workflow is <code>sample_wrapup</code> .
Agent/Desktop/WrapupDialog	DefaultCategoryGroup	CategoryGroup1	
	DefaultTenant	DefaultTenant	
Agent/Desktop/WAC	HomeDir	Installation directory for the agent.	Ensures that the Web Agent is visible in the agent desktop. Required for the chat and email channels.
Agent/Security	PasswordChangeDuration	30	The maximum number of days during which an agent can use his or her password. After this limit is exceeded, Avaya IC forces the agent to change their password the next time that they log in. To let agents keep the same password all the time, set this property to 0 (zero). Note: By default, Avaya IC does not track what passwords an agent has used in the past. Therefore agents can reuse passwords as desired.

Setting global properties for all agents

To set global properties that affect all test agents in Avaya IC:

1. In IC Manager, select **Tools > Groups**.
2. Select the **Properties** tab.
3. Select the IC node in the left pane.
4. In the **Sections** list, select the desired property section.
If this property section does not exist, select **Add Property** and select that property from the **Assign Property** dialog box.
5. In the **Edit Property** dialog box, select the setting that you require for this property.
6. Select **Apply**.
7. Select **OK**.

Setting properties for individual agents

To set properties for individual test agents:

1. In IC Manager, select the **Agent** tab.
2. Double-click the agent in the list of agents.
3. Select the **Properties** tab.
4. In the **Sections** list, select the desired property section.
If this property section does not exist, select **Add Property** and select that property from the **Assign Property** dialog box.
5. In the **Edit Property** or **Assign Property** dialog box, complete the following fields:
 - a. From the **Property** drop-down list, select the desired property.
 - b. From the **Property Value** drop-down list, select the desired value.
 - c. Select **OK**.
6. Select **Apply**.
7. Select **OK**.

Configuring agents for Outbound Contact

You must perform the steps in the following topics for each agent that works on Outbound Contact.

Perform the following steps to configure agents for Outbound Contact:

1. [Defining agent skills for Outbound Contact](#) on page 390.
2. [Creating properties for Web scheduled calls](#) on page 391.
3. [Adding Outbound Contact properties for agents](#) on page 392.

Defining agent skills for Outbound Contact

Outbound Contact uses the agent skills to:

- Match an agent to outbound jobs
- Specify an agent's dialing mode

When an agent logs in, the agent can only see jobs that match the agent's skills. If you want an agent to join a job, you must assign the required skills to the agent in IC Manager.

To define outbound skills:

1. In IC Manager, select the **Agent** tab.
2. Select **Tools > Skills**.
3. Confirm whether the Skills list includes the following outbound skills:
 - Auto
 - Predictive
 - Preview

If the skills do not exist, repeat the following steps to add each skill:

4. Select **New**.
5. Type **Outbound** in the **Add to Skills** field.
6. Select **Outbound**.
7. Select **New** to add the following skills in the **Add to Outbound Skills** field.
 - Auto
 - Predictive
 - Preview
8. Select **OK**.

Creating properties for Web scheduled calls

If your Avaya IC system includes Web Scheduled Calls, you must configure Outbound Contact for that feature.

To create properties for Web Scheduled Calls:

1. In IC Manager, select **Tools > Property Declarations**.
2. Double-click **System/Configuration** in the **Property Section** list in the **Property Declarations** dialog box.
3. Select each Web Scheduled Call property and set the values in the following table:

Property	Tab	Name
WebServerPort	Settings	Check the following boxes under Applicable Property Levels : <ul style="list-style-type: none"> ● IC (Root node) ● Workgroups ● Individual Agents
	Value	Select New and add the following value: <ul style="list-style-type: none"> ● For Name, type 80. ● For Description, type Port value.
WebServerWebsite	Settings	Check the following boxes under Applicable Property Levels : <ul style="list-style-type: none"> ● IC (Root node) ● Workgroups ● Individual Agents
	Value	Select New and add the following value: <ul style="list-style-type: none"> ● For Name, type website. ● For Description, type Website value.
WebServerProtocol	Settings	Check the following boxes under Applicable Property Levels : <ul style="list-style-type: none"> ● IC (Root node) ● Workgroups ● Individual Agents
	Value	Select New and add the following value: <ul style="list-style-type: none"> ● For Name, type http. ● For Description, type Protocol value.

4. Select **OK** in the **Property Declarations** dialog box.

Adding Outbound Contact properties for agents

You must add properties for all agents who work on outbound jobs for Outbound Contact. These steps assume that you have created all agents for your Avaya IC system in IC Manager.

To configure Outbound Contact properties for agents:

1. In IC Manager, select the **Agent** tab.
2. Double-click the agent in the list of agents.
3. Select the **Channel** tab and make sure Voice is enabled and configured for the agent.
If you have not enabled Voice, see [Configuring the media channels for a test agent](#) on page 383 and *IC Administration Volume 1: Servers & Domains*.
4. Select the **Skills** tab and perform the following steps:
 - a. Double-click each desired outbound skill in the left pane.
 - b. Select **Apply**.
5. Select the **Properties** tab and perform the following steps:
 - a. In the **Sections** list, set values for the properties in the following table:

Property	Name	Value
Agent\Desktop\ScreenPop	PopOnAllArrivingContacts	Yes
Agent\Desktop\Softphone	SwapHeldEnabled	Yes

- b. Select **Apply**.
6. Select **OK**.
Repeat these steps for each agent who will work with Outbound Contact.

Configuring the Unified Agent Directory

The Unified Agent Directory contains resources for your contact center, including:

- Queues
- Agents
- Supervisors
- Subject Matter Experts
- Non-human resources, such as Interactive Voice Response units (IVRs)

You must configure queues and agents as Addressable if you want them to be visible in the Unified Agent Directory. For agents, set the ShowAgentsOnStartup property to be True to display the Directory tab in the Unified Agent Directory. Agents use the Directory tab to view individual agents in the contact center.

Agents can filter their view of the Unified Agent Directory to see only agents or queues that meet specified criteria. You can change this setting to force agents to view all of the agents and queues in your contact center, if desired.

For information on how to set other properties related to the Unified Agent Directory, see *IC Administration Volume 2: Agents, Customers, & Queues*. For information on how to use the Unified Agent Directory, see *Avaya Agent User's Guide*.

To configure the Unified Agent Directory, perform the steps in the following topics:

1. [Configuring a Workflow server for the Unified Agent Directory](#) on page 393.
2. [Configuring agents for the Unified Agent Directory](#) on page 395.

Configuring a Workflow server for the Unified Agent Directory

Configure every Workflow server in a user domain for the Unified Agent Directory. Without this configuration, agents may not be able to access the Unified Agent Directory and will not be able to transfer contacts to virtual queues.

 **Important:**

After you create a virtual queue, to allow agents to transfer contacts to the new queues, do one of the following for every Workflow server in a user domains that runs workflows for the Unified Agent Directory:

- Manually run the sys_transfer.update_vq_cache workflow
- Restart each Workflow server

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The following table describes the required configuration parameters for these Workflow servers.

Configuration parameter	Value
Semaphore	agentsearch.update_searchresult
Synchronous Startup Flow	<ul style="list-style-type: none">● sys_transfer.update_vq_cache● sys_transfer.transfertovq
Startup Flow	sys_agentsearch.update_agentstate_cache

The Avaya IC seed data includes these workflows. When you created the CCQ database, you imported the compiled workflows with the seed data and stored them in the database. However, you must still associate these workflows with the Workflow server.

If your Avaya IC system includes multiple Workflow servers, perform these steps on every Workflow server in a user domain and every Workflow server that handles agent searches and transfers between agents.

Tip:

In IC Manager, the **New** button that you use to add new items, such as new records to a table or new properties to a server or agent, is on the toolbar.

The following figure shows the **New** button.



To configure the Workflow server for the Unified Agent Directory:

1. In the **Server** tab of IC Manager, double-click a Workflow server in a user domain.
2. Select the **Workflow** tab.
3. Confirm that the Workflow server includes the following required semaphore:
agentsearch.update_searchresult
 - a. Select the **Ellipsis (...)** button next to **Semaphores**.
 - b. If the rows do not include the required semaphore:
 - Select **New**.
 - In the new row, type `agentsearch.update_searchresult`
 - Select **OK**.

4. Confirm that the Workflow server includes the required synchronous startup flows:
 - a. Select the **Ellipsis (...)** button next to **Synchronous Startup Flows**.
 - b. If the rows do not include the following required synchronous startup flow:
`sys_transfer.update_vq_cache`
 - Select **New**.
 - In the new row, type `sys_transfer.update_vq_cache`.
 - Select **OK**.
 - c. If the rows do not include the following required synchronous startup flow:
`sys_transfer.transfertovq`
 - Select **New**.
 - In the new row, type `sys_transfer.transfertovq`.
 - Select **OK**.
 5. Confirm that the Workflow server includes the following required startup flow:
 - a. Select the **Ellipsis (...)** button next to **Startup Flows**.
 - b. If the rows do not include the following required startup flow:
`sys_agentsearch.update_agentstate_cache`
 - Select **New**.
 - In the new row, type `sys_agentsearch.update_agentstate_cache`.
 - Select **OK**.
 6. Select **Apply**.
 7. Select **OK**.
 8. Stop and restart the Workflow server.
- Repeat these steps for every Workflow server in a user domain.

Configuring agents for the Unified Agent Directory

To configure agents for the Unified Agent Directory, perform the steps in one of the following topics:

- [Configuring all agents for the Unified Agent Directory](#) on page 396
- OR
- [Configuring an agent for the Unified Agent Directory](#) on page 396

Configuring all agents for the Unified Agent Directory

Follow these steps to configure all agents for the Unified Agent Directory.

To configure all agents for the Unified Agent Directory:

1. In IC Manager, select **Tools > Groups**.
2. Select the **Properties** tab.
3. Select the IC node in the left pane.
4. In the **Sections** list, select **Agent/Desktop/Directory**.
5. Select **Add Property**, and in the **Assign Property** dialog box:
 - a. Select **ShowAgentsOnStartup** from the **Property** drop-down list.
 - b. Select **Yes** from the **Property Value** drop-down list.
 - c. Select **OK**.
6. Select **Add Property**, and in the **Assign Property** dialog box:
 - a. Select **WorkflowServerName** from the **Property** drop-down list.
 - b. Type the name of the Workflow server that runs the workflows for the Unified Agent Directory in the **Property Value** field.

You must enter the name of the Workflow server where you added the semaphore in [Configuring a Workflow server for the Unified Agent Directory](#) on page 393.
 - c. Select **OK**.
7. Select **Apply**.
8. Select **OK**.

Configuring an agent for the Unified Agent Directory

Follow these steps to configure individual agents for the Unified Agent Directory.

To configure agents for the Unified Agent Directory:

1. In IC Manager, double-click the agent in the list of agents.
2. Select the **Properties** tab.
3. In the **Sections** list, select **Agent/Desktop/Directory**.
4. Select **Add Property**.

5. In the **Assign Property** dialog box, select one of the following properties from the **Property** drop-down list, select the appropriate value from the **Property Value** drop-down list, and Select **OK**. Repeat these steps for each property.

Property	Recommended Property Value	Notes
ShowAgentsOnStartup	Yes	Adds the Directory Tab to the Unified Agent Directory.
ShowAgentState	Yes	Displays agent's state in the Directory tree of the Unified Agent Directory.
ShowAllAgents	Yes	Shows the entire Directory tree for agents in the Unified Agent Directory.
SkillsSupport	Yes	Lets agents use skills as search criteria in the Unified Agent Directory.
TransferFlowName	Type the name of the workflow that retrieves the destination from the virtual queue.	
WorkflowServerName	Name of the Workflow server that runs the workflows for the Unified Agent Directory.	Use the Workflow server where you added the semaphore in Configuring a Workflow server for the Unified Agent Directory on page 393.
UADStringFormat	Select the desired string format.	Determines how agents are displayed in the Unified Agent Directory. When you choose a string format, the Unified Agent Directory displays the following information in IC Manager: <ul style="list-style-type: none"> ● Standard string format displays the Display Name for an agent. ● ASCII string format displays the Full Name for an agent. ● LoginID string format displays the Login Name for an agent.

6. Select **OK**.

Configuring the Citrix integration

The Citrix client interface with the seamless window causes issues with the login behavior and the appearance of the Avaya IC agent desktop applications. Avaya provides two tools that prevent these potential issues. For more information, see *IC Installation Planning and Prerequisites*.

You do not need to perform additional steps if the Avaya IC uses the Citrix Web interface.

For this configuration, the Citrix integration requires some additional steps to ensure that the agents can connect to the agent desktop applications and that the agent desktop applications function correctly in the Citrix interface.

This section includes the following topics:

- [Installing the agent applications on the Citrix server](#) on page 398.
- [Locating the files for the tools](#) on page 399.
- [Configuring the Avaya Agent INI file](#) on page 399.
- [Configuring the Avaya IC Web browser tool](#) on page 400.
- [Configuring the executable tool](#) on page 402.

For more detailed information about the Avaya IC tools and the Citrix integration with Avaya IC, see *IC Installation Planning and Prerequisites*.

Installing the agent applications on the Citrix server

To install the agent desktop applications on a Citrix server, follow the procedures in [Testing the agent installer](#) on page 371. You do not have to perform any additional steps during the installation.

Depending upon the environment, you may need to adjust the size of the Avaya Agent framework then re-create the agent installer. For more information on how to customize the framework size, see *Avaya Agent Integration*.

Note:

You cannot install the agent desktop applications in a Citrix environment if you do not select the Citrix installation option in the Agent Site Preparation Wizard. For more information, see [Running the Agent Site Preparation wizard](#) on page 361.

Locating the files for the tools

The files for the tools are located in the following directory on the Avaya IC Windows CD-ROM 1:

```
<CD-ROM_drive>\Utils\Citrix
```

Configuring the Avaya Agent INI file

If the Avaya IC system includes agents accessing the Citrix client interface with the seamless window, you must configure the Avaya Agent INI file on each of the Citrix server machines that hosts Avaya IC agent desktop applications.

 **CAUTION:**

Do not create or configure the Avaya Agent INI file on any machine except a Citrix server that an agent will access through the Citrix client interface with the seamless window. The parameter needed for the seamless window can cause undesirable formatting and sizing of the Avaya Agent in other deployments.

To configure the Avaya Agent INI file:

1. In Notepad or another text editor, open a new document.
2. Type the following information into the document:

```
[QConsole]  
ResizeDesktop=FALSE
```

3. Save the file with the following name: `qui.ini`
4. Install the file in the Windows installation directory on each Citrix server that hosts Avaya IC agent desktop applications.

For example, the Windows installation directory is typically either `C:\Winnt` or `C:\Windows`.

Configuring the Avaya IC Web browser tool

To use the Avaya IC Web browser tool to access the agent desktop applications on the Citrix server:

1. Configure the Avaya IC Web browser tool.
2. Copy the files to the machine that hosts the Web server used by Avaya IC.

This section includes the following topics:

- [Components of the Web browser tool](#) on page 400.
- [Updating the HTML page for the Web browser tool](#) on page 401.
- [Installing the Web browser tool](#) on page 402.
- [Accessing more than one Citrix server](#) on page 402.

Components of the Web browser tool

The Avaya IC Web browser tool includes the files listed in the following table.

File	Description
ActiveX control	SetupLocalDesktopForAgentViaCitrixCtr.CAB Digitally signed ActiveX control with unique class ID
HTML access page	BasicStartAgent.htm After you update this page: <ul style="list-style-type: none">● Specifies the URL to the agent desktop applications on the Citrix server.● Determines the text that the agent sees on the links. You can customize this text to suit the needs of the contact center and to match the corporate style.

Updating the HTML page for the Web browser tool

The following table describes the parameters that you can configure and update in the HTML page. The only required parameter is the URL for the agent desktop applications on the Citrix server.

 **CAUTION:**

Do not delete or change the javascript or other code in the HTML page.

Property	Description
CitrixClientURL	Specifies the location of the startup link for the Avaya IC agent desktop applications on the Citrix server. The value for the property must be a valid URL. For example: CitrixClientURL="http://server_name.com/ICAgent/ICAgentAppMode.ica"
Start Avaya Agent	Specifies the text on the link that the agent clicks to access the agent desktop applications on the Citrix server.
EXIT	Specifies the text on the link that the agent clicks to close the interface with the agent desktop applications on the Citrix server.
Force Reset	Specifies the text on the link that the agent clicks to force a reset of the interface with the agent desktop applications on the Citrix server in the event of a failure.

In addition to the parameters in the above table, you can also customize the HTML page as follows:

- Add a corporate logo, a graphic for the background, or otherwise customize the appearance of the HTML page.
- Add one or more of the properties in the Application or Desktop sections of the INI file for the executable tool, as described in [Updating the INI file for the executable tool](#) on page 403.

Note:

You cannot add properties from the GUI section of the INI file for the executable tool.

Installing the Web browser tool

After you update the HTML access page, you can install the Web browser tool.

To install the Web browser tool, copy the following files to the machine that hosts the Web server used by the Avaya IC system:

- `SetupLocalDesktopForAgentViaCitrixCtr.CAB`
- `BasicStartAgent.htm`

For example, if the Avaya IC system uses the Microsoft IIS as the Web server, copy the files to the machine that hosts that Web server.

Accessing more than one Citrix server

If the agents need to access the agent desktop applications on more than one Citrix server:

1. For each Citrix server that hosts agent desktop applications, configure the files for a Web browser tool.
2. Install the following files in the same folder on the machine that hosts the Web server:
 - One copy of the ActiveX control:
`SetupLocalDesktopForAgentViaCitrixCtr.CAB`
 - For each Citrix server that the agents need to access, one copy of
`BasicStartAgent.htm`
3. Create a desktop icon or an item in the Internet Explorer **Favorites** menu for each Web browser tool.

Configuring the executable tool

To use the Avaya IC executable tool to access the agent desktop applications on the Citrix server:

1. Configure the Avaya IC executable tool.
2. Copy the files to either the agent workstations or to a network share that can be accessed by all agents.

This section includes the following topics:

- [Components of the executable tool](#) on page 403.
- [Updating the INI file for the executable tool](#) on page 403.
- [Installing the executable tool](#) on page 405.
- [Accessing more than one Citrix server](#) on page 405.

Components of the executable tool

The Avaya IC executable tool includes the files listed in the following table.

File	Description
Executable file	SetupLocalDesktopForAgentViaCitrix.exe Launches the dialog box used by agents to access the Citrix server that hosts the agent desktop applications.
INI file	AgentDesktopCtr.ini After you update this file: <ul style="list-style-type: none"> • Specifies the directory path to the agent desktop applications on the Citrix server. • Determines the text on the buttons in the dialog box. You can customize this text to suit the needs of the contact center and to match the corporate style.

Updating the INI file for the executable tool

The following table describes the parameters that you can configure and update in the INI file. The only required parameter is the directory path for the agent desktop applications on the Citrix server.

Section	Property	Description
APPLICATION	CitrixClientURL	Specifies the location of the startup link for the Avaya IC agent desktop applications on the Citrix server. The value for the property must be a valid URL. For example: CitrixClientURL="http://server_name.com/ICAgent/ICAgentAppMode.ica"
	DontStartMultipleInstancesOfAgent	Controls whether the agent can open more than one interface to the same Citrix server from the Start button. If set to false or not present, the agent can open more than one interface. For example, DontStartMultipleInstancesOfAgent=TRUE
	AgentAlreadyRunningMsg	Specifies the message displayed to the agent if an interface is already open and you set DontStartMultipleInstancesOfAgent is set to TRUE. For example, AgentAlreadyRunningMsg=The Avaya agent was already started

Configuring agent applications

Section	Property	Description
DESKTOP	ClientBarHight	Controls the desktop area reserved for the bottom of the Avaya Agent framework. The default value is 125 pixels. For example, ClientBarHight= 151
	ClientBarWidth	Controls the desktop area reserved for the left side bar of the Avaya Agent framework. The default value is 200 pixels. For example, ClientBarWidth=201
GUI	Caption properties	The following caption properties allow you to specify the text for the dialog box: <ul style="list-style-type: none"> • WindowCaption="Avaya Agent Desktop Control (customize me) " • StopButtonCaption="Exit Avaya Agent (customize me) " • StartButtonCaption="Start Avaya Agent (customize me) " • ResetButtonCaption="Reset Desktop (customize me) " • ApplicationFrameCaption="Application Controls (customize me) " • ResetFrameCaption="Emergency Control (customize me) "
	MinimizeWindowOnLanchedAppStart	Automatically minimizes the interface after the agent accesses the agent desktop applications on the Citrix server. For example, MinimizeWindowOnLanchedAppStart=TRUE
	MaximizeWindowOnLanchedAppExit	Automatically maximizes the interface after the agents starts the agent desktop applications on the Citrix server. Only set this property to TRUE if you also set AutoResetOnExit to TRUE. For example, MaximizeWindowOnLanchedAppExit=TRUE
	DisableStartButtonAfterFirstClick	Automatically disables the Start button on the dialog box after the agent starts the agent desktop applications on the Citrix server. For example, DisableStartButtonAfterFirstClick=FALSE
	AskForExitConformation	Ensures that the interface asks the agent to confirm before exiting the interface to the Citrix server. For example, AskForExitConformation=TRUE

Installing the executable tool

You can install the executable in either of the following locations:

- On a network share that is accessible to all agents who need to use the executable tool.
- Every agent workstation used by an agent who needs to use the executable tool.

To install the executable tool, copy the following files to the desired location:

- `SetupLocalDesktopForAgentViaCitrix.exe`
- `AgentDesktopCtr.ini`

Accessing more than one Citrix server

If an agent needs to access the agent desktop applications on more than one Citrix server:

1. For each Citrix server that hosts agent desktop applications, configure the files for a executable tool.
2. Install a executable tool for each Citrix server in separate folders on the agent workstation.
3. Create a desktop icon or **Start** menu item for each executable tool.

Configuring agent applications

Chapter 14: Configuring Avaya Full Text Search Engine

This section describes how to configure Avaya FTSE. You must configure Avaya FTSE after complete the configuration of the Avaya IC system. For more information, see [Installation order](#) on page 23.

This section includes the following topics:

- [Configuring Avaya FTSE on Microsoft Windows](#) on page 407.
- [Configuring Avaya FTSE for Sun Solaris](#) on page 411.
- [Configuring Avaya FTSE for IBM AIX](#) on page 414.

Configuring Avaya FTSE on Microsoft Windows

Configure Avaya FTSE after you complete the configuration of the Avaya IC system. You can create and configure Avaya IC agents after you configure Avaya FTSE.

To configure Avaya FTSE on Windows machines, perform the steps in the following topics:

1. [Windows services for Avaya FTSE](#) on page 408.
2. [Running the QKnowledge Configuration Tool](#) on page 408.
3. [Running the Web Self-Service Configuration Tool](#) on page 409.
4. [Configuring full text searches for Microsoft Windows](#) on page 409.
5. [Updating the full text indices on Microsoft Windows](#) on page 410.

Windows services for Avaya FTSE

The following are the Windows services created by the QKnowledge Configuration Tool:

- IC Knowledgebase Service 6.1
- AIC FTSE Connector v1.0
- AIC FTSE Connector v1.0 Manager
- AIC FTSE for Java v1.0
- AIC FTSE STR Service v1.0

These Windows services use the local system account as their log on user.

Running the QKnowledge Configuration Tool

To run the QKnowledge Configuration Tool:

1. Open a DOS command prompt window.
2. In the command prompt window, navigate to the following directory:
`IC_INSTALL_DIR\IC61\bin`
3. Execute the following batch file: `configFTSEQK.bat`
4. In the **Log In** dialog box:
 - a. Type a valid Avaya IC user name with administrator privileges.
 - b. Type the password for that account.
 - c. Select **OK**.

The Avaya FTSE Configuration Tool configures QKnowledge. The Configuration Tool outputs any stack trace errors to the Console window. For some suggested resolutions for these errors, see [Troubleshooting QKnowledge](#) on page 533.

5. Exit from the Console window.
6. In the Windows Services Control Panel, start the following Windows services:
 - Avaya IC Knowledgebase service 6.1
 - AIC FTSE for java v 1.0

Running the Web Self-Service Configuration Tool

The Web Self-Service database includes the FAQs and Suggested Email Responses.

To run the Web Self-Service Configuration Tool:

1. Open a DOS command prompt window.
2. In the command prompt window, navigate to the following directory:
`IC_INSTALL_DIR\IC61\bin`
3. Execute the following batch file: `ConfigFTSEWRU.bat`
4. In the **Log In** dialog box:
 - a. Type a valid Avaya IC user name with administrator privileges.
 - b. Type the password for that account.
 - c. Select **OK**.

The Avaya FTSE Configuration Tool configures Web Self-Service. The Configuration Tool outputs any stack trace errors to the Console window. For some suggested resolutions for these errors, see [Verifying the Web Self-Service configuration on Microsoft Windows](#) on page 531.

5. Exit from the Console window.
6. If you are migrating from an earlier release of Avaya IC:
 - a. Run `updatewru.bat`.
 - b. Navigate to `IC_INSTALL_DIR\IC61\tomcat\work` and delete all of the files and subdirectories in that directory

Configuring full text searches for Microsoft Windows

To configure full text searches for Microsoft Windows:

1. If the Website Tomcat service is running, restart this service before you configure full text searches.
2. Open a DOS command prompt window.
3. In the command prompt window, navigate to the following directory:
`IC_INSTALL_DIR\IC61\etc\wru_sql\`

Configuring Avaya Full Text Search Engine

4. Run the set up command for your database:

- SQL Server:

```
fulcrum_setup.cmd sqlserver <ccq_database_username>  
<ccq_database_password>
```

- Oracle:

```
fulcrum_setup.cmd oracle <ccq_database_username>  
<ccq_database_password>
```

After the set up command executes, continue with Step 4.

5. Check the `IC_INSTALL_DIR\IC61\etc\wru_sql\wru_createview.err` file for errors.

If the file is not present or is empty, the set up command executed correctly. Some messages that you might see in the error file do not indicate a problem. For more information, see [Troubleshooting full text searches](#) on page 530.

6. Check the `IC_INSTALL_DIR\IC61\etc\wru_sql\fulcrum.err` file for errors.

If the file is empty, the set up command executed correctly. All messages in this file indicate errors. Correct these errors as indicated in the message and as required by the database, then re-run the set up command.

Updating the full text indices on Microsoft Windows

If you host your customer Website and WebACD server on different machines, or if your Avaya IC configuration includes multiple Websites, you must update the full text indices on those machines. The update ensures that the indices on these machines include all documents that you have added to the index.

You can run the update command as needed or schedule them to run at regular intervals. If you schedule an update to run at regular intervals, do not run the update more frequently than once per hour.

You must run this update command on every machine that hosts one or more of the following:

- Customer-facing Website
- WebACD server

 **Important:**

Do not run this update command on the machine that hosts the administrative Website. That machine automatically updates its own index.

To update the full text indices:

1. Open a DOS command prompt window.
2. In the command prompt window, navigate to the following directory:
`IC_INSTALL_DIR\IC61\etc\wru_sql`
3. Run the following update command: `fulcrum_updatendx.cmd`
4. Check the `IC_INSTALL_DIR\IC61\etc\wru_sql\fulcrum_updatendx.err` file for errors.

If the file is empty, the set up command executed correctly. All messages in this file indicate errors. Correct these errors as indicated in the message and as required by the database, then re-run the set up command.

Configuring Avaya FTSE for Sun Solaris

To configure Avaya FTSE and full text searches on Solaris machines, perform the steps in the following topics:

1. [Changing ownership for the full text search directory](#) on page 411.
2. [Configuring Web Self-Service on Sun Solaris](#) on page 412.
3. [Configuring full text searches on Sun Solaris](#) on page 413.
4. [Updating full text indices on Sun Solaris](#) on page 413.

Changing ownership for the full text search directory

Only the root user has read permissions for some of the files in the following directory:
`IC_INSTALL_DIR/IC61/etc/wru_sql`

You must change the ownership for this directory if you plan to run the Avaya FTSE components as a non-root user on any machine that hosts a Website or the WebACD server.

Configuring Avaya Full Text Search Engine

To change ownership for the full text search directory:

1. Log in as root user.
2. Navigate to `IC_INSTALL_DIR/IC61/etc`
3. Execute the following command:

```
chown -R <userid> wru_sql
```

where `<userid>` represents the non-root user that you use to run the Avaya FTSE components.

Configuring Web Self-Service on Sun Solaris

Web Self-Service includes the Web Self-Service FAQ database and Suggested Email Responses.

To configure Web Self-Service on Sun Solaris:

1. Navigate to the following folder: `IC_INSTALL_DIR/IC61/bin`
2. Execute the following shell script: `./configftse`
3. In the **Log In** dialog box:
 - a. Type a valid Avaya IC user name with administrator privileges.
 - b. Type the password for that account.
 - c. Select **OK**.

The Avaya FTSE Configuration Tool configures Web Self-Service. The Configuration Tool outputs any stack trace errors to the Console window. For some suggested resolutions for these errors, see [Verifying the Web Self-Service configuration on Sun Solaris](#) on page 532.

4. If you are migrating from an earlier release of Avaya IC:
 - a. Execute the following command: `./icenv ./updatewru.sh`
 - b. Navigate to `IC_INSTALL_DIR/IC61/tomcat/work` and delete all of the files and subdirectories in that directory

Configuring full text searches on Sun Solaris

You must configure full text searches on every machine that hosts one or more of the following:

- Customer-facing Website
- Administrative Website
- WebACD server

To set up full text searches on Sun Solaris:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/etc/wru_sql`
2. Run the following command to create the indices for full text searching:
`./fulcrum_setup.sh <database_username> <database_password>`

When this command executes, you may see the following output:

```
ERROR at line 1:  
ORA-00955: name is already used by an existing object
```

You can ignore this error. It indicates that the view already exists.

3. Check the `IC_INSTALL_DIR/IC61/etc/wru_sql/fulcrum.err` file for errors.

If the file is not present or is empty, the set up command executed correctly. Some messages that you might see in the error file do not indicate a problem. For more information, see [Troubleshooting full text searches](#) on page 530.

4. Verify that the command did not create a file with a `DIL` extension in the `IC_INSTALL_DIR/IC61/etc/wru_sql/` directory.

If such a file exists, check the contents for errors. If it contains errors, check the contents of `fulcrum_odbctrace.out` to see what went wrong. If there were problems with the database connection, confirm that the entries in the `odbc.ini` file are correct and that you invoked `fulcrum_setup.sh` with a valid username and password.

After you correct all errors, re-run the `fulcrum_setup.sh` command.

Updating full text indices on Sun Solaris

If you host your customer Website and WebACD server on different machines, or if your Avaya IC configuration includes multiple Websites, you must update the full text indices on those machines. The update ensures that the indices on these machines include all documents that you have added to the index.

You can run the update command as needed or schedule them to run at regular intervals. If you schedule an update to run at regular intervals, do not run the update more frequently than once per hour.

Configuring Avaya Full Text Search Engine

You must run this update command on every machine that hosts one or more of the following:

- Customer-facing Website
- WebACD server

Do not run this update command on the machine that hosts the administrative Website. That machine automatically updates its own index.

To update the full text indices:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/etc/wru_sql`
2. Run the following update command:

```
./fulcrum_updatendx.sh
```
3. Check the `IC_INSTALL_DIR/IC61/etc/wru_sql/fulcrum_updatendx.err` file for errors.

If the file is empty, the set up command executed correctly. All messages in this file indicate errors. Correct these errors as indicated in the message and as required by the database, then re-run the set up command.

Configuring Avaya FTSE for IBM AIX

To configure Avaya FTSE full text searches on AIX machines, perform the steps in the following topics:

1. [Changing ownership for the full text search directory](#) on page 414.
2. [Configuring Web Self-Service on IBM AIX](#) on page 415.
3. [Configuring full text searches on IBM AIX](#) on page 415.
4. [Updating the full text search indices on IBM AIX](#) on page 417.

Changing ownership for the full text search directory

Only the root user has read permissions for some of the files in the following directory:
`IC_INSTALL_DIR/IC61/etc/wru_sql`

You must change the ownership for this directory if you plan to run the Avaya FTSE components as a non-root user on any machine that hosts a Website or the WebACD server.

To change ownership for the full text search directory:

1. Log in as root user.
2. Navigate to `IC_INSTALL_DIR/IC61/etc`
3. Execute the following command:

```
chown -R <userid> wru_sql
```

where `<userid>` represents the non-root user that you use to run the Avaya FTSE components.

Configuring Web Self-Service on IBM AIX

Web Self-Service includes the Web Self-Service FAQ database and Suggested Email Responses.

To configure Web Self-Service:

1. Navigate to the following folder: `IC_INSTALL_DIR/IC61/bin`
2. Execute the following shell script: `./configftse`
3. In the **Log In** dialog box:
 - a. Type a valid Avaya IC user name with administrator privileges.
 - b. Type the password for that account.
 - c. Select **OK**.

The Avaya FTSE Configuration Tool configures Web Self-Service. The Configuration Tool outputs any stack trace errors to the Console window. For some suggested resolutions for these errors, see [Verifying the Web Self-Service configuration on IBM AIX](#) on page 532.

4. If you are migrating from an earlier release of Avaya IC:
 - a. Execute the following command: `./icenv ./updatewru.sh`
 - b. Navigate to `IC_INSTALL_DIR/IC61/tomcat/work` and delete all of the files and subdirectories in that directory

Configuring full text searches on IBM AIX

You must configure full text searches on every machine that hosts one or more of the following:

- Customer-facing Website
- Administrative Website
- WebACD server

Configuring Avaya Full Text Search Engine

To configure full text searches on IBM AIX:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/etc/wru_sql`
2. Run the following command to create the indices for full text searching:

```
./fulcrum_setup.sh
```

When this command executes, you may see the output specified in the following table.

Error message	Description
DB21034E The command was processed as an SQL statement because it was not a valid Command Line Processor command. During SQL processing it returned: SQL0601N The name of the object to be created is identical to the existing name "CCQ.WRU_VIEW" of type "VIEW". SQLSTATE=42710	This message is created when the command tries to create a view on the DB2 database. You can ignore this error. This message indicates that the view already exists.
"Error : 666"	This error indicates a problem in the <code>odbc.ini</code> file. This error results from the <code>bind18</code> command used to create bind packages for the ODBC drivers. Verify that the entries in the <code>odbc.ini</code> file for the <code>ccq</code> datasource are correct. Incorrect values in this file typically result from incorrect values entered in the Configuration Tool. Repeat the configuration of Web Self-Service.
execsql: execute failed SQLSTATE: SGS00, Native error: 0, error text [Hummingbird][SearchServer] Invalid table name	You may see this error message twice in <code>fulcrum.err</code> . This error occurs because the script is attempting to drop a table that does not yet exist. You can ignore this error when you run the <code>fulcrum_setup</code> command for the first time on a machine. However, if you receive this error when you repeat the command on a machine, investigate why the script cannot access the database to perform the following tasks: <ul style="list-style-type: none">● unprotect table <code>qw_wru_en</code>● drop table <code>qw_wru_en</code>

3. Check the `IC_INSTALL_DIR/IC61/etc/wru_sql/fulcrum.err` file for errors.

If the file is not present or is empty, the set up command executed correctly. Some messages that you might see in the error file do not indicate a problem. For more information, see [Troubleshooting full text searches](#) on page 530.

4. Verify that the command did not create a file with a `DIL` extension in the `IC_INSTALL_DIR/IC61/etc/wru_sql/` directory.

If such a file exists, check the contents for errors. If it contains errors, check the contents of `fulcrum_odbctrace.out` to see what went wrong. If there were problems with the database connection, confirm that the entries in the `odbc.ini` file are correct and that you invoked `fulcrum_setup.sh` with a valid username and password.

5. Verify that the `wru_createview.sql` script contains the correct values for username, password, and database name for the DB2 database.

The Configuration Tool substitutes these values when you configure the Website Web application. Incorrect values in this file typically result from incorrect values entered in the Configuration Tool. If the file includes errors, re-configure the Website. For more information about how to configure the Website, see *IC Installation and Configuration*.

6. After you correct all errors, re-run the `fulcrum_setup.sh` command.

Updating the full text search indices on IBM AIX

If you host your customer Website and WebACD server on different machines, or if your Avaya IC configuration includes multiple Websites, you must update the full text indices on those machines. The update ensures that the indices on these machines include any documents you have added to the index.

You can run the update command as needed or schedule them to run at regular intervals. If you schedule an update to run at regular intervals, do not run the update more frequently than once per hour. You must run this update command on every machine that hosts one or more of the following:

- Customer-facing Website
- WebACD server

Do not run this update command on the machine that hosts the administrative Website. That machine automatically updates its own index.

To update the full text search indices:

1. Navigate to the following directory: `IC_INSTALL_DIR/IC61/etc/wru_sql`
2. Run the following update command:


```
./fulcrum_updatendx.sh
```
3. Check the `IC_INSTALL_DIR\IC61\etc\wru_sql\fulcrum_updatendx.err` file for errors.

If the file is empty, the set up command executed correctly. All messages in this file indicate errors. Correct these errors as indicated in the message and as required by the database, then re-run the set up command.

■ ■ ■ ■ ■ ■

Chapter 15: Installing Business Advocate components

This section describes how to install Business Advocate for Avaya IC. This section includes the following topics:

- [Required administrator privileges](#) on page 419.
- [Prerequisites for Business Advocate](#) on page 420.
- [Creating a secondary server environment for Business Advocate](#) on page 420.
- [First Logical Resource Manager](#) on page 421.
- [Standby Resource Manager server](#) on page 431.
- [Additional Logical Resource Manager](#) on page 435.
- [Business Advocate administration tools](#) on page 444.

For information about Business Advocate components and how to configure Business Advocate, see *IC Business Advocate Configuration and Administration*.



Important:

The Resource Manager server and Resource Manager components support the Windows 2000 server operating system only. For more information, see *IC Installation Planning and Prerequisites*.

Required administrator privileges

All users who install Business Advocate components on server machines must use a Windows Active Directory Domain account with local administrator privileges on that machine. Avaya recommends that you use the Advocate user account that you used to install the Business Advocate components on the machine.

Prerequisites for Business Advocate

If you do not perform all of the prerequisites for Business Advocate, including the installation of Avaya IC, you cannot install the Business Advocate components.

Before you install Business Advocate components, do the following:

1. Complete all prerequisites for the components in your Avaya IC system. For more information, see *IC Installation Planning and Prerequisites*.
2. Complete all prerequisites for Business Advocate, as described in *IC Installation Planning and Prerequisites*, including the following prerequisites on every machine that hosts a Resource Manager server:
 - Set up the Active Directory domain.
 - Install and configure the MSMQ service.
 - Install the database client.
 - Configure the RDBMS for Business Advocate.
3. Install the Avaya IC design and administration tools.
4. Install and configure all components of the Avaya IC system, including the Avaya IC servers, databases, media channels, and related components, described in earlier sections.
5. Install the Avaya IC server files to the machines where you plan to run the Business Advocate servers, described in [Installing Avaya IC servers](#) on page 49.

Creating a secondary server environment for Business Advocate

All machines that host Business Advocate servers require an ORB server.

Tip:

If you host the other Avaya IC servers on Solaris or AIX machines, the Resource Manager machine still requires a secondary ORB server. The Resource Manager server cannot start without a secondary ORB server.

For more information about how to create a secondary server environment, see [Configuring secondary servers](#) on page 161.

First Logical Resource Manager

This section explains how to install the first Logical Resource Manager in the Avaya IC system. This section includes the following topics that specify the steps you need to follow to install the first Logical Resource Manager:

1. [Components of the first Logical Resource Manager](#) on page 421.
2. [Prerequisites for the first Logical Resource Manager](#) on page 422.
3. [Installing the first Logical Resource Manager](#) on page 423.
4. [Building the Business Advocate database schema](#) on page 427.

Components of the first Logical Resource Manager

When you install the first Logical Resource Manager, you can install and configure the components in the following table.

Installation option	Component	Description
Server setup	Logical Resource Manager files	The components required to set up the first Logical Resource Manager.
	System store	The schema for the system store dedicated to this Logical Resource Manager. This database stores administration information, such as: <ul style="list-style-type: none"> ● System parameters ● Initialization parameters ● Location of MSMQ queues ● Location of servers ● Roles of Resource Manager servers
	Resource store	The schema for the resource store. The resource store is shared by all Logical Resource Managers in the Avaya IC system. This database stores operation information, such as qualifiers, service classes, and agent records and the associated capability sets and profiles.

Installing Business Advocate components

Installation option	Component	Description
Administration clients	Business Advocate administration tools	<i>Optional.</i> The following administrative tools are required to configure and administer Business Advocate: <ul style="list-style-type: none">● Business Advocate Supervisor● Component Manager● Alarm Manager
Resource Manager service	Resource Manager server	The files required for the Resource Manager server. The Resource Manager server is the primary server for Business Advocate. The Business Advocate installation installs this as a primary, active Resource Manager server.

Prerequisites for the first Logical Resource Manager

Before you install the first Logical Resource Manager, complete the following prerequisites:

1. Complete the following prerequisites, as described in *IC Installation Planning and Prerequisites*:
 - Configure the MSMQ services on the machine that hosts this server to use Active Directory services.
 - Configure an Active Directory Domain user account with "Logon as Service" privileges on the machine that hosts this Logical Resource Manager.
 - Create a dedicated Nethome network share directory.
 - Install the database client software for the RDBMS.
2. Create an Advocate database.

Installing the first Logical Resource Manager

Install the Logical Resource Manager on a Windows machine.

 **CAUTION:**

Do not repeat the steps in this section on another machine. Business Advocate can only have one first Logical Resource Manager. For an additional Logical Resource Manager, follow the instructions in [Additional Logical Resource Manager](#) on page 435.

To install the first Logical Resource Manager:

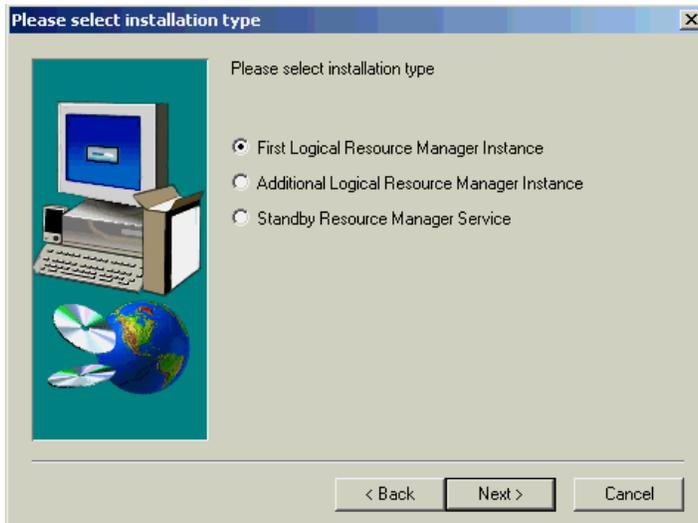
1. Log in to the machine with an Active Directory Domain account that has the required local administrator privileges.
2. Insert the Business Advocate CD-ROM.
The Business Advocate installer starts automatically.
3. In the **Welcome** window, select **Next**.
4. In the **Avaya Business Advocate Licensing Agreement** window, read the entire license agreement carefully, then select one of the following buttons:
 - **Yes**, if you agree to the terms of the agreement. The Business Advocate installation continues.
 - **No**, if you do not agree to the terms of the agreement. The Business Advocate installation exits.
5. In the **Enter User Information** window:
 - a. Complete the fields in the following table.

Field	Recommended entry
Name	Type your name.
Company	Type the name of the company where you are installing Business Advocate.

- b. Select **Next**.

Installing Business Advocate components

6. In the **Please Select Installation Type** window, shown in the following figure:
 - a. Select the **First Logical Resource Manager Instance** option.
 - b. Select **Next**.



7. In the **Select Components** window, shown in the following figure:
 - a. In the **Components** section, select one or more of the options to determine which components to install.

For more information about the options, see [Components of the first Logical Resource Manager](#) on page 421.
 - b. In the **Destination Folder** section, accept the default destination for installation or select **Browse** and navigate to the desired installation destination.
 - c. In the **Disk Space** section, review the Space Required and the Space Available to ensure that there is enough space on the destination disk for the selected Business Advocate components.

Select **Disk Space** to view the disk space of all configured disks on the machine.

d. Select **Next**.



8. In the **Specify Avaya Business Advocate Network Home Path** window, shown in the following figure:

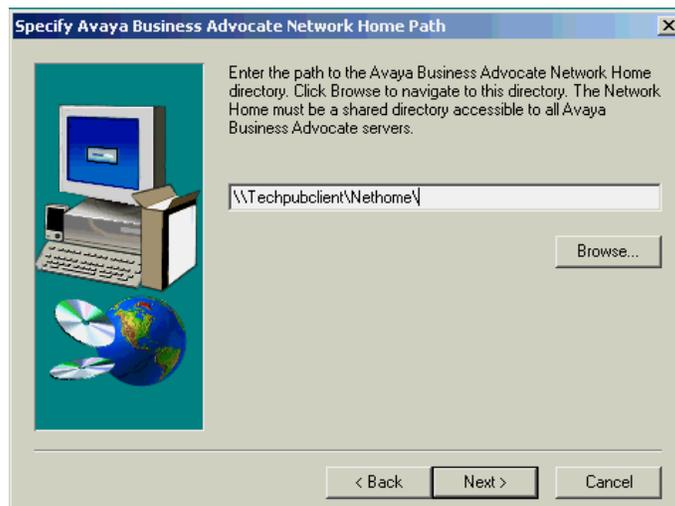
a. Type the path for the shared network home directory in UNC format.

UNC format is `\\<machine_name>\nethome`

The network home directory is the shared directory on the network that you created when you completed the Business Advocate prerequisites.

If you do not know the path, select **Browse** and navigate to the directory through Network Neighborhood. If the shared network home directory is on the same machine, do not select the local machine directly. You must navigate through Network Neighborhood to ensure that the Browse function uses UNC format.

b. Select **Next**.



Installing Business Advocate components

9. In the **NT Service Login Account** window, shown in the following figure:
 - a. In the **Login** field, type the Active Directory user account that you created to run Business Advocate services in the following format:
`<Active_Directory_domain>\<advocate_administrative_account>`
 - b. In the **Password** field, type the password for the Active Directory user account.
 - c. In the **Confirm** field, re-type the password.
 - d. Select **Next**.



10. In the **Review Add/Patch/Remove Components List** window, review the components to be installed, then select **Next**.

The Business Advocate installation installs the Business Advocate components that you selected. After the installation completes, review the log file to make sure that the installation did not encounter problems.
11. In the **Setup Complete** window:
 - a. Select the **Yes, I want to restart my computer now** option.
 - b. Select **Finish**.Continue with [Building the Business Advocate database schema](#) on page 427.

Building the Business Advocate database schema

After you install the files for the first Logical Resource Manager, the Business Advocate installer builds the schema for the system store and resource store.

After the machine reboots, the Business Advocate installation registers the files, then opens the **Build Database Schema** window.

To build the Business Advocate database schema, follow the steps in one of the following topics:

- [Building the Business Advocate database schema for SQL Server](#) on page 427.
- [Building the Business Advocate database schema for Oracle](#) on page 429.

Building the Business Advocate database schema for SQL Server

The following figure shows the **Build Database Schema** window for SQL Server.

Build	Schema	Schema File	Database Server	Database Name
<input checked="" type="checkbox"/>	Local System Store	bcient\Nethome\MSSQL\System_m.txt	testbox	advocate
<input checked="" type="checkbox"/>	Shared Resource Store	lient\Nethome\MSSQL\Resource_m.txt	testbox	advocate

Installing Business Advocate components

To build the Business Advocate database schema for SQL Server:

1. In the **Build Database Schema** window, complete the fields in the following table.

Field	Recommended entry	Notes
Select a DBMS	Select SQL Server.	Business Advocate databases do not support DB2. For Oracle, see Building the Business Advocate database schema for Oracle on page 429.
Username	Type a DBA user name for the Business Advocate databases.	For example, a DBA user name for SQL Server is sa .
Password	Type the password for the DBA user name.	Do not leave your DBA password blank.

2. Check the **Build** box next to the **Local System Store** field, and complete the fields in the following table.

Field	Recommended entry	Notes
Schema file	Accept the default.	Business Advocate automatically completes this field with the network home directory that you specified during installation.
Database Server	Type the name of the machine that hosts the database.	The database server is the machine that hosts the advocate database you created when you completed prerequisites.
Database Name	Type advocate.	The database name is the Advocate database you created when you completed prerequisites.

3. Check the **Build** box next to the **Shared Resource Store** field, and complete the fields in the following table.

Field	Recommended entry	Notes
Schema file	Accept the default.	Business Advocate automatically completes this field with the network home directory that you specified during installation.
Database Server	Type the name of the machine that hosts the database.	The database server is the machine that hosts the advocate database you created when you completed prerequisites.
Database Name	Type advocate.	The database name is the Advocate database you created when you completed prerequisites.

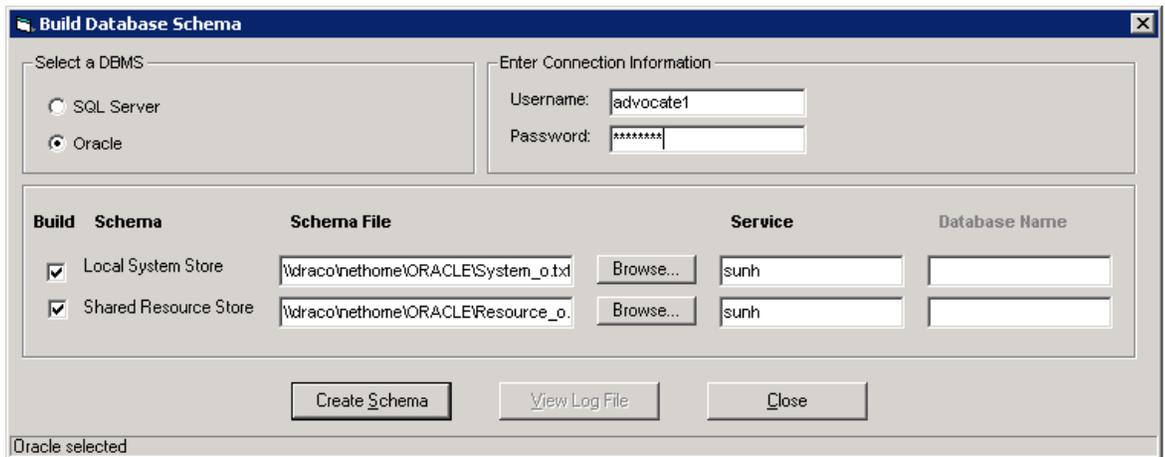
4. Select **Create Schema**.

This process can take a few minutes to complete the installation and configuration of the database schema. Monitor the messages on the status line at the bottom left of the **Build Database Schema** window. If desired, select **View Log File** to view the log file.

If this Logical Resource Manager includes a second, standby Resource Manager server, continue with [Standby Resource Manager server](#) on page 431.

Building the Business Advocate database schema for Oracle

The following figure shows the **Build Database Schema** window for Oracle.



Installing Business Advocate components

To build the Business Advocate database schema for Oracle:

1. In the **Build Database Schema** window, complete the fields in the following table.

Field	Recommended entry	Notes
Select a DBMS	Select Oracle.	Business Advocate databases do not support DB2. For Oracle, see Building the Business Advocate database schema for Oracle on page 429.
Username	Type a DBA user name for the Business Advocate databases.	For example, a DBA user name for Oracle is system .
Password	Type the password for the DBA user name.	Do not leave your DBA password blank.

2. Check the **Build** box next to the **Local System Store** field, and complete the fields in the following table.

Field	Recommended entry	Notes
Schema file	Accept the default.	Business Advocate automatically completes this field with the network home directory that you specified during installation.
Database Server	Type the name of the machine that hosts the database.	The database server is the machine that hosts the advocate database you created when you completed prerequisites.
Service	Type the Oracle Local Net Service for the machine.	For information on how to identify the Oracle Local Net Service, see the documentation provided by Oracle.

3. Check the **Build** box next to the **Shared Resource Store** field, and complete the fields in the following table.

Field	Recommended entry	Notes
Schema file	Accept the default.	Business Advocate automatically completes this field with the network home directory that you specified during installation.
Database Server	Type the name of the machine that hosts the database.	The database server is the machine that hosts the advocate database you created when you completed prerequisites.
Service	Type the Oracle Local Net Service for the machine.	For information on how to identify the Oracle Local Net Service, see the documentation provided by Oracle.

4. Select **Create Schema**.

This process can take a few minutes to complete the installation and configuration of the database schema. Monitor the messages on the status line at the bottom left of the **Build Database Schema** window. If desired, select **View Log File** to view the log file.

If this Logical Resource Manager includes a second, standby Resource Manager server, continue with [Standby Resource Manager server](#) on page 431.

Standby Resource Manager server

A Logical Resource Manager can include two Resource Manager servers. Each Resource Manager server resides on a different machine.

The primary, active Resource Manager server is installed when you install the files for the first Logical Resource Manager. You need to run the Business Advocate installation again to install the files required to support the standby Resource Manager server.

This section includes the following topics that describe how to install a standby Resource Manager server:

1. [Prerequisites for a Standby Resource Manager server](#) on page 432.
2. [Installing a Standby Resource Manager server](#) on page 432.
3. [Assigning a role to the standby Resource Manager server](#) on page 434.

Prerequisites for a Standby Resource Manager server

Before you install a standby Resource Manager server, complete the following prerequisites:

1. Install the Logical Resource Manager for this standby Resource Manager server, including all prerequisites for that Logical Resource Manager.
2. Complete the following prerequisites, as described in *IC Installation Planning and Prerequisites*:
 - Configure the MSMQ services on the machine that hosts this server to use the same Active Directory services as the Logical Resource Manager for this standby Resource Manager server.
 - Configure the same user account that you used to configure the Logical Resource Manager with "Logon as Service" privileges on the machine that hosts this server.
 - Install the database client software for the RDBMS.

Tip:

You do not need to create a separate Advocate database for this Resource Manager server.

Installing a Standby Resource Manager server

Install the standby Resource Manager server on a Windows machine.

Do not start this procedure until you have completed the installation of the first Logical Resource Manager.

To install the standby Resource Manager server:

1. Log in to the machine with an Active Directory Domain account that has the required local administrator privileges.
2. Insert the Business Advocate CD-ROM.

The Business Advocate installer starts automatically.
3. In the **Welcome** window, select **Next**.
4. In the **Avaya Business Advocate Licensing Agreement** window, read the entire license agreement carefully, then select one of the following buttons:
 - **Yes**, if you agree to the terms of the agreement. The Business Advocate installation continues.
 - **No**, if you do not agree to the terms of the agreement. The Business Advocate installation exits.

5. In the **Enter User Information** window:
- Complete the fields in the following table.

Field	Recommended entry
Name	Type your name.
Company	Type the name of the company where you are installing Business Advocate.

- Select **Next**.
6. In the **Please Select Installation Type** window, shown in the following figure:
- Select the **Standby Resource Manager Service** option.
 - Select **Next**.



7. In the **Choose Destination Location** window:
- In the **Destination Folder** section, accept the default destination for installation or select **Browse** and navigate to the desired installation destination.
 - Select **Next**.
8. In the **Specify Avaya Business Advocate Network Home Path** window:
- Type the path for the shared network home directory in UNC format.
UNC format is `\\<machine_name>\nethome`
Use the same network home directory as you used when you installed the Logical Resource Manager for this standby Resource Manager server.
If you do not know the path, select **Browse** and navigate to the directory through Network Neighborhood. If the shared network home directory is on the same

Installing Business Advocate components

machine, do not select the local machine directly. You must navigate through Network Neighborhood to ensure that the Browse function uses UNC format.

b. Select **Next**.

9. In the **NT Service Login Account** window:

a. In the **Login** field, type the Active Directory user account that you used when you created the Logical Resource Manager for this standby Resource Manager server.

Use the following format when you type the user account:

`<Active_Directory_domain>\<advocate_administrative_account>`

b. In the **Password** field, type the password for the Active Directory user account.

c. In the **Confirm** field, re-type the password.

d. Select **Next**.

10. In the **Review Add/Patch/Remove Components List** window, review the components to be installed, then select **Next**.

The Business Advocate installation installs the Business Advocate components that you selected. After the installation completes, review the log file to make sure that the installation did not encounter problems.

11. In the **Setup Complete** window:

a. Select the **Yes, I want to restart my computer now** option.

b. Select **Finish**.

Continue with [Assigning a role to the standby Resource Manager server](#) on page 434.

Assigning a role to the standby Resource Manager server

To assign a role to the standby Resource Manager server:

1. In the console tree of Advocate Administration, expand **Advocate Component Manager**.
2. Select the machine which hosts the Resource Manager server.
3. In the results pane, right-click the entry for the machine and select **Availability Config**.
4. In the **High Availability Config** dialog box:
 - a. Select the **Secondary** option.
 - b. Select **OK**.
5. Right-click the entry for the machine and select **Properties**.

6. In the **Component Properties** dialog box:
 - a. Check the **Enable** box.
 - b. Select **OK**.
7. Close the Component Manager.

Additional Logical Resource Manager

This section describes how to install additional Logical Resource Managers in an Avaya IC deployment that includes multiple Logical Resource Managers.

This section includes the following topics that specify the steps you need to follow to install an additional Logical Resource Manager:

1. [Components of an additional Logical Resource Manager](#) on page 435.
2. [Prerequisites for an additional Logical Resource Manager](#) on page 436.
3. [Installing an additional Logical Resource Manager](#) on page 437.
4. [Building the Business Advocate database schema](#) on page 439.

Components of an additional Logical Resource Manager

The following table describes the components installed with the options for an additional Logical Resource Manager.

Installation option	Component	Description
Server setup	Logical Resource Manager files	The components required to set up the additional Logical Resource Manager.
	System store	The schema for the system store dedicated to this Logical Resource Manager. This database stores administration information, such as: <ul style="list-style-type: none"> ● System parameters ● Initialization parameters ● Location of MSMQ queues ● Location of servers ● Roles of Resource Manager servers

Installing Business Advocate components

Installation option	Component	Description
Administration clients	Business Advocate administration tools	<i>Optional.</i> The following administrative tools are required to configure and administer Business Advocate: <ul style="list-style-type: none">● Business Advocate Supervisor● Component Manager● Alarm Manager
Resource Manager service	Resource Manager server	The files required for the Resource Manager server. The Resource Manager server is the primary server for Business Advocate. The Business Advocate installation installs this as a primary, active Resource Manager server.

Prerequisites for an additional Logical Resource Manager

Before you install an additional Logical Resource Manager, complete the following prerequisites:

1. Install the first Logical Resource Manager, including all prerequisites for that Logical Resource Manager. For more information, see [First Logical Resource Manager](#) on page 421.
2. Create a dedicated Advocate database for this Logical Resource Manager. You can create this database in either of the following locations:
 - The same database instance where you created the Advocate database for the first Logical Resource Manager
 - A different database instance than the instance where you created the Advocate database for the first Logical Resource Manager
3. Complete the following prerequisites, as described in *IC Installation Planning and Prerequisites*:
 - Configure the MSMQ services on the machine that hosts this server to use the same Active Directory services as the first Logical Resource Manager.
 - Configure the same user account that you used to configure the first Logical Resource Manager with "Logon as Service" privileges on the machine that hosts this server.
 - Create a dedicated Nethome network share directory for this Logical Resource Manager.
 - Install the database client software for the RDBMS.

Installing an additional Logical Resource Manager

Install the Logical Resource Manager on a Windows machine.

 **CAUTION:**

Do not follow the steps in this section if you have not yet completed the installation of a Logical Resource Manager on another machine. If this is the first Logical Resource Manager, follow the instructions in [First Logical Resource Manager](#) on page 421.

To install an additional Logical Resource Manager:

1. Log in to the machine with an Active Directory Domain account that has the required local administrator privileges.
2. Insert the Business Advocate CD-ROM.
The Business Advocate installer starts automatically.
3. In the **Welcome** window, select **Next**.
4. In the **Avaya Business Advocate Licensing Agreement** window, read the entire license agreement carefully, then select one of the following buttons:
 - **Yes**, if you agree to the terms of the agreement. The Business Advocate installation continues.
 - **No**, if you do not agree to the terms of the agreement. The Business Advocate installation exits.
5. In the **Enter User Information** window:
 - a. Complete the fields in the following table.

Field	Recommended entry
Name	Type your name.
Company	Type the name of the company where you are installing Business Advocate.

- b. Select **Next**.

Installing Business Advocate components

6. In the **Please Select Installation Type** window, shown in the following figure:
 - a. Select the **Additional Logical Resource Manager Instance** option.
 - b. Select **Next**.



7. In the **Select Components** window:
 - a. In the **Components** section, select one or more of the options to determine which components to install.

For more information about the options, see [Components of an additional Logical Resource Manager](#) on page 435.
 - b. In the **Destination Folder** section, accept the default destination for installation or select **Browse** and navigate to the desired installation destination.
 - c. In the **Disk Space** section, review the Space Required and the Space Available to ensure that there is enough space on the destination disk for the selected Business Advocate components.

Select **Disk Space** to view the disk space of all configured disks on the machine.
 - d. Select **Next**.

8. In the **Specify Avaya Business Advocate Network Home Path** window:

- a. Type the path for the shared network home directory in UNC format.

UNC format is `\\<machine_name>\nethome`

Do not use the same network home directory that you used for the first Logical Resource Manager.

If you do not know the path, select **Browse** and navigate to the directory through Network Neighborhood. If the shared network home directory is on the same

machine, do not select the local machine directly. You must navigate through Network Neighborhood to ensure that the Browse function uses UNC format.

- b. Select **Next**.
9. In the **NT Service Login Account** window:
 - a. In the **Login** field, type the Active Directory user account that you used when you created the first Logical Resource Manager.

Use the following format when you type the user account:
<Active_Directory_domain>\<advocate_administrative_account
 - b. In the **Password** field, type the password for the Active Directory user account.
 - c. In the **Confirm** field, re-type the password.
 - d. Select **Next**.
 10. In the **Review Add/Patch/Remove Components List** window, review the components to be installed, then select **Next**.

The Business Advocate installation installs the Business Advocate components that you selected. After the installation completes, review the log file to make sure that the installation did not encounter problems.
 11. In the **Setup Complete** window:
 - a. Select the **Yes, I want to restart my computer now** option.
 - b. Select **Finish**.Continue with [Building the Business Advocate database schema](#) on page 427.

Building the Business Advocate database schema

After you install the files for the additional Logical Resource Manager, the Business Advocate installer builds the schema for the system store. This Logical Resource Manager uses the same resource store as the first Logical Resource Manager.

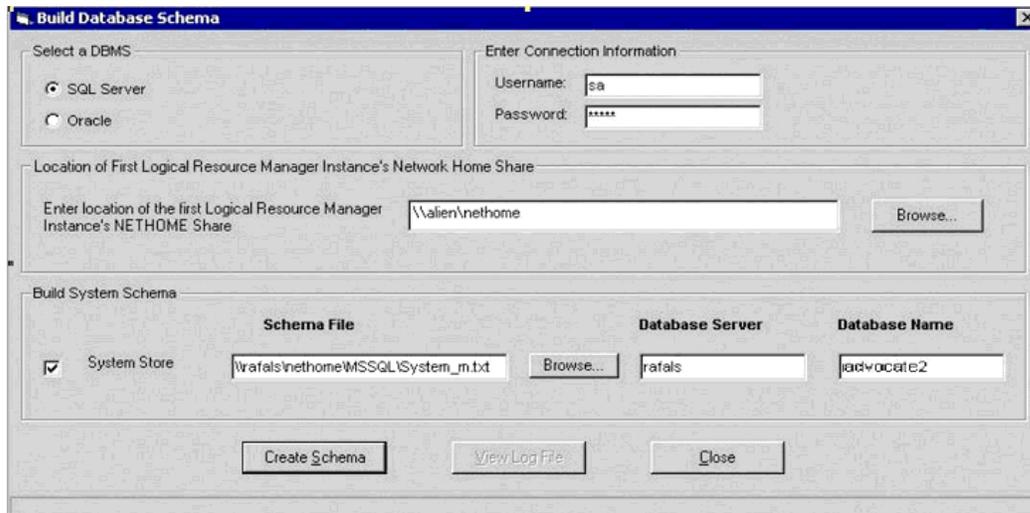
After the machine reboots, the Business Advocate installation registers the files, then opens the **Build Database Schema** window.

To build the Business Advocate database schema, follow the steps in one of the following topics:

- [Building the Business Advocate database schema for SQL Server](#) on page 440.
- [Building the Business Advocate database schema for Oracle](#) on page 442.

Building the Business Advocate database schema for SQL Server

The following figure shows the **Build Database Schema** window for SQL Server.



To create the Business Advocate database schema:

1. In the **Build Database Schema** window, complete the fields in the following table.

Field	Recommended entry	Notes
Select a DBMS	Select SQL Server.	Business Advocate databases do not support DB2. For Oracle, see Building the Business Advocate database schema for Oracle on page 429.
Username	Type a DBA user name for the Business Advocate databases.	For example, a DBA user name for SQL Server is sa .
Password	Type the password for the DBA user name.	Do not leave your DBA password blank.

2. Type the location of the shared network home directory that you created for the first Logical Resource Manager.

Use UNC format, for example, \\<machine_name>\nethome

If you do not know the path, select **Browse** and navigate to the directory through Network Neighborhood. If the shared network home directory is on the same machine, do not select the local machine directly. You must navigate through Network Neighborhood to ensure that the Browse function uses UNC format.

3. Check the **Build** box next to System Store, and complete the fields in the following table.

Field	Recommended entry	Notes
Schema file	Accept the default.	Business Advocate automatically completes this field with the network home directory that you specified during installation.
Database Server	Type the name of the machine that hosts the database.	The database server is the machine that hosts the advocate database you created when you completed prerequisites.
Database Name	Type advocate.	The database name is the Advocate database you created when you completed prerequisites.

4. Select **Create Schema**.

Monitor the messages on the status line at the bottom left of the **Build Database Schema** window. If desired, select **View Log File** to view the log file.

5. Select **Close**.

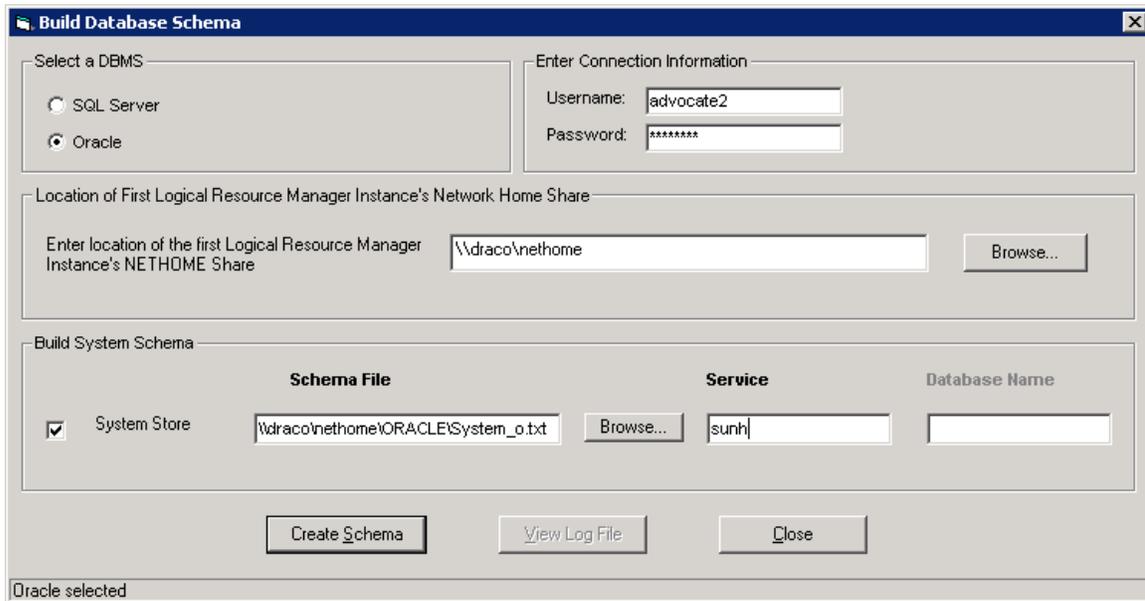
6. Select **OK** for each of the dialog boxes displayed by the Business Advocate installation.

This process can take a few minutes to complete the installation and configuration of the database schema.

If this Logical Resource Manager includes a second, standby Resource Manager server, continue with [Standby Resource Manager server](#) on page 431.

Building the Business Advocate database schema for Oracle

The following figure shows the **Build Database Schema** window for Oracle.



To create the Business Advocate database schema:

1. In the **Build Database Schema** window, complete the fields in the following table.

Field	Recommended entry	Notes
Select a DBMS	Select Oracle.	Business Advocate databases do not support DB2. For Oracle, see Building the Business Advocate database schema for Oracle on page 429.
Username	Type a DBA user name for the Business Advocate databases.	For example, a DBA user name for Oracle is system .
Password	Type the password for the DBA user name.	Do not leave your DBA password blank.

2. Type the location of the shared network home directory that you created for the first Logical Resource Manager.

Use UNC format, for example, \\<machine_name>\nethome

If you do not know the path, select **Browse** and navigate to the directory through Network Neighborhood. If the shared network home directory is on the same machine,

do not select the local machine directly. You must navigate through Network Neighborhood to ensure that the Browse function uses UNC format.

3. Check the **Build** box next to System Store, and complete the fields in the following table.

Field	Recommended entry	Notes
Schema file	Accept the default.	Business Advocate automatically completes this field with the network home directory that you specified during installation.
Database Server	Type the name of the machine that hosts the database.	The database server is the machine that hosts the advocate database you created when you completed prerequisites.
Service	Type the Oracle Local Net Service for the machine.	For information on how to identify the Oracle Local Net Service, see the documentation provided by Oracle.

4. Select **Create Schema**.

Monitor the messages on the status line at the bottom left of the **Build Database Schema** window. If desired, select **View Log File** to view the log file.

5. Select **Close**.

6. Select **OK** for each of the dialog boxes displayed by the Business Advocate installation.

This process can take a few minutes to complete the installation and configuration of the database schema.

If this Logical Resource Manager includes a second, standby Resource Manager server, continue with [Standby Resource Manager server](#) on page 431.

Business Advocate administration tools

The Business Advocate administration tools include the Business Advocate Supervisor.

Perform this step only if you want to host Business Advocate Supervisor on a separate administration machine. The Business Advocate installation automatically installs Business Advocate Supervisor with the first Logical Resource Manager.

 **Important:**

To use the Business Advocate administration tools, log in to the machine with an Active Directory Domain account that has local administrator privileges.

This section includes the following topics that describe how to install the administration tools on a separate administration machine, rather than with a Logical Resource Manager.

1. [Prerequisites for the administration tools](#) on page 444.
2. [Installing the administration tools](#) on page 445.

Prerequisites for the administration tools

Before you install the administration tools, complete the following prerequisites:

1. Install the first Logical Resource Manager, including all prerequisites for that Logical Resource Manager. For more information, see [First Logical Resource Manager](#) on page 421.
2. Configure the MSMQ services on the machine that hosts the administration tools to use the same Active Directory services as the first Logical Resource Manager.
3. Configure the same user account that you used to configure the first Logical Resource Manager with the following privileges on the machine that hosts the administration tools:
 - Logon as Service privileges
 - Local Administrator rights

Installing the administration tools

You do not need to install the administration tools if you selected Administrative Clients when you installed a Logical Resource Manager.

Install the administration tools on a Windows machine.

CAUTION:

Do not follow the steps in this section if you have not yet installed a Logical Resource Manager on another machine. If this is the first Logical Resource Manager, follow the instructions in [First Logical Resource Manager](#) on page 421.

Do not start this procedure until you have completed the installation of the first Logical Resource Manager.

To install the Business Advocate administration tools:

1. Log in to the machine with the Active Directory Domain account that has the required local administrator privileges.
2. Insert the Business Advocate CD-ROM.
The Business Advocate installer starts automatically.
3. In the **Welcome** window, select **Next**.
4. In the **Avaya Business Advocate Licensing Agreement** window, read the entire license agreement carefully, then select one of the following buttons:
 - **Yes**, if you agree to the terms of the agreement. The Business Advocate installation continues.
 - **No**, if you do not agree to the terms of the agreement. The Business Advocate installation exits.
5. In the **Enter User Information** window:
 - a. Complete the fields in the following table.

Field	Recommended entry
Name	Type your name.
Company	Type the name of the company where you are installing Business Advocate.

- b. Select **Next**.

Installing Business Advocate components

6. In the **Please Select Installation Type** window:
 - a. Select the **Additional Logical Resource Manager Instance** option.
 - b. Select **Next**.
7. In the **Select Components** window:
 - a. In the **Components** section:
 - Select the **Administrative Clients** option.
 - Do not select the other options.
 - b. In the **Destination Folder** section, accept the default destination for installation or select **Browse** and navigate to the desired installation destination.
 - c. In the **Disk Space** section, review the Space Required and the Space Available to ensure that there is enough space on the destination disk for the selected Business Advocate components.

Select **Disk Space** to view the disk space of all configured disks on the machine.
 - d. Select **Next**.
8. In the **Specify Avaya Business Advocate Network Home Path** window:
 - a. Type the path for the shared network home directory in UNC format.

UNC format is `\\<machine_name>\nethome`

Do not use the same network home directory that you used for the first Logical Resource Manager.
 - b. Select **Next**.
9. In the **Review Add/Patch/Remove Components List** window, review the components to be installed, then select **Next**.

The Business Advocate installation installs the Business Advocate components that you selected. After the installation completes, review the log file to make sure that the installation did not encounter problems.
10. In the **Setup Complete** window:
 - a. Select the **Yes, I want to restart my computer now** option.
 - b. Select **Finish**.

Chapter 16: Installing optional components

Perform the steps in the following topics to configure optional Avaya™ Interaction Center (Avaya IC) components:

- [Configuring Avaya Content Analyzer](#) on page 447.
- [Configuring WebQ](#) on page 452.
- [Configuring Letter Generator](#) on page 453.
- [Installing and configuring a second ICM server](#) on page 468.
- [Installing the SDK for Avaya IC servers](#) on page 475.

For information on how to install and configure Avaya Operational Analyst, see *Avaya Operational Analyst Installation and Configuration*.

Configuring Avaya Content Analyzer

The Avaya IC server installation automatically installs Content Analyzer files on the server machine. For more information, see [Installing Avaya IC servers](#) on page 49.

Before you can configure and use Content Analyzer, you must create and configure the Content Analyzer servers.

To configure Content Analyzer, perform the steps in the following topics:

1. [Creating the Administrative Content Analyzer server](#) on page 448.
2. [Creating the Operations Content Analyzer server](#) on page 449.
3. [Adding a Knowledge Base](#) on page 450.

For more detailed information about Content Analyzer, see:

- *Avaya Workflow Designer User Guide* for an overview of Content Analyzer and information about how to customize workflows for Content Analyzer
- *IC Administration Volume 1: Servers & Domains* to administer Content Analyzer, including how to set up and maintain Knowledge Bases and how to train Content Analyzer

Creating the Administrative Content Analyzer server

For more information about the Administrative Content Analyzer server, see *IC Administration Volume 1: Servers & Domains*.

To create the Administrative Content Analyzer server:

1. Select **Server > New** in IC Manager.
2. Select **CAAdmin** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	CAAdmin_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	This server should be in the same domain as the IC Email server. For example, select <code>Email</code> from the drop-down list if the server is in the Email domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **CAAdmin** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the Interaction Center Data Source.	If you used the default name, select <code>interaction_center</code> .
Path to NLP Data	Type the directory path to the NLP data.	Windows: <code>IC_INSTALL_DIR\IC61\oem\banter\nlp data</code> Solaris or AIX: <code>IC_INSTALL_DIR/IC61/oem/banter/NLP Data/</code>

5. Select **OK**.
6. Start the Administrative Content Analyzer server.

Creating the Operations Content Analyzer server

For more information about the Operations Content Analyzer server, see *IC Administration Volume 1: Servers & Domains*.

Note:

Do not start the Operations Content Analyzer server. You must configure at least one trained and validated Knowledge Base before you start this server.

To create the Operations Content Analyzer server:

1. Select **Server > New** in IC Manager.
2. Select **CAServer** from the list of servers. Select **OK**.
3. Select the **General** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
Name	OperationCA_<domain>	Include the domain in the server name to identify the server.
Domain	Select the Avaya IC domain for the server from the drop-down list.	This server should be in the same domain as the IC Email server. For example, select <code>Email</code> from the drop-down list if the server is in the Email domain.
Host	Select the machine's IP address from the drop-down list, or enter the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **CA Server** tab and complete the fields shown in the following table.

Field	Recommended entry	Notes
IC Data Source	Select the Interaction Center Data Source.	If you used the default name, select <code>interaction_center</code> .

Installing optional components

Field	Recommended entry	Notes
Path to NLP Data	Type the directory path to the NLP data.	Windows: <code>IC_INSTALL_DIR\IC61\oem\banter\nlp data</code> Solaris or AIX: <code>IC_INSTALL_DIR/IC61/oem/banter/NLP Data/</code>
Knowledge Base	Type the name of the Knowledge Base associated with this server.	Select Knowledge Base to display the Knowledge Base dialog box. For details about entering a Knowledge Base, see below.

5. Select **OK**.

Adding a Knowledge Base

Before you add a Knowledge Base to your Operations Content Analyzer server, perform the following steps in the Content Analyzer Administration tab:

1. Create the Knowledge Base.
2. Train the Knowledge Base.
3. Validate the Knowledge Base.
4. Save the trained and validated Knowledge Base.

For detailed information on how to perform these steps, see *IC Administration Volume 1: Servers & Domains*.

You need the following information about the Knowledge Bases before you add them to the Operations Content Analyzer server:

- Name
- File path
- Threshold
- Language codes

This information is available in IC Manager for all saved Knowledge Bases. You can find this information in the **KB Management** pane of the **Content Analysis** window.

To add a Knowledge Base to the Operations Content Analyzer server:

1. Double-click the Operations Content Analyzer server in the list of servers.
2. Select the **CAServer** tab.
3. Select the **Ellipsis (...)** button next to **Knowledge Base**.

4. In the **Knowledge Base** dialog box:

a. Select **New**.

b. Type the name of the Knowledge Base in the **Name** column.

This name must be the same as the name of the Knowledge Base in the **KB Name** column of the **KB Management** pane in the **Content Analysis** window.

c. Type the directory path to the Knowledge Base in the **KB File Location** column.

This path must be the same as the path in the **File Path** column of the **KB Management** pane in the **Content Analysis** window.

If the Administrative Content Analyzer server and the Operations Content Analyzer server are hosted on the same physical machine, this path must match the **File Path** column of the **KB Management** pane in the **Content Analysis** window.

If the Administrative Content Analyzer server and the Operations Content Analyzer server are hosted on different physical machines, make sure that this file path accesses the same Knowledge Base as the one pointed to by the **File Path** column of the **KB Management** pane in the **Content Analysis** window.

d. Type a threshold in the **Threshold** column, if desired.

You can leave this column blank or type the same threshold that you specified when you validated the Knowledge Base.

e. Select the **Ellipsis (...)** button in the **Languages** column.

5. In the **Languages** dialog box:

a. Select **New**.

b. Type a language code.

Repeat Steps a and b for each language code you want to add. All available language codes are in the **Languages** column of the **KB Management** pane in the **Content Analysis** window. The language codes are listed in a single string, separated by semicolons.

c. Select **OK**.

6. Select **OK** in the **Knowledge Base** dialog box.

7. Select **OK** in the **CAServer** tab.

Configuring WebQ

WebQ provides HTML pages for CustomerQ and other Business Applications. Your customers and support agents can use WebQ to access your Avaya database remotely through an Internet browser.

WebQ Router provides load balancing between active WebQ services and supports the SSL Internet security capability.

The following instructions provide an overview of how to configure WebQ for the CustomerQ application. For detailed instructions, see:

- *WebQ Reference* if you want to configure and deploy the application.
- *IC Database Designer User Guide* if you want to customize an ADL file.
- *IC Administration Volume 1: Servers & Domains* if you want to configure and deploy the WebQ server and WebQ Router.

To configure WebQ:

1. Confirm that your Data server and IIS server are up and running.
2. Open `custq.ad1` in Database Designer.
3. Check the appropriate boxes for the application components to generate WebQ pages, and customize the ADL file, if desired.
4. Select **File > Generate Web Application** and generate the WebQ application.
5. Copy the WebQ application directory to the machine that hosts the WebQ server and WebQ Router.
6. Copy the WebQ help directory from the machine that hosts your Design & Administration Tools to the machine that hosts your WebQ server. The WebQ help directory is located at `IC_INSTALL_DIR\IC61\help\WebQ`
7. Create a directory called `webq` under the IIS Server's root directory of the website's files.

For example, create a directory called `C:\InetPub\wwwroot\webq`

8. Copy the following files from `IC_INSTALL_DIR\IC61\httpd` to the IIS `webq` directory you created above:
 - `cal.gif`
 - `find.gif`
 - `login.htm`
 - `option.class`
 - `optionwidget.class`
 - `rw.gif`
 - `webqbar.gif`
 - `webqbtm.gif`
 - `webqbutn.gif`

- webqmenu.gif
 - webqpg1.jpg
 - webqp gn.gif
9. Configure and start the WebQ server.
 10. Configure and start the WebQ Router.

Configuring Letter Generator

Letter Generator allows you to create letter and form templates, and then generate mass mailings or single documents from those templates. Letter Generator works with the Avaya Business Applications. Your Avaya IC system must include a Business Application if you want to use Letter Generator.

Batch Administrator is a feature of Letter Generator that controls when and how generated documents are processed. All such documents are sent to a batch, which is a collection of documents and their destinations. The destination can be to a printer, email message, or PostScript file. Once a document is sent to a batch, it stays there until the Administrator freezes the batch and processes its contents.

To use the Letter Generator and Batch Administrator, perform the steps in the following topics:

1. [Prerequisites for Letter Generator](#) on page 454.
2. [Configuring the Letter Generator Web application](#) on page 454.
3. [Editing Letter Generator properties in IC Manager](#) on page 464.
4. [Configuring a Workflow server for Letter Generator](#) on page 464.
5. [Configuring Letter Generator for Japanese](#) on page 466.

Note:

Avaya recommends that you install Letter Generator on a different machine from the Web Management servers to avoid potential conflicts.

Prerequisites for Letter Generator

Before you configure the Letter Generator Web application, you must:

- Create an HTTP Connector server in the same Avaya IC domain as the Workflow server for Letter Generator or in that domain's failover path. For more information, see [Creating an HTTP Connector server](#) on page 142.
- Install GhostScript and GhostViewer on the machine where you plan to use the Workflow server for Letter Generator.
- Install Adobe Acrobat on the machine where you plan to run the Batch Administrator.

Configuring the Letter Generator Web application

Letter Generator requires a Web application. You configure Letter Generator on the **Web** tab of the Avaya IC Configuration Tool.

This section describes how to install and configure the Letter Generator Web application as a single Web application on the target machine. This section includes the following topics:

- [Where to configure the Letter Generator Web application](#) on page 454.
- [Hosting multiple Web applications on one machine](#) on page 454.
- [Advanced properties for the Letter Generator Web application](#) on page 455.
- [Configuring the Letter Generator Web application on Windows](#) on page 455.
- [Configuring the Letter Generator Web application on Solaris](#) on page 458.
- [Configuring the Letter Generator Web application on AIX](#) on page 461.

Where to configure the Letter Generator Web application

Perform this procedure on the machine that hosts the Workflow server for Letter Generator.

Hosting multiple Web applications on one machine

If the Avaya IC system includes more than one Web application on the same machine as the WebLM, Avaya recommends that you:

- Select **Multiple** for the **Tomcat Setup** option.
- Configure all of the Web applications on the target machine at the same time.

! Important:

If you do not configure all of the Web applications simultaneously, leave the options for all Web applications on the target machine checked when you re-run the Configuration Tool to create the new Web applications. If you do not leave the options for the previously created Web applications checked, the Configuration Tool may delete those Web applications from the machine.

Advanced properties for the Letter Generator Web application

The Web tab also includes advanced properties for the Java Virtual Machine.

Only configure the advanced properties if you expect a high volume of access to Letter Generator. For more information, see [Advanced properties on the Web tab](#) on page 501.

Configuring the Letter Generator Web application on Windows

Use these instructions if you plan to host the Letter Generator Web application on a Windows machine.

You do not need to stop the IIS Web server on Windows machines.

To configure the Letter Generator Web application on a Windows machine:

1. To start the Configuration Tool, select **Start > Programs > Avaya Interaction Center 6.1 > Configuration Tool**.

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

2. Log in with your IC Manager login ID and password.
3. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple

Installing optional components

Field	Description	Sample entry
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	C:\jdk1.3.1_06
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
IIS Website	The name of the IIS Web server that the Web application will use. Tip: For a localized version of IIS, type the localized name for the IIS Web server.	Default Web Site
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: http://<server>.<domain>.com:9606/ictest Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

4. Complete the Letter Generator fields in the following table.

Field	Description	Sample entry
Configure Letter Generator	Check this box if you want to configure the Web application for Letter Generator on the target machine. After you check this box, the Configuration Tool displays the other required fields for Letter Generator.	Checkmark in box
HTTPConnector	The HTTP Connector server used by Letter Generator. You must create the HTTP Connector server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server.	HTTPConnector_User1
GhostScript Home	The directory path for the GhostScript executable.	C:\ghostscript

5. Select **Apply Settings**.

6. Select **OK** in the **Success** dialog box.

7. Select **Exit**.

8. To complete the configuration, perform the following steps to ensure that all Letter Generator services start properly:

a. Open the Windows Services control panel.

b. Start the Tomcat NT services:

- For a multiple Tomcat setup, start Avaya IC Letter Generation Service 6.1.
- For a single Tomcat setup, start Avaya IC Jakarta Service 6.1.

For more information about how to start and stop Web application services, see [Starting and stopping Avaya IC services](#) on page 154.

Configuring the Letter Generator Web application on Solaris

Use these instructions if you plan to host the Letter Generator Web application on a Solaris machine.

 **Important:**

To configure the Letter Generator Web application on Solaris, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure the Letter Generator Web application to run on a Solaris machine:

1. Stop the Sun ONE server that hosts the Letter Generator Web application with the stop script packaged with the Web server:

```
<SunONE_install_dir>/servers/<my_ONE_server>/stop
```

2. Start the Configuration Tool:

- a. Navigate to `IC_INSTALL_DIR/IC61/bin`

- b. Run `./configure`

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

3. Log in with your IC Manager login ID and password.
4. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	<code>/opt/j2sdk1_3_1_06</code>
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> • Tomcat HTTP ports for Web applications • Tomcat AJP (Web server connector) ports 	Default: 9600

Field	Description	Sample entry
Web Server Home	The installation path for the Sun ONE™ Server that hosts the Web application.	/opt/iplanet
Web Server Name	The root name of the server as found in the Sun ONE™ Server home directory. Note: Do not include <code>https-</code> in the Web server name.	testbox.xyzcorp.com
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> ● HTTP port is 80. ● HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: <code>http://<server>.<domain>.com:9606/ictest</code> Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

Installing optional components

5. Complete the Letter Generator fields in the following table.

Field	Description	Sample entry
Configure Letter Generator	Check this box if you want to configure the Web application for Letter Generator on the target machine. After you check this box, the Configuration Tool displays the other required fields for Letter Generator.	Checkmark in box
HTTPConnector	The HTTP Connector server used by Letter Generator. You must create the HTTP Connector server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server.	HTTPConnector_User1
GhostScript Home	The directory path for the GhostScript executable.	/opt/gs

6. Select **Apply Settings**.

7. Select **OK** in the **Success** dialog box.

8. Select **Exit**.

9. To complete the configuration, perform the following steps to ensure that all Letter Generator services start properly:

a. In the Sun ONE Server installation directory:

- Open the `https-admserv` directory.
- If the directory includes a file called `start-ICEnv.backup`, execute the following command to rename the file:

```
mv start-ICEnv.backup oldstart-ICEnv
```

b. Start the Sun ONE server that hosts the Letter Generator Web application with the following start script:

```
<SunONE_install_dir>/servers/<my_ONE_server>/start
```

c. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.

d. Use the following script to start Tomcat:

- If you selected **Multiple** in the **Tomcat Setup** field:

```
./ictomcat.sh start all
```

- If you selected **Single** in the **Tomcat Setup** field:

```
./ictomcat.sh start docgen
```

Configuring the Letter Generator Web application on AIX

Use these instructions if you plan to host the Letter Generator Web application on an AIX machine.

 **Important:**

To configure the Letter Generator Web application on AIX, you must log in as a user with write permissions on the Web server directories and the Avaya IC installation directories. The root user usually has these write permissions.

To configure the Letter Generator Web application to run on an AIX machine:

1. Stop the IBM HTTP Server that hosts the Letter Generator Web application with the stop script packaged with the Web server:

```
./httpserver.sh stop
```

2. Start the Configuration Tool:

- a. Navigate to `IC_INSTALL_DIR/IC61/bin`

- b. Run `./configure`

If the Configuration Tool is already open, close and re-open it to ensure that the Configuration Tool includes all system changes, such as new servers.

3. Log in with your IC Manager login ID and password.
4. Complete the general fields in the following table.

Field	Description	Sample entry
Tomcat Setup	This option determines how many Tomcat servers the Configuration Tool must configure on the target machine. Tip: Avaya recommends that you use the Multiple option. The Multiple option creates a separate Tomcat server for each Web application. The Single option creates a single Tomcat server that controls all Web applications. For more information, see General fields on the Web tab on page 495.	Multiple
JDK Home	The path to the directory where the Java SDK is installed. For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i> .	<code>/usr/java131</code>
Tomcat Base Port	The port used to configure the following ports: <ul style="list-style-type: none"> • Tomcat HTTP ports for Web applications • Tomcat AJP (Web server connector) ports 	Default: 9600

Installing optional components

Field	Description	Sample entry
Web Server Home	The installation path for the IBM HTTP server instance that hosts the Web application.	/usr/HTTPServer
Web Server Host	The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: Verify the default DNS domain carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none">• HTTP port is 80.• HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, type: http://<server>.<domain>.com:9606/ictest Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

5. Complete the Letter Generator fields in the following table.

Field	Description	Sample entry
Configure Letter Generator	Check this box if you want to configure the Web application for Letter Generator on the target machine. After you check this box, the Configuration Tool displays the other required fields for Letter Generator.	Checkmark in box
HTTPConnector	The HTTP Connector server used by Letter Generator. You must create the HTTP Connector server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server.	HTTPConnector_User1
GhostScript Home	The directory path for the GhostScript executable.	/usr/gs

6. Select **Apply Settings**.

7. Select **OK** in the **Success** dialog box.

8. Select **Exit**.

9. To complete the configuration, perform the following steps to ensure that all Letter Generator services start properly:

a. Start the IBM HTTP Server that hosts the Letter Generator Web application with the following start script:

```
./httpserver.sh start
```

b. Navigate to the `IC_INSTALL_DIR/IC61/bin` directory.

c. Use the following script to start Tomcat:

- If you selected **Multiple** in the **Tomcat Setup** field:

```
./ictomcat.sh start all
```

- If you selected **Single** in the **Tomcat Setup** field:

```
./ictomcat.sh start docgen
```

Editing Letter Generator properties in IC Manager

To configure the server and port number for Letter Generation:

1. In IC Manager, select **Tools > Groups**.
2. Select **IC** in the left pane of the **Group Manager**.
3. Select the **Properties** tab.
4. Select **QUI > Letter Generator** from the **Sections** list.
5. Double-click **ServerNameAndPort**.
6. Set this property to point to the server and port where you deployed the Letter Generator Web application.
For example, if your server is qapc18, and your port is 80, type `qapc18:80`.
7. Select **OK**.

Note:

Close and re-open all agent applications, so your changes take effect.

Configuring a Workflow server for Letter Generator

Create at least one dedicated Workflow server for Letter Generator. The Letter Generator Workflow server must be:

- In the same domain as the HTTP Connector server, or you must configure the Letter Generator domain to failover to the domain that contains the HTTP Connector server.
- On the same physical machine as the Letter Generator Workflow server. The Letter Generator Workflow server uses the data source for your Business Application.

To configure the Workflow server for Letter Generator, perform the steps in the following topics:

1. [Creating a Workflow server for Letter Generator](#) on page 464.
2. [Using workflows for Letter Generator](#) on page 465.

Creating a Workflow server for Letter Generator

Note:

The Letter Generator Workflow server shares the same Windows `temp` file as the Tomcat server used by Letter Generator. You must install the Workflow server and the Web application for Letter Generator on the same physical machine.

To create a Workflow server for Letter Generator:

1. Select **Server > New** in IC Manager.
2. Select **Workflow** from the list of servers. Select **OK**.
3. Select the **General** tab, and complete the fields as shown in the following table:

Field	Recommended entry	Notes
Name	DocGenWorkflowServer	
Domain	Select the Avaya IC domain for the server from the drop-down list.	For example, select Default from the drop-down list if the server is in the Default domain.
Host	Select the machine's IP address from the drop-down list, or type in the IP address if it is not in the list.	When you select the host, IC Manager fills in the fields for Directory, Port, and Executable.

4. Select the **Workflow** tab.
5. From the **IC Data Source** drop-down list, select the data source for your Business Application.

For example, if your Avaya IC system includes Request-based CallCenterQ, the default name for the data source is ccq_request.

You can use the default settings for the Workflow server to get your system up and running. For more detailed information about these parameters and how to customize them for your system, see *IC Administration Volume 1: Servers & Domains*.

6. Select **Apply**.
7. Select **OK**.

Using workflows for Letter Generator

Letter Generator uses the sample workflows in the DocGen project. Avaya IC installs the DocGen project in the following directory on the machine that hosts Workflow Designer:

```
IC_INSTALL_DIR\IC61\design\IC\Flows\Avaya\DocGen
```

The Avaya IC seed data includes compiled sample workflows for this project. When you created the CCQ database, you imported the compiled workflows with the seed data and stored them in the database.

For a complete list of the workflows in the docgen project, including the directories where Avaya IC installs the workflows, see *Avaya Workflow Designer User Guide*.

Configuring Letter Generator for Japanese

To process and view documents in Japanese, perform the steps in the following topics:

1. [Installing Japanese fonts](#) on page 466.
2. [Modifying the Letter Generator configuration files](#) on page 467.
3. [Using Japanese fonts in Letter Generator](#) on page 468.

Note:

The examples in this section use Mincho font. If your Avaya IC system uses a different Japanese font, replace the Mincho information with the appropriate font information.

Installing Japanese fonts

Letter Generator supports Japanese fonts in the following formats:

- True Type Fonts (.ttf)
- True Type Collection (.ttc)
- Adobe type 1 (.pfm)

To install Japanese fonts:

1. If you host Letter Generator on Windows, open a command prompt window:
 - a. Select **Start > Run**.
 - b. Type `cmd` in the **Open** field.
 - c. Select **OK**.
2. From a command prompt, navigate to the Letter Generator directory:
 - Windows, navigate to `IC_INSTALL_DIR\IC61\docgen`
 - Solaris, navigate to `IC_INSTALL_DIR/IC61/docgen`
 - AIX, navigate to `IC_INSTALL_DIR/IC61/docgen`

3. Execute the appropriate command, shown in the following table:

Operating system	Font type	Command
Windows	Adobe type 1 (.pfm)	<code>pfmtoxml.bat <font_dir>/<font_name> <IC_install_dir>/docgen/WEB-INF/.xml</code>
	<ul style="list-style-type: none"> • True Type Fonts (.ttf) • True Type Collection (.ttc) 	<code>ttftoxml.bat <font_dir>\<font_name> "<IC_install_dir>\docgen\WEB-INF\.xml"</code>
Solaris and AIX	Adobe type 1 (.pfm)	<code>pfmtoxml.sh <font_dir>/<font_name> <IC_install_dir>/docgen/WEB-INF/.xml</code>
	<ul style="list-style-type: none"> • True Type Fonts (.ttf) • True Type Collection (.ttc) 	<code>ttftoxml.sh <font_dir>/<font_name> <IC_install_dir>/docgen/WEB-INF/.xml</code>

For example, on a Windows machine where Avaya IC was installed in the default directory and the fonts are stored in the `c:\winnt\fonts` directory, to create the `mincho.xml` file and use the Mincho font, run the following command:

```
ttftoxml.bat c:\winnt\fonts\mincho.ttc c:\Program
Files\Avaya\IC61\docgen\WEB-INF\mincho.xml
```

Tip:

More information about installing fonts is available on the following Website:
<http://xml.apache.org/fop/fonts.html>.

Modifying the Letter Generator configuration files

To modify the Letter Generator configuration files:

1. Edit the following file: `IC_INSTALL_DIR/IC61/docgen/WEB-INF/userconfig.xml`

- a. Open the file in a text editor, such as Notepad.
- b. Add the following text to the file:

```
<font metrics-file="<install_dir>/IC61/docgen/WEB-INF/msmincho.xml" embed-
file="<install_dir>/IC61/mincho.ttc" kerning="yes">
  <font-triplet name="Mincho" style="normal" weight="normal"/>
  <font-triplet name="Mincho" style="normal" weight="bold"/>
  <font-triplet name="Mincho" style="italic" weight="normal"/>
  <font-triplet name="Mincho" style="italic" weight="bold"/>
</font>
```

- c. Save and close the file.

Installing optional components

2. Edit the following file: `IC_INSTALL_DIR/IC61/docgen/xsl/fonts.xml`

a. Open the file in a text editor, such as Notepad.

b. Add the following text to the file:

```
<font name="Mincho">
<style name="normal">
Mincho
</style>
<style name="bold">
Mincho
</style>
<style name="bolditalic">
Mincho
</style>
<style name="italic">
Mincho
</style>
</font>
```

c. Save and close the file.

Using Japanese fonts in Letter Generator

To use Japanese fonts in Letter Generator:

1. Create a letter template that includes Japanese text.
2. In the template editor, select all the text in the template.
3. Set the font to the Japanese font on your system, such as Mincho.
4. Generate and process the documents in Letter Generator.

Installing and configuring a second ICM server

The ICM Server hosts the Web Management conferences between agents and customers. You can install a second ICM Server, for one or both of the following reasons:

- To increase the capacity or load sharing of chat functionality
- To use a secure server for chat escalations from one site but not another

Install the second ICM server on a dedicated machine for scalability. Do not install the second ICM server on the machine that hosts your database software.

If you're setting up a secure ICM, follow the instructions in the section [Configuring SSL security for Web servers \(optional\)](#) on page 295, as well as the instructions below.

You can configure a second ICM server in one of the following ways:

- With a CIRS server for load balancing. In this configuration, users enter the Website on the primary machine and are redirected to an ICM server on a different machine based on the load. For more information, see [Configuring a second ICM server with a CIRS server](#) on page 469.
- Without a CIRS server. In this configuration, each combination of ICM server and Website is independent.

Configuring a second ICM server with a CIRS server

To configure a second ICM server to work with a CIRS server and the website, you must designate the machine that hosts an ICM server and Website combination as the primary server machine.

After you select the primary server machine, perform the steps in the following topics:

1. [Configuring the primary ICM server](#) on page 469.
2. [Configuring the second ICM server](#) on page 470.
3. [Configuring the CIRS server](#) on page 471.
4. [Configuring the CIRS servlet for Website](#) on page 472.
5. [Adding ICM servers to the ICM Bridge](#) on page 474.

Configuring the primary ICM server

To configure the Primary ICM server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Chat > ICM**.
3. Select the ICM table with the same name as the `dsObjectName` in `IC_INSTALL_DIR/IC61/etc/SystemParms.txt`

If the table does not exist, create a new table. For more information, see [Configuring the ICM server](#) on page 282.

Installing optional components

4. Update the fields in the right pane shown in the following table:

Property	Recommended entry
Global ICM Name	Type the value of <code>dsObjectName</code> .
ICM Server Name	Type the fully-qualified domain name of the machine that hosts the primary ICM server.
CIRS Host	Type the hostname of the machine that hosts the primary ICM server.
CIRS Port	Type the port for the CIRS server.

For information on all other fields, see [Configuring the ICM server](#) on page 282.

5. Select **OK**.
6. Restart the ICM server
7. Start the CIRS server.
8. Add the ICM server to the ICM Bridge. For more information, see [Adding ICM servers to the ICM Bridge](#) on page 474.

Configuring the second ICM server

Before you configure the second ICM server, you must do the following:

1. Install and configure secondary Avaya IC servers, including a secondary ORB server, on the machine that will host the second ICM server.

For more information, see [Configuring secondary servers](#) on page 161.

2. Copy the `vesp.imp` file from the machine that hosts the primary server to the following directory on the machine that hosts the secondary servers

`IC_INSTALL_DIR/IC61/etc.`

To configure the second ICM Server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Chat > ICM**.
3. Select **New**.

4. Update the following fields in the right pane shown in the following table:

Property	Recommended entry
Global ICM Name	Type a name for the second ICM server. For example, type icm2 .
ICM Server Name	Type the fully-qualified domain name of the machine that hosts the second ICM server.
CIRS Host	Type the hostname of the machine that hosts the primary ICM server.
CIRS Port	Type the port for the CIRS server.

For information on all other fields, see [Configuring the ICM server](#) on page 282.

5. Select **OK**.
6. Restart the ICM server
7. Start the CIRS server.
8. Add the ICM server to the ICM Bridge. For more information, see [Adding ICM servers to the ICM Bridge](#) on page 474.

Configuring the CIRS server

To configure the CIRS server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Chat > CIRS**.
3. Select the CIRS table with the same name as the `dsObjectName` in `IC_INSTALL_DIR/IC61/etc/cirsParms.txt`
If the table does not exist, create a new table. For more information, see [Configuring the Central Internet Routing service](#) on page 286.
4. In the **Global CIRS Name** field in the right pane, type the value of `dsObjectName` in `IC_INSTALL_DIR/IC61/etc/cirsParms.txt`
For information on all other fields, see [Configuring the Central Internet Routing service](#) on page 286.
5. Select **OK**.
6. Start the CIRS server.

Configuring the CIRS servlet for Website

For more information about Website applications, see [Configuring the Website](#) on page 288.

To configure the CIRS servlet for website:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Website > Website Context**.
3. Create or update the websitecontext record for each Web Management application that chat users must access.
 - a. Right-click in the right pane and check the box next to **Show Advanced Properties**.
 - b. Complete the fields as shown in the following table:

Property	Recommended entry
Global Name	Type the value of dsObjectName in <i>IC_INSTALL_DIR/IC61/comp/website/WEB-INF/web.xml</i> .
ICM Servlets Active	Check this box.
ICM CIRS Servlet Active	Check this box.

For information on all other fields, see [Configuring the Central Internet Routing service](#) on page 286.

4. Select **OK**.
5. Restart each server that hosts a Website application.
6. Start the ICM server.

Configuring an independent second ICM server

Before you configure an independent ICM server, you must do the following:

1. Install and configure secondary Avaya IC servers, including a secondary ORB server, on the machine that will host the second ICM server.

For more information, see [Configuring secondary servers](#) on page 161.

2. Copy the `vesp.imp` file from the machine that hosts the primary server to the following directory on the machine that hosts the secondary servers
IC_INSTALL_DIR/IC61/etc.

After you select the primary server machine, perform the steps in the following topics:

1. [Configuring a second ICM server](#) on page 473.
2. [Disabling the CIRS servlet for Website](#) on page 473.
3. [Adding ICM servers to the ICM Bridge](#) on page 474.

Configuring a second ICM server

To configure an independent second ICM server:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Chat > ICM**.
3. Select **New**.
4. Type a name for the second ICM server in the **Global ICM Name** field.
For information on all other fields, see [Configuring the ICM server](#) on page 282.
5. Select **OK**.
6. Restart the ICM server
7. Add the ICM server to the ICM Bridge. For more information, see [Adding ICM servers to the ICM Bridge](#) on page 474.

Disabling the CIRS servlet for Website

For more information about Website applications, see [Configuring the Website](#) on page 288.

To disable the CIRS servlet for website:

1. In IC Manager, select the **Configuration** tab.
2. From the **Tables** list in left pane, select **Website > Website Context**.
3. Create or update the websitecontext record for each Web Management application that chat users must access.
 - a. Right-click in the right pane and check the box next to **Show Advanced Properties**.
 - b. Complete the fields as shown in the following table:

Property	Recommended entry
Global Name	Type the value of dsObjectName in <i>IC_INSTALL_DIR/IC61/comp/website/WEB-INF/web.xml</i> .
ICM CIRS Servlets Active	Do not check this box.

Installing optional components

4. Select **OK**.
5. Restart each server that hosts a Website application.
6. Start the ICM server.

Adding ICM servers to the ICM Bridge

You add ICM servers to the ICM bridge in the Attribute server configuration. For more information, see [Creating the WebACD server](#) on page 249.

To add the second ICM server to the ICM Bridge:

1. In IC Manager, double-click the Attribute server in the list of servers.
2. Select the **Attribute** tab.
3. Select the **Ellipsis (...)** next to the **ICM Servers** field.
4. In the **ICM Servers** dialog box:
 - a. Select **New**.
 - b. Check **Enabled**.
 - c. In the Host field, type the name and domain of the machine that hosts the ICM server. For example, type TESTBOX.xyzcorp.com.
 - d. Accept the default port number (8103) or change to an available port.
 - e. Select **OK**.

Repeat these steps for each ICM server in your Avaya IC system.

5. Select **OK**.
6. Restart the Attribute server

Installing the SDK for Avaya IC servers

Avaya IC provides a Software Development Kit (SDK) for the Avaya IC servers. The SDK includes all of the files that you require to build your own Avaya IC servers, including:

- Header files
- Libraries
- Sample server project files

To install the SDK:

1. Navigate to the following directory in the Avaya Interaction Center CD-ROM:

Operating system	Directory path
Windows	<CD-ROM_drive>\Utils\Sdk\sdkwin32.zip
Solaris	<CD-ROM_drive>/Solaris/Sdk/sdk.tar
AIX	<CD-ROM_drive>/Aix/Sdk/sdk.tar

2. Copy the compressed SDK file to your Avaya IC directory.
3. Uncompress the file and extract the contents.
4. Verify that the files have been extracted into the folder that you selected. This folder should include C files and a makefile

For more information, see *IC Client and Server Programmer's Design Guide*.

Installing optional components



Appendix A: Using the Configuration Tool

You use the Configuration Tool to perform the following tasks when you install and configure Avaya Interaction Center (Avaya IC):

- Configure the primary server environment and start the primary ORB server.
- Configure secondary server environments and start secondary ORB servers.
- Configure the client environment for the Design & Administration Tools.
- Specify the switch associated with a Telephony server.
- Create and configure Tomcat Web applications for:
 - Web License Manager
 - Web Management Websites
 - Email Template Administration
 - Letter Generator
- Configure database access for:
 - Suggested Response feature of the WACD server
 - Datawake recording feature of the Attribute server
- Configure Outbound Contact Reports.

This section contains detailed information about the Configuration Tool, and information about how to use it when you configure Avaya IC. This section includes the following topics:

- [Configuration Tool basics](#) on page 478.
- [Initial Configuration tab](#) on page 480.
- [Outbound Contact tab](#) on page 491.
- [Web tab](#) on page 492.

Configuration Tool basics

The Configuration Tool works with all operating systems, databases, and web servers supported by Avaya IC.

This section describes basic information you need to know before you use the Configuration Tool. This section includes the following topics:

- [Understanding the required permissions](#) on page 478.
- [Configuration Tool and Web servers](#) on page 478.
- [Backing up configuration files](#) on page 479.
- [Starting the Configuration Tool](#) on page 479.

Understanding the required permissions

When you log in to use the Configuration Tool, you must have a user account with the permissions described in the following table.

Operating system	User account
Windows	Administrator
Solaris	Root user
AIX	Root user

Configuration Tool and Web servers

On some operating systems, you need to stop the Web server before you run the Configuration Tool.

The requirements for Web servers are:

- On Solaris machines, stop the Sun ONE server that hosts the Web License Manager application with the stop script packaged with the Web server:
`<SunONE_install_dir>/servers/<my_ONE_server>/stop`
- On AIX machines, stop the IBM HTTP Server that hosts the Web License Manager application with the stop script packaged with the Web server:
`<IBMHTTP_install_dir>/bin/apachectl stop`
- On Windows machines, you do not need to stop the IIS Web server.

Backing up configuration files

Before the Configuration Tool updates or changes a configuration file, the Configuration Tool backs up those files. The Configuration Tool stores backup copies of all configuration files in the following directory: `bin\config\backup`.

The Configuration Tool makes a backup of the iplanet configuration files for Sun ONE Server in the form of `*.backup`.

Starting the Configuration Tool

To run the Configuration Tool from a command line, you must run the `configure` command from the working directory of `IC_INSTALL_DIR\IC61\bin`. If you run the `configure` command from another directory, the Configuration Tool may not work correctly.

This section includes the following topics:

- [Starting the Configuration Tool in Windows](#) on page 479.
- [Running the Configuration Tool from a command line in Windows](#) on page 479.
- [Running the Configuration Tool from a command line in Solaris and AIX](#) on page 479.

Starting the Configuration Tool in Windows

To start the Configuration Tool in Windows:

- Select **Start > Programs > Avaya Interaction Center 6.1 > Configuration Tool**.

Running the Configuration Tool from a command line in Windows

To run the Configuration Tool from a command line:

1. From a command line, navigate to `IC_INSTALL_DIR\IC61\bin`
2. Type `configure` and press Enter.

Running the Configuration Tool from a command line in Solaris and AIX

To run the Configuration Tool from a command line:

1. From a command line, navigate to `IC_INSTALL_DIR/IC61/bin`
2. Type `./configure` and press Enter.

Initial Configuration tab

When you run the Configuration Tool after you install Avaya IC servers or Design & Administration Tools, the Initial Configuration tab is the only tab available. You use the Initial Configuration tab to perform the following tasks:

- Configure the primary server environment and start the primary ORB server.
- Configure secondary server environments and start secondary ORB servers.
- Configure the client environment for the Design & Administration Tools.
- Specify the switch associated with a Telephony server.

This section includes the following topics that describe the fields on this tab:

- [Primary server fields on the Initial Configuration tab](#) on page 481.
- [Secondary server fields on the Initial Configuration tab](#) on page 484.
- [Client fields on the Initial Configuration tab](#) on page 487.
- [Oracle database fields on the Initial Configuration tab](#) on page 489.
- [DB2 database fields on the Initial Configuration tab](#) on page 490.

Primary server fields on the Initial Configuration tab

Use the primary server fields on the Initial Configuration tab to configure the primary server environment on the machine that hosts the primary ORB server.

The following figure shows the primary server fields on the Initial Configuration tab, including the optional fields to configure a system that includes an Oracle database or a DB2 database.

The screenshot displays the 'Avaya Interaction Center Configuration Tool' window, specifically the 'Initial Configuration' tab. The interface is a standard Windows-style dialog box with a title bar and window controls. The main area contains a series of configuration options:

- Select Mode:** A dropdown menu set to 'Primary'.
- IP Address:** A dropdown menu set to '135.123.17.108'.
- Start Port:** A numeric spinner box set to '9,001'.
- Start ORBServer:** A checked checkbox.
- Telephony Server:** A checked checkbox.
- Telephony Switch:** A dropdown menu set to 'Avaya Definity'.
- Oracle Setup:** A checked checkbox.
- NLS LANG:** A text box containing 'AMERICAN_AMERICA.UTF8'.
- Oracle Home:** A text box containing '/opt/oracle/8.1.7'.
- Oracle SID (Unix Only):** A text box containing 'icutf8db'.
- Oracle Version (Unix Only):** A dropdown menu set to 'Oracle 8'.
- DB2 Setup:** A checked checkbox.
- DB2 Home:** A text box containing '/usr/lpp/db2_07_01'.
- DB2 Instance:** A text box containing 'db2inst1'.
- Locale:** A dropdown menu set to 'EN_US'.

At the bottom of the window, there are three buttons: 'Exit' (with a green checkmark icon), 'Apply Settings' (with a blue downward arrow icon), and 'Help' (with a yellow question mark icon).

Using the Configuration Tool

The following table describes the general fields on the Initial Configuration tab that are visible when you select the Primary mode. For information about when you use the Configuration Tool to configure the primary servers, and the other steps that you must perform to complete the configuration, see [Creating the primary server environment](#) on page 58.

Field	Description	Sample entry
Select Mode	The option you choose from this drop-down list specifies the Avaya IC components that you want to configure with the Configuration Tool. The Primary option in this drop-down list tells the Configuration Tool that you want to configure the core servers, including the primary ORB server.	Primary
IP Address	The IP address for the machine that hosts the primary ORB server. Note: If the primary ORB server runs on a machine with multiple network interface cards, you must select the IP address for the first network interface card on the machine. The primary ORB server cannot run on any other network interface card.	145.170.12.245
Start Port	The port that the primary ORB server uses for communications. You must make sure that the port assignment in the Start Port field is an available port. Type a new port assignment if necessary.	Default: 9001
Start ORB Server	If you place a checkmark in this box, the Configuration Tool automatically starts the primary ORB server on the target machine.	Checkmark in box
Telephony Server	This is an optional field that you select if the target machine hosts a Telephony server. After you select this box, the Configuration Tool displays the Telephony Switch drop-down list.	Checkmark in box
Telephony Switch	The Telephony Switch drop-down list includes all switches that Avaya IC supports. Select the switch with which the Telephony server on the target machine needs to communicate. You must select a switch that is supported for the operating system of the server. For example, do not select a Nortel switch if you plan to host the Telephony server on an AIX machine. For more information about switch support, see <i>IC Installation Planning and Prerequisites</i> .	Avaya Definity

Field	Description	Sample entry
Oracle Setup	This is an optional field that you select if the Avaya IC system includes an Oracle database. After you select this box, the Configuration Tool displays the Oracle configuration fields. For more information, see Oracle database fields on the Initial Configuration tab on page 489.	Check this box.
DB2 Setup	This is an optional field that you select if the Avaya IC system includes a DB2 database. After you select this box, the Configuration Tool displays the DB2 configuration fields. For more information, see DB2 database fields on the Initial Configuration tab on page 490.	Check this box.
Locale	Required for AIX and Solaris only. Do not complete for Windows. The primary locale of the machine that hosts the servers. The drop-down list includes all of the locales supported by the operating system. For a list of the locales supported by Avaya IC, see <i>IC Installation Planning and Prerequisites</i> .	For AIX, select EN_US . For Solaris, select en_US.UTF-8 .

Secondary server fields on the Initial Configuration tab

Use the secondary server fields on the Initial Configuration tab to configure a secondary server environment on every machine that hosts a secondary ORB server. You must configure a secondary server environment on every machine that runs Avaya IC servers, except the machine that hosts the primary ORB server.

The following figure shows the secondary server fields on the Initial Configuration tab, including the optional fields to configure a system that includes an Oracle database or a DB2 database.

The screenshot displays the 'Avaya Interaction Center Configuration Tool' window with the 'Initial Configuration' tab selected. The configuration is set for a 'Secondary' mode. The IP Address is 135.123.17.108, and the Secondary ORB Port is 9,001. The Primary Host Name is 'testbox.avaya.com' and the Primary ORB Port is also 9,001. The IC Login is 'Admin' and the IC Password is masked with '...'. The IC Domain is 'Default'. The 'Start ORBServer' and 'Telephony Server' checkboxes are checked. The 'Telephony Switch' is set to 'Avaya Definity'. The 'Oracle Setup' checkbox is checked, with 'NLS LANG' set to 'AMERICAN_AMERICA.UTF8', 'Oracle Home' at '/opt/oracle/8.1.7', 'Oracle SID (Unix Only)' as 'icutf8db', and 'Oracle Version (Unix Only)' as 'Oracle 8'. The 'DB2 Setup' checkbox is also checked, with 'DB2 Home' at '/usr/lpp/db2_07_01' and 'DB2 Instance' as 'db2inst1'. The 'Locale' is set to 'EN_US'. At the bottom, there are three buttons: 'Exit' (with a green checkmark), 'Apply Settings' (with a blue downward arrow), and 'Help' (with a yellow question mark).

The following table describes the fields on the Initial Configuration tab that are visible when you select the Secondary mode. For information about when you use the Configuration Tool to configure the secondary servers, and the other steps that you must perform to complete the configuration, see [Configuring secondary servers](#) on page 161.

Field	Description	Sample entry
Select Mode	The option you choose from this drop-down list specifies the Avaya IC components that you want to configure with the Configuration Tool. The Secondary option in this drop-down list tells the Configuration Tool that you want to configure a secondary server environment, including a secondary ORB server, on the target machine.	Secondary
IP Address	The IP address for the machine that hosts the secondary ORB server. Note: If the secondary ORB server runs on a machine with multiple network interface cards, you must select the IP address for the first network interface card on the machine. The secondary ORB server cannot run on any other network interface card.	145.170.12.245
Secondary ORB Port	The port on the target machine that the secondary ORB server uses for communications. Because the secondary ORB server is on a different machine from the primary ORB server, the secondary ORB server can use the same port as the primary ORB server. You must make sure that the port assignment in the Start Port field is an available port. Type a new port assignment if necessary.	Default: 9001
Primary Host Name	The name of the machine that hosts the primary ORB server. The primary host name can be the IP Address or fully-qualified domain name of the machine.	coresvr.avaya.com
Primary ORB Port	The port that the primary ORB server uses for communications.	Default: 9001
IC Login	The administrative login ID that you must create for Avaya IC servers. For more information, see Setting up administrative accounts on page 119.	serveradmin
IC Password	The password associated with the IC Login.	admin1
IC Domain	This is the Avaya IC domain that includes the primary ORB server. This domain is typically the Default domain.	Default

Using the Configuration Tool

Field	Description	Sample entry
Start ORB Server	If you place a checkmark in this box, the Configuration Tool automatically starts the secondary ORB server on the target machine.	Checkmark in box
Telephony Server	This is an optional field that you select if the target machine hosts a Telephony server. After you select this box, the Configuration Tool displays the Telephony Switch drop-down list.	Checkmark in box
Telephony Switch	The Telephony Switch drop-down list includes all switches that Avaya IC supports. You must select the switch with which the Telephony server needs to communicate.	Avaya Definity
Oracle Setup	This is an optional field that you select if the Avaya IC system includes an Oracle database. After you select this box, the Configuration Tool displays the Oracle configuration fields. For more information, see Oracle database fields on the Initial Configuration tab on page 489.	Check this box.
DB2 Setup	This is an optional field that you select if the Avaya IC system includes a DB2 database. After you select this box, the Configuration Tool displays the DB2 configuration fields. For more information, see DB2 database fields on the Initial Configuration tab on page 490.	Check this box.
Locale	Required for AIX and Solaris only. Do not complete for Windows. The primary locale of the machine that hosts the servers. The drop-down list includes all of the locales supported by the operating system.	For AIX, select EN_US . For Solaris, select en_US.UTF-8 .

Client fields on the Initial Configuration tab

Use the client fields on the Initial Configuration tab to configure the environment for Design & Administration Tools. You must configure a client environment on every machine that hosts Design & Administration Tools.

The following figure shows the client fields on the Initial Configuration tab.

The screenshot shows the 'Avaya Interaction Center Configuration Tool' window with the 'Initial Configuration' tab selected. The window contains the following fields and controls:

- Select Mode:** A dropdown menu set to 'Client'.
- * Primary Host Name:** A text input field containing 'testbox.avaya.com'.
- Primary ORB Port:** A spin box set to '9,001'.
- * IC Domain:** A text input field containing 'Default'.
- Telephony Switch:** A dropdown menu set to 'Avaya Definity'.
- NLS LANG:** A text input field containing 'AMERICAN_AMERICA.UTF8'.
- Oracle Home:** A text input field containing '/opt/oracle/8.1.7'.
- Oracle SID (Unix Only):** A text input field containing 'icuf8db'.
- Oracle Version (Unix Only):** A dropdown menu set to 'Oracle 8'.
- DB2 Home:** A text input field containing '/usr/lpp/db2_07_01'.
- DB2 Instance:** A text input field containing 'db2inst1'.

At the bottom of the window, there are three buttons: 'Exit' (with a green checkmark icon), 'Apply Settings' (with a blue downward arrow icon), and 'Help' (with a yellow question mark icon).

Using the Configuration Tool

The following table describes the fields on the Initial Configuration tab that are visible when you select the Client mode. For information about when you use the Configuration Tool to configure the design and administration environment, and the other steps that you must perform to complete the configuration, see [Configuring the design and administration environment](#) on page 66.

Field	Description	Sample entry
Select Mode	The option you choose from this drop-down list specifies the Avaya IC components that you want to configure with the Configuration Tool. The Client option in this drop-down list tells the Configuration Tool that you want to configure the design and administration environment on the target machine.	Client
Primary Host Name	The name of the machine that hosts the primary ORB server. The primary host name can be the IP Address or fully-qualified domain name of the machine.	coresvr.avaya.com
Primary ORB Port	The port that the primary ORB server uses for communications.	Default: 9001
IC Domain	This is the Avaya IC domain that includes the primary ORB server. This domain is typically the Default domain.	Default



Important:

You do not need to complete the optional fields for the Telephony server, an Oracle database, a DB2 database, or Locale.

Oracle database fields on the Initial Configuration tab

When you configure a primary server environment, you must also complete the Oracle database fields if your Avaya IC system includes an Oracle database.

Note:

You do not need to complete these fields for a client environment.

The following table includes the fields on the Initial Configuration tab that are visible when you check the **Oracle Setup** box.

Field	Description	Sample entry
Oracle Setup	This option is only required if your Avaya IC system includes an Oracle database. After you select this option, the Configuration Tool displays the following fields.	Checkmark in box
NLS LANG	<p>You must complete this field for Oracle databases on Windows or Solaris.</p> <p>Oracle uses National Language Support (NLS LANG) values to set up language-specific databases. The character set part of the NLS_LANG parameter specifies the character set used by the Data server.</p> <p>Do not use abbreviations in the NLS LANG parameter. For example, do not use "US" to designate American English. For a list of NLS LANG parameters for supported languages, see Specifying the NLS Lang property for Oracle on page 544.</p> <p>The following are examples of NLS Lang properties for English and Japanese:</p> <ul style="list-style-type: none"> ● AMERICAN_AMERICA.UTF8 ● JAPANESE_JAPAN.UTF8 <p>On Solaris, NLS_LANG is specified as an environment variable.</p> <p>On Windows, NLS_LANG is set in the registry under HKEY_LOCAL_MACHINE > SOFTWARE > ORACLE > HOMEn.</p> <p>See the Oracle documentation for more information.</p> <p>Caution: The character set in the NLS LANG parameter must match the character set of your Oracle database. If these character sets are different, strange character conversions and string truncations may result.</p>	AMERICAN_AMERICA.UTF8

Using the Configuration Tool

Field	Description	Sample entry
Oracle Home	The home directory of the Oracle client on the machine that hosts the core servers.	/opt/oracle/8.1.7
Oracle SID (UNIX only)	<i>Oracle databases on Solaris only.</i> The Oracle SID of your database. Note: The Oracle SID field is case-sensitive.	icutf8db
Oracle version (UNIX only)	<i>Oracle databases on Solaris only.</i> The supported version of Oracle that hosts the Avaya IC databases.	Oracle 9

DB2 database fields on the Initial Configuration tab

When you configure a primary server environment or a secondary server environment, you must also complete the DB2 database fields if your Avaya IC system includes a DB2 database on AIX.

Note:

You do not need to complete these fields for a client environment.

The following table includes the fields on the Initial Configuration tab that are visible when you check the **DB2 Setup** box.

Field	Description	Sample entry
DB2 Setup	This option is only required if your Avaya IC system includes a DB2 database on AIX. After you select this option, the Configuration Tool displays the following fields.	Checkmark in box
DB2 Home	Enter the home directory of the DB2 client on the machine that hosts the core servers.	/usr/lpp/db2_07_01
DB2 Instance	Enter the name of the DB2 instance.	db2inst1

Outbound Contact tab

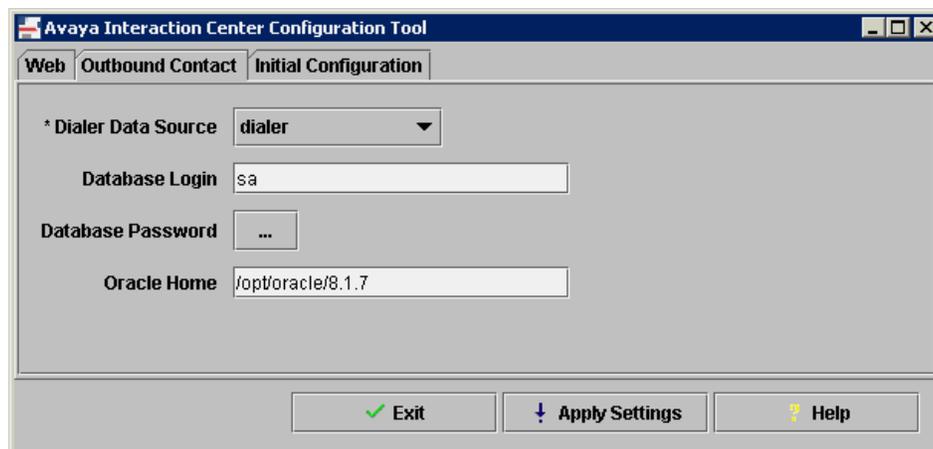
You use the Outbound Contact tab to configure Outbound Contact Reports.

The Outbound Contact tab is only visible if you select the option to run Outbound Contact Reporting when you install the Design & Administration Tools on the target machine.

Tip:

If you do not see the Outbound Contact tab, and you need to configure Outbound Contact Reports on the target machine, re-run the Avaya IC installation and select the option to run Outbound Contact Reporting.

The following figure shows the Outbound Contact tab of the Configuration Tool.



The following table describes the fields on the Outbound Contact tab.

Field	Description	Sample entry
Dialer Data Source	The Dialer data source that you create with the Dialer database. For more information, see Generating the Dialer application and data source on page 227.	dialer
Database Login	A DBA login ID for your Dialer database. Enter a DBA login ID for the database server. Do not use the DBA login for a database client.	sa
Database Password	The password for the DBA login ID.	admin1
Oracle Home	For Oracle databases on Windows or Solaris. Enter the home directory of the Oracle client on the machine that hosts the core servers.	/opt/oracle/8.1.7

Web tab

Use the Web tab of the Configuration Tool on the following:

- Machines that host Web applications to create and configure the Tomcat Web applications for the following Avaya IC components:
 - Web License Manager
 - Web Management Websites
 - Email Template Administration
 - Letter Generator
- Machines that host the WebACD server and Attribute servers to configure database access for:
 - Suggested Response feature of the WebACD server
 - Datawake recording feature of the Attribute server

You can choose to create and configure multiple Tomcat Web applications on the same machine, or to create and configure the Web applications on different machines.

This section includes the following topics:

- [Web tab basics](#) on page 492.
- [General fields on the Web tab](#) on page 495.
- [Web License Manager fields on the Web tab](#) on page 497.
- [Letter Generator fields on the Web tab](#) on page 497.
- [Email Template Administration fields on the Web tab](#) on page 498.
- [Web Management fields on the Web tab](#) on page 499.
- [Advanced properties on the Web tab](#) on page 501.

Web tab basics

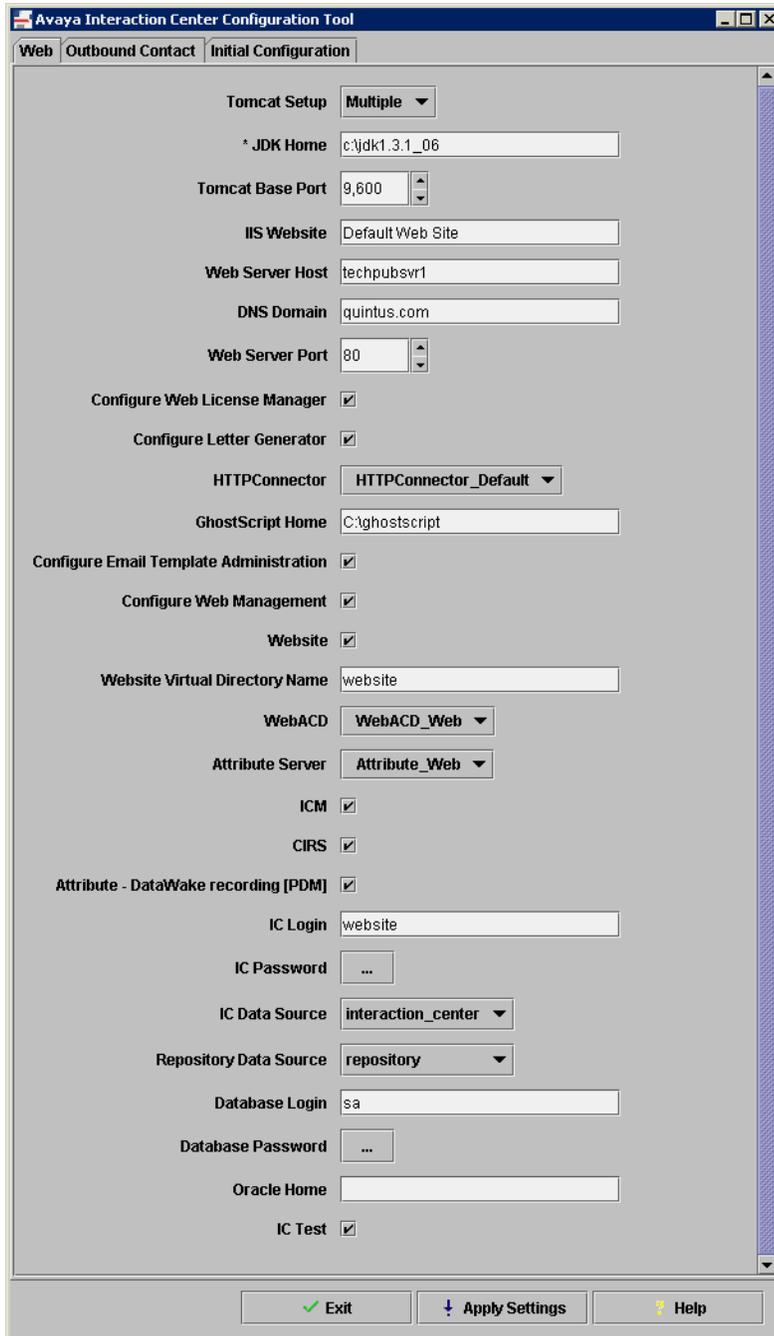
The fields on the Web tab are dynamic and change according to the operating system of the machine on which the Configuration Tool is run.

This section includes figures that show the fields on the Web tab for each operating system that Avaya IC supports. Topics include:

- [Web tab on a Windows machine](#) on page 493.
- [Web tab on a Solaris or AIX machine](#) on page 494.

Web tab on a Windows machine

The following figure shows all available fields on the Web tab of the Configuration Tool when you run the Configuration Tool on a Windows machine.



Using the Configuration Tool

Web tab on a Solaris or AIX machine

The following figure shows all available fields on the Web tab of the Configuration Tool when you run the Configuration Tool on a Solaris or AIX machine.

The screenshot displays the 'Avaya Interaction Center Configuration Tool' window with the 'Web' tab selected. The 'Initial Configuration' section contains the following fields and options:

- Tomcat Setup: Multiple
- * JDK Home: /usr/java131
- Tomcat Base Port: 9,600
- Web Server Home: /usr/HTTPServer
- Web Server Name: qedubaix3.quintus.com
- Web Server Host: qedubaix3
- DNS Domain: quintus.com
- Web Server Port: 80
- Configure Web License Manager:
- Configure Letter Generator:
- HTTPConnector: HTTPConnector_Prompter1
- GhostScript Home: /opt/gs
- Configure Email Template Administration:
- Configure Web Management:
- Website:
- Website Virtual Directory Name: website
- WebACD: WACD_Web
- Attribute Server: Attribute_Web
- ICM:
- CIRS:
- Attribute - DataWake recording [PDM]:
- IC Login: website
- IC Password: ...
- IC Data Source: interaction_center
- Repository Data Source: repository
- Database Login: db2inst1
- Database Password: ...
- Database Host: qedubaix4
- DB2 Port: 50,000
- Oracle SID:
- IC Test:

At the bottom of the window, there are three buttons: 'Exit' (with a green checkmark), 'Apply Settings' (with a blue arrow), and 'Help' (with a yellow question mark).

General fields on the Web tab

The following table describes the fields on the Web tab that apply to all Web applications. The only general field that is not required is the IC Test field.

Field	Description	Sample entry
Tomcat Setup	<p>Required for all Web applications. This option determines how many Tomcat servers the Configuration Tool must configure on the target machine.</p> <p>Tip: Avaya recommends that you use the Multiple option.</p> <p>The Multiple option creates a separate Tomcat server for each Web application. Choose Multiple if the machine hosts more than one Web application, and you want to start and stop all Web applications separately.</p> <p>The Single option creates a single Tomcat server that controls all Web applications. Choose Single if the machine hosts:</p> <ul style="list-style-type: none"> ● Only one Web application. ● More than one Web application and you do not want to start and stop the Web applications separately. 	Multiple
JDK Home	<p>Required for all Web applications. The path to the directory where the Java SDK is installed.</p> <p>For more information about the Java SDK, see <i>IC Installation Planning and Prerequisites</i>.</p>	<p>Windows: C:\jdk1.3.1_06</p> <p>Solaris: /opt/j2sdk1_3_1_06</p> <p>AIX: /usr/java131</p>
Tomcat Base Port	<p>Required for all Web applications. The port used to configure the following ports:</p> <ul style="list-style-type: none"> ● Tomcat HTTP ports for Web applications ● Tomcat AJP (Web server connector) ports 	Default: 9600
Web Server Home	<p><i>Solaris or AIX only.</i></p> <p>The installation path for the Sun ONE™ Server or IBM HTTP server instance that hosts the Web application.</p>	<p>Solaris: /opt/iplanet</p> <p>AIX: /usr/HTTPServer</p>

Using the Configuration Tool

Field	Description	Sample entry
IIS Website	<i>Windows only.</i> The name of the IIS Web server that the Web application will use. Tip: For a localized version of IIS, type the localized name for the IIS Web server.	Default Web Site
Web Server Name	<i>Solaris only.</i> The root name of the server as found in the Sun ONE™ Server home directory. Note: Do not include <code>https-</code> in the Web server name.	testbox.xyzcorp.com
Web Server Host	Required for all Web applications. The name of the machine that hosts the Web server. Do not include the DNS domain.	testbox
DNS Domain	Required for all Web applications. The network (DNS) domain of the machine that hosts your Web server. Do not enter an Avaya IC domain. Note: The Configuration Tool automatically enters a default DNS domain. Check this default entry carefully to ensure that it is correct.	xyzcorp.com
Web Server Port	Required for all Web applications. The port that your Web server uses for communication. Make sure that the port matches the protocol used by your Web server for communication. The default ports are: <ul style="list-style-type: none"> • HTTP port is 80. • HTTPS port is 443. Do not change the default port unless you assign a different port to the Web server.	Default: 80
IC Test	Optional. IC Test is a Web application that you can use to test your Tomcat configuration. If you install multiple versions of Tomcat, the Configuration Tool creates an IC Test application on each version of Tomcat. The Configuration Tool also creates a separate Tomcat server to host IC Test. To access IC Test, use the Tomcat HTTP port in the URL. For example, enter: <code>http://<server>.<domain>.com:9606/ictest</code> Note: The port number is not required if you install a single version of Tomcat, or access IC Test from the separate Tomcat server for IC Test.	Checkmark in box

Web License Manager fields on the Web tab

The following table describes the fields on the Web tab that are unique to Web License Manager. In addition to the fields in this table, you must also complete the required general fields to configure Web License Manager.

For information about when you use the Configuration Tool to configure Web License Manager, and the other steps that you must perform to complete the configuration, see [Installing Avaya IC licenses](#) on page 175.

Field	Description
Configure Web License Manager	Check this box if you want to configure the Web application for the Web License Manager on the target machine.

Letter Generator fields on the Web tab

The following table describes the fields on the Web tab that are unique to Letter Generator. In addition to the fields in this table, you must also complete the required general fields to configure Letter Generator.

For information about when you use the Configuration Tool to configure Letter Generator, and the other steps that you must perform to complete the configuration, see [Configuring Letter Generator](#) on page 453.

Field	Description	Sample entry
Configure Letter Generator	Check this box if you want to configure the Web application for Letter Generator on the target machine. After you check this box, the Configuration Tool displays the other required fields for Letter Generator.	Checkmark in box

Using the Configuration Tool

Field	Description	Sample entry
HTTPConnector	The HTTP Connector server used by Letter Generator. You must create the HTTP Connector server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server.	HTTPConnector_User1
GhostScript Home	The directory path for the GhostScript executable.	Windows: C:\ghostscript Solaris: /opt/gs AIX: /usr/gs

Email Template Administration fields on the Web tab

The following table describes the fields on the Web tab that are unique to Email Template Administration. In addition to the fields in this table, you must also complete the required general fields to configure Email Template Administration.

For information about when you use the Configuration Tool to configure Email Template Administration, and the other steps that you must perform to complete the configuration, see [Configuring Email Template Administration](#) on page 328.

Field	Description
Configure Email Template Administration	Check this box if you want to configure the Web application for Email Template Administration on the target machine.

Web Management fields on the Web tab

The following table describes the fields on the Web tab that you use to:

- Configure the Website Web application for Web Management
- Configure database access for:
 - Suggested Response feature of the WACD server
 - Datawake recording feature of the Attribute server

In addition to the fields in this table, you must also complete the general fields that are required for the target machine. For more information, see [General fields on the Web tab](#) on page 495.

For information about when you use the Configuration Tool to configure Web Management, and the other steps that you must perform to complete the configuration, see [Configuring Web Management services](#) on page 257.

Field	Description	Sample entry
Configure Web Management	<p>Check this box if you want to configure Web Management services on the target machine. After you check this box, the Configuration Tool automatically:</p> <ul style="list-style-type: none"> ● Displays the other Web Management fields ● Checks the following boxes: <ul style="list-style-type: none"> - Website - ICM - CIRS - Attribute - DataWake recording (PDM) 	Checkmark in box
Website	<p>Creates the Website Web application and performs other tasks that are required to configure a Web Management Website on the target machine. After you check this box, the Configuration Tool displays the following required fields for the Website:</p> <ul style="list-style-type: none"> ● Website Virtual Directory Name ● WebACD ● Attribute Server 	Checkmark in box
Website Virtual Directory Name	The name of the virtual directory for the Website.	website

Using the Configuration Tool

Field	Description	Sample entry
WebACD	The WebACD server in your Avaya IC system. You must create the WebACD server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the WebACD server on page 249.	WebACD_web
Attribute Server	The Attribute server that the Datawake plug-in uses. You must create the Attribute server before the Configuration Tool can include the server in the drop-down list. If the list does not include the server, close the Configuration Tool and create the server. For more information, see Creating the Attribute server on page 252.	Attribute_web
ICM Service	Configures the ICM server and related components on the target machine. For more information, see Configuring the ICM server on page 282.	Checkmark in box
CIRS Service	Configures the CIRS server and related components on the target machine. For more information, see Configuring the Central Internet Routing service on page 286.	Checkmark in box
Attribute - DataWake recording (PDM)	Configures the DataWake recording feature of the Attribute server.	Checkmark in box
IC Login	Use the website account that you imported into the database with the seed data. If you have not already done so, change the default password for this account. For more information, see <i>IC Administration Volume 2: Agents, Customers, & Queues</i> . Note: Do not use the Administrator account for IC Manager or any other account for which the password may change.	website
IC Password	The password used by the IC Login.	website
IC Data Source	The Interaction Center data source that you create with the Interaction Center application for the CallCenterQ database. For more information, see Generating the Interaction Center application on page 109.	interaction_center

Field	Description	Sample entry
Repository Data Source	The Repository data source that you create with the repository application for the IC Repository database. For more information, see Generating the IC Repository application on page 98.	repository
Database Login	Enter a DBA login ID for the database server. Note: Do not use the DBA login for a database client on a DB2 database.	SQL Server: sa Oracle: sys DB2: db2inst1
Database Password	The password for the DBA login ID.	admin
Database Host	<i>Solaris or AIX only.</i> The host name of the machine that hosts your database server.	testbox.xyzcorp.com
DB2 Port	<i>DB2 databases on AIX only.</i> The port that the target machine uses to communicate with the DB2 database.	Default: 50,000
Oracle SID	<i>Oracle databases on Solaris only.</i> The Oracle SID of your database. Note: The Oracle SID field is case-sensitive.	icutf8db
Oracle Home	<i>Oracle databases only.</i> The home directory of the Oracle client on the machine that hosts the Web Management servers.	SQL Server: leave empty Oracle: C:\Oracle\Ora81

Advanced properties on the Web tab

The **Web** tab includes advanced properties that specify the following properties for the Java Virtual Machine:

- Minimum Heap size and maximum Heap size
- Minimum Stack size and maximum Stack size

The fields that the Configuration Tool displays for the advanced properties depend upon the value you choose for Tomcat setup and which Web applications you select. The sample entries provided are the default values.

Using the Configuration Tool

Tip:

Configure the advanced properties only if you expect a high volume of contacts or access to the Web application. For example, configure the advanced properties for the Website and the ICM server if you expect a high volume of chat contacts from the customer Website. For information about performance and contact volume, see the benchmarking information available through an Avaya representative.

This section describes the advanced properties on the **Web** tab and how to access those properties. Topics include:

- [Accessing the advanced properties](#) on page 502.
- [Advanced properties](#) on page 502.
- [Recommended settings for the advanced properties](#) on page 503.

Accessing the advanced properties

To access the advanced properties on the **Web** tab of the Configuration Tool:

1. Right-click in an empty space on the **Web** tab.
2. Check the box next to **Show Advanced Properties**.

Advanced properties

The following table describes the fields on the **Web** tab for advanced properties.

Field	Description	Sample entry
Tomcat JVM Options	Available only when you select the following: <ul style="list-style-type: none">● Tomcat Setup: Single● Configure box for one or more Web applications Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k
Web License Manager JVM Options	Available only when you select the following: <ul style="list-style-type: none">● Tomcat Setup: Multiple● Configure Web License Manager Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k
Letter Generator JVM Options	Available only when you select the following: <ul style="list-style-type: none">● Tomcat Setup: Multiple● Configure Letter Generator Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k

Field	Description	Sample entry
Email Template Administration JVM Options	Available only when you select the following: <ul style="list-style-type: none"> ● Tomcat Setup: Multiple ● Configure Email Template Administration Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k
Website JVM Options	Available only when you select the following: <ul style="list-style-type: none"> ● Tomcat Setup: Multiple ● Configure Website Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k
ICM JVM Options	Available only on Windows, when you select the following: <ul style="list-style-type: none"> ● Tomcat Setup: Multiple ● ICM Service Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k
CIRS JVM Options	Available only when you select the following: <ul style="list-style-type: none"> ● Tomcat Setup: Multiple ● CIRS Service Entries must use the following format: -<min_heap> -<max_heap> -<thread_stack>	Default: -Xms32m -Xmx64m -Xss64k

Recommended settings for the advanced properties

The recommended tuning parameters in *IC Administration Volume 1: Servers & Domains* also includes some recommended settings for the advanced properties.

After you install the development Avaya IC system as described in this document:

1. Review those tuning parameters.
2. Verify the expected contact volume in the production system.
3. Test the recommended settings for the tuning parameters to find the optimal settings for the production system.

Using the Configuration Tool

■ ■ ■ ■ ■ ■

Appendix B: Troubleshooting

The following troubleshooting is available for Avaya™ Interaction Center (Avaya IC). Additional troubleshooting information is available in the documentation for each Avaya IC component. If you encounter an issue not in the documentation, contact Avaya CRM Technical Support.

- [General troubleshooting problems and solutions](#) on page 506.
- [Troubleshooting the Configuration Tool](#) on page 508.
- [Troubleshooting the Data server](#) on page 509.
- [Troubleshooting the Workflow server](#) on page 510.
- [Troubleshooting the refresh in IC Manager](#) on page 510.
- [Troubleshooting the ICM server](#) on page 511.
- [Troubleshooting Web Management](#) on page 516.
- [Troubleshooting DataWake](#) on page 522.
- [Troubleshooting Outbound Contact Management](#) on page 523.
- [Troubleshooting Business Advocate](#) on page 524.
- [Troubleshooting Letter Generator](#) on page 526.
- [Troubleshooting agent issues](#) on page 527.
- [Troubleshooting the secondary ORB configuration](#) on page 529.
- [Troubleshooting Avaya FTSE](#) on page 529.
- [Troubleshooting Windows configuration](#) on page 536.
- [Uninstalling Avaya IC](#) on page 536.
- [Uninstalling FTSE](#) on page 541.

Note:

Always consult the log files for information that can assist you in troubleshooting the problem. Always retain the relevant log files until you have resolved the problem.

General troubleshooting problems and solutions

The following table contains a series of common problems that can occur during Avaya IC installation and configuration. This information is in addition to the more specific information in the other topics of this appendix.

Problem	Solution
The Avaya IC installation on Solaris does not display anything on the monitor or stops abruptly.	<ul style="list-style-type: none"> ● Is the <code>DISPLAY</code> property set? ● Does <code>/var/tmp</code> have sufficient space
The Avaya IC installation on Solaris does not display anything on the monitor or stops abruptly.	<ul style="list-style-type: none"> ● Is the <code>DISPLAY</code> property set? ● Does <code>/tmp</code> have sufficient space
Avaya IC requests fail with Timeout errors.	<p>If you change the system clock in large increments (over 2-3 seconds per minute) when IC is running, IC requests may fail with "Timeout" errors.</p> <p>Do not change the system in large increments when IC is running. Some commercial time synchronization products may provide gradual clock corrections over time. We recommend that you take advantage of such features if possible. For more information, see <i>IC Installation Planning and Prerequisites</i>.</p>
Avaya Agent shows an error when an agent logs in.	Did you assign the correct data source for the IC data source of the Workflow server that processes events for the agent?
Avaya Agent menu leaves blank space on Avaya Agent when an agent clicks off the menu.	<p>Windows XP Professional does not repaint display correctly.</p> <p>To repaint and display the missing area:</p> <ol style="list-style-type: none"> 1. Minimize Avaya Agent. 2. Restore Avaya Agent to full size.
The Start menu for Windows XP Professional displays behind Avaya Agent if Avaya Agent is set to Always On Top.	<p>Windows XP Professional does not handle Always on Top setting correctly.</p> <p>To view and access the Start menu for Windows XP Professional, perform one of the following:</p> <ul style="list-style-type: none"> ● Minimize Avaya Agent. ● Select the Avaya Agent Start menu and disable Always On Top. If you choose this option, you must enable Always on Top again, if you do not want other applications to open on top of Avaya Agent.

Problem	Solution
<p>The ICM server is running, but my customer chat cancels out saying that the lines are busy.</p>	<ul style="list-style-type: none"> ● The Attribute Server may not have established communication properly. Stop and restart the ICM server. ● Check the ICM server configuration on the Attribute tab of the Attribute server. Make sure that this configuration includes the ICM server on the machine that hosts the Website where the customer is attempting to chat with an agent.
<p>The Web Agent does not appear on the agent desktop, even though Avaya Agent is running.</p>	<ul style="list-style-type: none"> ● Make sure that the agent desktop knows the location of the Paging server. In IC Manager, set the Agent/Desktop/WAC/Server property to the fully-qualified domain name of the machine that hosts the Paging server.
<p>The Web Agent appears, but the WACD light is green and the IC Email server light is Red.</p>	<p>Did you start the WebACD server before the License server? If so, the WebACD server cannot access your Avaya IC license. Stop and restart the WebACD server.</p>
<p>Shared Browsing with customer does not work. Chat applet on Website displays error message advising that Java Plugin is enabled and requesting that the user to disable it for Shared browsing to work correctly.</p>	<p>Customer has Sun Java Plug-in enabled. To use Shared Browsing with the chat applet, the customer must disable the Sun Java Plug-in and enable the Java Virtual Machine.</p>
<p>The Alarm Monitor in IC Manager displays the following alarm: "Could not resolve queue pkey or agent for queuing the contact."</p>	<p>The update_qw_cache workflow did not run.</p> <ul style="list-style-type: none"> ● In Workflow Designer, build and reload this workflow. ● Confirm that you configured this workflow in the synchronous startup flows for the Workflow servers that process chat and email contacts. For more information, see Creating a Workflow server for Web Management on page 274.
<p>The Alarm Monitor in IC Manager displays the following alarm: "approverqueue@DefaultTenant" may not have been created or update_qw_cache workflow may not have run.</p>	<p>Either the queue does not exist or you must modify the workflow with the correct queue where the email contacts for approval have to be routed.</p> <ul style="list-style-type: none"> ● In IC Manager, confirm that you have created a queue where email contacts for approval can be routed. If not, create the queue. ● In Workflow Designer, open the Qualify Email workflow, confirm that the ApprovalQueueID property in the Approval Queue/Agent block includes the ID of the email approval queue. Build and reload the workflow. ● Confirm that you configured the synchronous startup flows for the Workflow servers that process web and email contacts. For more information, see Creating a Workflow server for Web Management on page 274.

Troubleshooting the Configuration Tool

The following table contains problems you may encounter with the Avaya IC Configuration Tool.

Problem	Recommended Solution
<p>Cannot access the Initial Configuration tab again to update or change the values chosen to configure the server or client environment.</p>	<p>To access the Initial Configuration tab after you have configured the server or client environment on a machine:</p> <ol style="list-style-type: none"> 1. Rename the vesp.imp file in <code>IC_INSTALL_DIR\IC61\etc</code> to <code>vesp_old.imp</code>. 2. Open the Configuration Tool.
<p>Apply Settings is not enabled in the Configuration Tool.</p>	<p>Make a change to a field in the Configuration Tool. Apply Settings should be enabled. If Apply Settings is still not enabled, close and re-open the Configuration Tool.</p>
<p>Cannot start a service for a Web application with the <code>httpserver.sh start</code> script.</p>	<p>The <code>../HTTPServer/conf.httpd.conf</code> file includes multiple instances of <code>ictomcat.cfg</code>. Open the file in a text editor and remove the multiple entries for <code>ictomcat.cfg</code>. Restart the IBM http server with the <code>httpserver.sh start</code> script, as described in Starting and stopping IBM http Web server on page 157.</p>
<p>Some service requests timeout without completing. For example, the ORB server or Avaya IC ORB Service 6.1 do not start automatically on a Windows machine.</p>	<p>If your Avaya IC system uses Tardis as a time synchronization utility, Tardis may make large time changes at unpredictable times, instead of gradual adjustments. The large changes can cause some service requests to time out. For example, the ORB server and ORB NT service may not start automatically when you restart the machine. To avoid this timeout problem with Tardis, set the time adjustment increments in milliseconds, as follows:</p> <ol style="list-style-type: none"> 1. From the Windows Control Panel, open Tardis. 2. Adjust the following settings: <ul style="list-style-type: none"> - For Maximum correction allowed, set in a range from a minimum of 50 milliseconds to a maximum of 500 milliseconds - For How often the time is set, set to Every Minute <p>For more information, see the Online Help provided with Tardis.</p>

Troubleshooting the Data server

The following table contains a problem you may encounter when you configure the Data server.

Problem	Description	Recommended Solution
<p>IC Manager displays the following error message: "Cannot find implementation".</p>	<p>IC Manager has not updated one of the following servers with the Data server configuration:</p> <ul style="list-style-type: none"> ● ORB Server ● Directory Server 	<ol style="list-style-type: none"> 1. Right-click on the ORB Server. 2. Select Update. 3. Start the Data server. <p>If you get the same message:</p> <ol style="list-style-type: none"> 1. Stop and start the Directory Server. 2. Start the Data server. <p>Note: Never stop and start the ORB server in IC Manager.</p>
<p>The Alarm Manager displays the following error message: "ld.so.1: /dbspaces2/subhag/build07/Avaya/IC61/bin/qorasrv: fatal: libcIntsh.so.8.0: open failed: No such file or directory".</p>	<p>ORACLE_HOME is set to the wrong value.</p>	<p>Use the Configuration Tool to set ORACLE_HOME to the correct value.</p>
<p>Data server fails for an Avaya IC system that includes an Oracle database.</p>	<p>Log file for the Data server includes the following error: OCI Error: ORA-04031</p>	<p>Increase the value for the shared pool size. The shared pool size is a configuration parameter for the Oracle database.</p>

Troubleshooting the Workflow server

The following table contains a problem you may encounter when you configure the Workflow server.

Problem	Description	Recommended Solution
Workflow server cannot assign to another Avaya IC server. For example, the Workflow server cannot assign to an ADU server.	<ul style="list-style-type: none"> ● The channel configuration of the Workflow server is set to "Server type". ● The name of the second Avaya IC server is identical to the server type. 	<ol style="list-style-type: none"> 1. Rename the other server, following the Server naming guidelines on page 128. 2. Restart the Workflow server. 3. Verify that the Workflow server can assign to the other server.

Troubleshooting the refresh in IC Manager

If you do not receive a Success message after you select **Manager > Refresh** in IC Manager, perform the following steps to troubleshoot the problem. Attempt to refresh the Directory server after each step.

1. Stop and then restart the Directory server.
2. If you still do not receive a Success message, stop and then restart the Data server.
3. If you still do not receive a Success message, check the connections to the database.
4. If you still do not receive a Success message, exit IC Manager, then log back in.

Troubleshooting the ICM server

The following table contains some problems you may encounter with the ICM server.

Problem	Description	Recommended Solution
<p>Chat failure - Applet Download</p>	<p>This problem can display several symptoms, including:</p> <ul style="list-style-type: none"> ● When you initiate a chat session from the Website, the Chat applet does not download. ● Chat applet window shows HTTP 404 error. ● In Web browser, the following URL gives a 404 error <code>http://<server_name>/icm/blank.html.</code> 	<p>You must configure the Chat applet download virtual directory on the Website:</p> <ol style="list-style-type: none"> 1. Re-run the Configuration Tool on the machine that hosts the ICM server. 2. In the Web tab: <ul style="list-style-type: none"> - From the Configuration Type drop-down list, select Everything or External Web Server. - Check the ICM Service box. - For Windows, in the IIS Default Site type the name of the IIS Web Site where you want to configure the chat download directory. - For Solaris, in the Web Server Name field, type the name of Sun ONE web server where you want to configure the chat download directory. - For Sun ONE server, make sure the Web Server Home field includes the root installation directory of the Web server. - Select Apply Settings.
<p>Chat failure - Connections</p>	<p>This problem can display several symptoms, including:</p> <ul style="list-style-type: none"> ● When you initiate a Chat contact from the Website, Chat applet displays connection failure message such as "Error in connecting to server". ● <code>icmlog.txt</code> file includes a Java Bind Exception for the Caller Port (9502), Agent Port (9501), or ICM Bridge Port (9503). ● Avaya Agent displays error message when trying to connect to ICM server. 	<p>The ICM server is not running. Start the ICM server:</p> <ul style="list-style-type: none"> ● For Windows, from the Services Control Panel, start Avaya IC ICM Service 6.1 ● For Solaris, run the following shell script: <code>../bin/icm.sh</code> ● For AIX, run the following shell script: <code>../bin/icm.sh</code>

Troubleshooting

Problem	Description	Recommended Solution
Chat failure - Login Connections	<p>This problem can display several symptoms, including:</p> <ul style="list-style-type: none"> ● ICM server is running but cannot log into Avaya IC core servers. ● <code>icmlog.txt</code> file may include the following repeated message: <pre>initToolkit@IcmParmMgr - Error: Toolkit Login Failed</pre> 	<p>ICM server may have an invalid login in the <code>systemParms.txt</code> file or the Toolkit environment may not be properly configured.</p> <ol style="list-style-type: none"> 1. Verify that <code>AVAYA_IC_HOME</code> system variable is set to <code><install_dir>IC61</code>. 2. Verify that the Avaya IC core servers are up and running. 3. Verify that the <code>vesp.imp</code> configuration file is up-to-date in the <code>IC_INSTALL_DIR\IC61\etc</code> directory. 4. If necessary, re-run the Configuration Tool on the machine that hosts the ICM server, making sure that the IC Login and IC Password fields contain valid information. 5. Restart the ICM server: <ul style="list-style-type: none"> - For Windows, from the Services Control Panel, start Avaya IC ICM Service 6.1 - For Solaris, run the following shell script: <code>../bin/icm.sh</code> - For AIX, run the following shell script: <code>../bin/icm.sh</code>
Chat failure - Connections	<p>This problem can display several symptoms, including:</p> <ul style="list-style-type: none"> ● ICM server is running but is unable to bind to its service ports (9501-9520). Another server is using these ports. ● ICM server or another java process may have been started while another ICM server was running (either as a Windows service or Java application). 	<p>To resolve this problem:</p> <ol style="list-style-type: none"> 1. Stop all instances of the ICM service or <code>icm java</code> application (<code>javaw.exe</code>). Note: Be careful terminating the ICM java applications. You must determine which <code>javaw.exe</code> process represents the ICM. 2. Restart the ICM server: <ul style="list-style-type: none"> - For Windows, from the Services Control Panel, start Avaya IC ICM Service 6.1 - For Solaris, run the following shell script: <code>../bin/icm.sh</code> - For AIX, run the following shell script: <code>../bin/icm.sh</code> 3. Reconfigure the ICM ports as described in Changing the default ICM service ports on page 35. Then restart the ICM server.

Problem	Description	Recommended Solution
<p>Chat failure - No Resources</p>	<p>This problem can display several symptoms, including:</p> <ul style="list-style-type: none"> ● When you initiate a chat session from the Website, the Chat applet displays an establishing connection message then hangs. ● Chat applet displays an establishing connection message, then displays "Missing Phrase" repeatedly. ● The <icm_name>_website.log file contains error messages indicating a problem with the PDM. <p>The ICM server is running but cannot read the configuration data from database due to PDM initialization failure or PDM query error.</p> <p>The PDM file may not be properly configured, the database login credentials may be incorrect, database client software may be improperly configured, or the Data server or Database server may be down.</p>	<p>To resolve this problem:</p> <ul style="list-style-type: none"> ● Verify that the Data server is running. ● Verify that the Database server is running: <ul style="list-style-type: none"> - For SQL Server, verify that the SQL Server DSNs are configured correctly and that the Database application is running. - For Oracle, verify that the Oracle client software is installed and that the Oracle Service Name is correctly configured on the client. - For DB2, verify that the DB2 client software is installed. ● Restart the Tomcat server that hosts your Website application, as described in Starting and stopping Avaya IC services on page 154: <p>If these do not resolve the problem:</p> <ul style="list-style-type: none"> ● Re-run the Configuration Tool on the machine that hosts the ICM server with the following information In the Web tab: <ul style="list-style-type: none"> - Make sure the IC Login and IC Password fields contain a valid Avaya IC login and password. - Make sure the Database Login and Database Password fields contain a valid database login and password. Type a DBA login ID for the database server. Do not use the DBA login for a database client. - Check Configure Website. - Select Apply Settings.

Troubleshooting

Problem	Description	Recommended Solution
<p>Chat failure - System Out of Service</p>	<ul style="list-style-type: none"> ● When you initiate a chat session from the Website, the Chat applet displays a message stating that the server connection is established, then displays a "System is Out of Service" message. ● <code>icmllog.txt</code> file contains an "Agent Router Not Ready" error. ● The Alarm Monitor in IC Manager displays an "Error calling WACD Assign" alarm. 	<p>The ICM server is running, but the ICM Bridge in the Attribute server, or the WebACD server is not available.</p> <ul style="list-style-type: none"> ● In IC Manager, start the Attribute server. The Attribute Server will attempt to start the WebACD server. <p>ICM server is running but the ICM Bridge has not been configured to connect to the ICM.</p> <ul style="list-style-type: none"> ● See Creating the Attribute server on page 252. <p>ICM, Attribute, and WebACD servers are running and the ICM Bridge has been configured, but the ICM Bridge cannot login, or can log-in but cannot connect to the WebACD.</p> <ul style="list-style-type: none"> ● See Creating the Attribute server on page 252. ● Verify that the IC Login name and password in the ICM Bridge are valid. Re-type password if necessary. ● Verify that the IC Login is in the same Avaya IC domain as the WebACD server. <p>If the IC Domain is different and cannot be changed, make sure the domain of the WebACD server is in the failover path domain of the IC Login.</p>
<p>Transcript failure - Transcript not sent</p>	<p>Transcripts from completed chats are not sent to callers.</p>	<p>The default SMTP server for the transcripts has not been set.</p> <ul style="list-style-type: none"> ● Set the SMTP Host parameter of the ICM server. See Configuring the ICM server on page 282. ● Restart the ICM server: <ul style="list-style-type: none"> - For Windows, from the Services Control Panel, start Avaya IC ICM Service 6.1 - For Solaris, run the following shell script: <code>../bin/icm.sh</code> - For AIX, run the following shell script: <code>../bin/icm.sh</code>

Understanding ICM server configuration files

The ICM server uses the configuration files in the following table.

File Name	File Location	Description
systemParms.txt	<i>IC_INSTALL_DIR</i> \IC61\etc\systemParms.txt	The ICM server uses this bootstrap file to log into Avaya IC Core servers. Use the Configuration Tool to update this file.
pdm.xml	<i>IC_INSTALL_DIR</i> \IC61\etc\pdm.xml	This property configuration database access file contains database and Data server configuration information. Use the Configuration Tool to update this file.
cirssystemParms.txt	<i>IC_INSTALL_DIR</i> \IC61\etc\cirssystemParms.txt	The CIRS server uses this bootstrap file to log into Avaya IC Core servers. Use the Configuration Tool to update this file.
vesp.imp vespidl.pk	<i>IC_INSTALL_DIR</i> \IC61\etc\vesp.imp <i>IC_INSTALL_DIR</i> \IC61\etc\vespidl.pk	Avaya IC server configuration files. The machine that hosts the ICM server must have copies of these files.

Understanding ICM server log files

The ICM server uses the log files in the following table.

File Name	File Location	Description
icmlog.txt	<i>IC_INSTALL_DIR</i> \IC61\logs\icmlog.txt	This file is the main log file for the ICM server. This file contains server and connectivity status and call events.
icmlog.txt - icmlocalparms.txt	<i>IC_INSTALL_DIR</i> \IC61\logs\icmlog.txt - icmlocalparms.txt	This file is a temporary log file used by the ICM server. Do not edit this file.
<icm>_website.log	<i>IC_INSTALL_DIR</i> \IC61\logs\icm_website.log	This file is the main log file for the Website. <icm> is the value of the <i>dsObjectName</i> property in the <i>systemParms.txt</i> file.
<icm>_*.log	<i>IC_INSTALL_DIR</i> \IC61\logs\icm_*.log	All other log files generated by the integration of the ICM server and the Avaya IC servers.

Troubleshooting Web Management

This section includes the following topics:

- [Troubleshooting Website pages](#) on page 516
- [Troubleshooting Web Management integration](#) on page 519
- [Understanding Web Management configuration files](#) on page 521
- [Understanding Web Management log files](#) on page 521

Troubleshooting Website pages

The following table contains some problems you may encounter with Website pages.

Problem	Description	Recommended Solution
Cannot Access Pages	See an error in browser, such as Host Name Not Resolved or Cannot Find Server.	Confirm the following: <ul style="list-style-type: none"> ● Web server has started. Restart Web server, such as IIS, Sun ONE server or IBM http server. ● Tomcat servers have started. See Starting and stopping Avaya IC services on page 154. ● Verify that the password you used for the IC Password field of the Configuration Tool when you configured the Website has not expired. See Configuring Web Management services on page 257.

Problem	Description	Recommended Solution
Cannot Access Pages	Browser is having DNS problems resolving location of web server.	<p>To resolve this problem:</p> <ol style="list-style-type: none"> 1. Test for DNS issues by trying to access the home page of the Web server at the following URL: <code>http://<server>.<domain>.com</code> 2. Test for DNS issues by trying to access home page of Web server with its IP address: <code>http://123.123.123.123</code> 3. Follow the instructions in <i>IC Installation Planning and Prerequisites</i> for configuring DNS resolution. <ul style="list-style-type: none"> ● Check to see if your Web browser proxy settings are interfering with host name resolution. ● Consult your Network Administrator about the DNS resolution of the Web server.
Cannot Access Pages	<ul style="list-style-type: none"> ● Website did not initialize properly and has redirected browser to invalid URL. ● URL in Web browser contains the word "null" ● <code>website.log</code> file contains PDM error messages 	<p>The PDM file may not be properly configured, the database login credentials may be incorrect, database client software may be improperly configured, or the Data server or Database server may be down.</p> <p>See Chat failure - No Resources on page 513 for solutions.</p>
Public Website - Blank start page	<ul style="list-style-type: none"> ● Trying to access the public website shows a blank start page containing just the Avaya logo. ● Web browser displays a "website.pages.startpage" metadata error. ● Web browser displays a "website.pages.public" metadata error.st ● Web browser displays a null pointer exception error message. 	<p>PDM file is not properly configured or database services are unavailable. See Chat failure - No Resources on page 513 for solutions.</p>
Public Website	<ul style="list-style-type: none"> ● Website application is running but cannot login to Avaya IC core servers. ● <code>website.log</code> file may contain repeated login failed exception. ● <code>website.log</code> may contain repeated "Retry Toolkit Login after 60 seconds ..." message. 	<p>See Chat failure - Login Connections on page 512 for solution.</p>

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Problem	Description	Recommended Solution
<p>Customer Management Failure</p>	<p>You get repeated generic error messages when you:</p> <ul style="list-style-type: none"> ● Add a customer from the Web Management Public Website ● Manage Customer accounts from the Multi Tenancy Administration Web pages 	<p>Workflow server is not running or is not available:</p> <ul style="list-style-type: none"> ● Start the Workflow server in IC Manager ● Verify that the Workflow server is in the same Avaya IC domain as the IC Login used by the Web Management application. <p>This Login is the one that was entered in the IC Login field of the Configuration Tool. See the dsLogin parameter of the following file:</p> <pre>IC_INSTALL_DIR\IC61\comp\website\WEB-INF\web.xml</pre> <ul style="list-style-type: none"> ● If Workflow server is in a different domain from the IC Login, make sure the Workflow server domain is in the failover path of the IC Login domain. <p>Web Management Customer Management Workflows have not been loaded</p> <ul style="list-style-type: none"> ● Build and load the Customer Management Workflows in the webcenter project. For more information, see Using workflows for Web Management on page 277. ● Restart the Workflow server in IC Manager.

Troubleshooting Web Management integration

The following table contains some problems you may encounter with Web Management integration.

Problem	Description	Recommended Solution
IC Manager and Web Management Integration	You see an error message indicating that an authentication key could not be retrieved when you select one of the following options from the Services menu in IC Manager: <ul style="list-style-type: none"> ● WebACD ● Web Response Unit (Self-Service) ● Multi-tenant Administration 	You have not configured IC Manager to access Web Management: <ul style="list-style-type: none"> ● Repeat the steps in Integrating Web Management Administration on page 272. Web Management is not running: <ul style="list-style-type: none"> ● Restart the Tomcat server that hosts your Website application. For more information, see Starting and stopping Avaya IC services on page 154. Your administrative login for IC Manager has just has to reset its password: <ul style="list-style-type: none"> ● Restart IC Manager.
IC Manager and Web Management Integration	Your Web browser is not opened when you select one of the following options from the Services menu in IC Manager: <ul style="list-style-type: none"> ● WebACD ● Web Response Unit (Self-Service) ● Multi-tenant Administration 	Configure IC Manager for your Web browser: <ol style="list-style-type: none"> 1. In IC Manager, select Manager > Options. 2. Select the Environment tab. 3. Select the Ellipsis (...) button next to the Browser field. 4. Select Select from List. 5. Select Search Filesystem. 6. Select the drive where the browser is installed. Select OK. 7. After the search is complete, select the Web browser from the list. Select OK. 8. Select OK.

Troubleshooting

Problem	Description	Recommended Solution
<p>IC Manager and Web Management Integration</p>	<p>Your Web browser displays a message stating that there was an internal error, when you select Services > WebACD in IC Manager.</p>	<p>The domain of the URL used to access the WebACD server is different from the domain expected by the WebAdmin plugin.</p> <ul style="list-style-type: none"> ● In IC Manager, verify that the following properties are the same: <ul style="list-style-type: none"> - System/Configuration - ChatLoginServer - WebACD server - WACD Web Server - Configuration Tool - Web Server Host and Web Server Domain ● If ChatLoginServer is different: <ul style="list-style-type: none"> - Type the correct value - Select Manager > Refresh ● If WACD Web Server is different: <ul style="list-style-type: none"> - Type the correct value - Restart the Tomcat server that hosts your Website application. For more information, see Starting and stopping Avaya IC services on page 154. - Restart the WebACD server in IC Manager ● If the Configuration Tool values are different: <ul style="list-style-type: none"> - Rerun the Configuration Tool with the correct values - Restart the Tomcat server that hosts your Website application. For more information, see Starting and stopping Avaya IC services on page 154. - Restart your Web server (IIS or iPlanet)

Understanding Web Management configuration files

Web Management uses the configuration files in the following table.

File Name	File Location	Description
web.xml	<code>IC_INSTALL_DIR\IC61\comp\website\WEB-INF\web.xml</code>	Web Management uses this Servlet API application startup file as a bootstrap file to log into the Avaya IC core servers. Use the Configuration Tool to update this file.
pdm.xml	<code>IC_INSTALL_DIR\IC61\etc\pdm.xml</code>	This property configuration database access file contains database and Data server configuration information. Use the Configuration Tool to update this file.
vesp.imp vespidl.pk	<code>IC_INSTALL_DIR\IC61\etc\vesp.imp</code> <code>IC_INSTALL_DIR\IC61\etc\vespidl.pk</code>	Avaya IC server configuration files. The machine that hosts Web Management must have copies of these files.
local.properties	<code>IC_INSTALL_DIR\IC61\servers\IC_INSTALL_DIR\IC61\local.properties</code>	This configuration file contains the definition of the Website application, including the Classpath and JNI path settings.

Understanding Web Management log files

Web Management uses the log files in the following table.

File Name	File Location	Description
<code><website>.log</code>	<code>IC_INSTALL_DIR\IC61\logs\website.log</code>	This file is the main property configuration log file for Web Management. <code><website></code> is the value of the <code>dsObjectName</code> property in the <code>web.xml</code> file.
<code><website>_*.log</code>	<code>IC_INSTALL_DIR\IC61\logs\website_*.log</code>	All other log files generated by the integration of the ICM server and the Avaya IC servers. <code><website></code> is the value of the <code>dsObjectName</code> property in the <code>web.xml</code> file.

Troubleshooting DataWake

The following table contains a problem you may encounter with the DataWake feature of Web Self-Service.

Problem	Description	Recommended Solution
<p>Administrator or agent does not see any Datawake records for a customer in Web Self-Service.</p>	<p>The Configuration Tool did not insert the Datawake Sensor filter into IIS when you created the Website.</p>	<p>The connector filter for the Website Tomcat server is either not present or is a global filter. Datawake requires that the connector filter be a local filter.</p> <p>To add the local filter to IIS:</p> <ol style="list-style-type: none"> 1. In Internet Services Manager, right-click on the Web Service where you installed the filter for the Website and select Properties. 2. Select the ISAPI Filters tab. 3. If there is no dwsensor filter listed or the filter has a red arrow to the left: <ul style="list-style-type: none"> - Select Add. - Type dwsensor in Filter Name field. - Type the following directory and file name in the Executable field. <pre style="margin-left: 20px;">IC_INSTALL_DIR\IC61\bin\dwsensor.dll</pre> <ul style="list-style-type: none"> - Select OK. 4. Select OK in the ISAPI Filters tab. 5. In the Windows Services control panel, stop and restart the World Wide Web Publishing Service.

Troubleshooting Outbound Contact Management

The following table contains problems you may encounter with Outbound Contact Management (Outbound Contact). Further information about Outbound Contact is available in *IC Administration Volume 2: Agents, Customers, & Queues* and [Configuring Outbound Contact](#) on page 219.

Problem	Description	Recommended Solution
<p>Cannot do one of the following:</p> <ul style="list-style-type: none"> ● Delete numbers that were imported from an Import List. ● Load a calling list into Outbound Contact. 	<p>Outbound Contact may timeout when accessing the database under the following conditions:</p> <ul style="list-style-type: none"> ● The calling list is very large. ● In the Outbound Contact Calling List window, you selected a field name in the Order by group box. <p>You might receive an error, such as "A database error occurred."</p> <p>You can view the timeout messages in the import and Data server logs.</p>	<p>To increase the timeout value in Database Designer:</p> <ol style="list-style-type: none"> 1. In Database Designer, select File > Open and open the following ADL: <i>IC_INSTALL_DIR\IC61\design\SoftDialer\dialer.adl</i> 2. In the tree pane, expand Components > Physical DB Connections and select dialerDBConnectionSet. 3. Type a larger number in the Timeout field in the right pane. 4. Select File > Save to save the file. 5. Select File > Generate Windows Application. 6. In the Generate Windows Application dialog box, Select OK. 7. Select File > Exit. 8. Exit from the following Administration tools: <ul style="list-style-type: none"> - Outbound Contact - IC Manager 9. Open IC Manager and Outbound Contact and delete the numbers. <p>If necessary, repeat these steps to increase the Timeout value again.</p>

Problem	Description	Recommended Solution
Cannot access Outbound Contact Supervisor from IC Manager.	IC Manager toolbar does not include Supervisor.	Perform the following steps to add a button for Supervisor. <ol style="list-style-type: none"> 1. In IC Manager, select Tools > Customize. 2. Select New in the Customize dialog box. 3. Select Java Frame from the drop-down list. 4. Do not check Add to tab panel. 5. Type Supervisor in the Name field. 6. Type the following string in the Class field: <code>com.avaya.superdesktop.UI.TeCISupervisorDeskTop</code> 7. Select OK.

Troubleshooting Business Advocate

The following table contains problems you may encounter with Business Advocate components. Further information about Business Advocate is available in [Installing Business Advocate components](#) on page 419 and *IC Business Advocate Configuration and Administration*.

Problem	Description	Recommended Solution
Unable to install Resource Manager because DTC access is not enabled.	Business Advocate installer displays the following error: "The installation process has detected that your Microsoft Distributed Transaction Coordinator (DTC) service is not configured to access the network."	When you use Add/Remove programs to configure the application server role, instead of the Manage Your Server wizard, Windows Server 2003 does not enable DTC access. In Add/Remove programs , use Add/Remove Windows components and services to enable DTC access.

Problem	Description	Recommended Solution
<p>Unable to install Resource Manager.</p>	<p>Business Advocate installer displays one or both of the following error messages:</p> <ul style="list-style-type: none"> ● Debug Assertion Failed! ● EvtQmaker.exe encountered a problem and needed to close. 	<ol style="list-style-type: none"> 1. Restart the machine. 2. Verify the DNS settings on the machine. Make sure that the first DNS suffix is the same as the domain of the machine or that the suffix field is empty. 3. Correct the DNS settings, if necessary. 4. Restart the machine. 5. Restart the Business Advocate installation.
<p>Error received from Microsoft Message Queueing Service (MSMQ). WARNING: Resource Manager won't be notified about administrative changes until the problem is corrected.</p>	<p>Resource Manager cannot access MSMQ during start up, and generates a High alarm in the Alarm Monitor of IC Manager. This error message occurs when MSMQ is in an indeterminate state. This error message signifies a known problem with MSMQ, and does not signify a problem with Business Advocate or Avaya IC.</p>	<ol style="list-style-type: none"> 1. Uninstall MSMQ. 2. Reinstall MSMQ. 3. Configure MSMQ. 4. Restart all machines that host Resource Manager servers. <p>For more information about how to install and configure MSMQ, see <i>IC Installation Planning and Prerequisites</i>.</p> <p>If this solution does not work:</p> <ol style="list-style-type: none"> 1. Remove the machine from the active directory domain. 2. Re-assign the machine to the active directory domain. <p>Note: According to Microsoft, this problem will be resolved in Service Pack 1 of Windows Server 2003. To resolve this issue, install Service Pack 1 when it becomes available.</p>

Troubleshooting Letter Generator

The following table contains problems you may encounter with Letter Generator and Batch Administrator. Further information about Letter Generator is available in *Business Application Tools Reference*.

Problem	Description	Recommended Solution
Unable to process a frozen batch in the Batch Administrator.	The pdfsvcport setting in the docgen.properties file is incorrect.	Configure the pdfsvcport property in the docgen.properties file to the same as the web server port used by the Letter Generator Web application. For example, if the Letter Generator Web application uses 9605 for the web server port, then set the "pdfsvcport" to 9605.
Unable to create a Template Pack.	Internet Explorer settings are incorrect.	<ol style="list-style-type: none"> 1. In Internet Explorer, select Tools > Internet Options. 2. Select the Advanced tab. 3. Clear the following box: Display a notification about every script error

Troubleshooting agent issues

The following table contains problems you may encounter when you configure agent desktop applications. Further troubleshooting information for agent configurations is available in *Avaya Agent Integrator's Guide*.

Problem	Description	Recommended Solution
Agent desktop applications do not start.	Avaya Agent displays the following message after login attempt: Avaya Agent Agent layout not found.	<p>In IC Manager, check the following configuration property for the individual agent or for the group: Agent/Desktop/Layout</p> <p>The value of this property must be set to the name of the Avaya Agent layout file, without the CDL extension. For example, if your Avaya IC system includes the default English Avaya Agent layout, type <code>avaya_agent_en</code>.</p>
Machine that hosts Avaya Agent or another Avaya IC agent desktop application has a power failure while application was running. When power is restored, the agent receives an error attempting to log back in.	Avaya IC agent desktop application displays an error message, such as "The Object has disconnected from its clients".	<p>This error can occur if the script cache (.sch) file on the agent machine has been corrupted.</p> <p>Delete the script cache files on the agent machine from all Avaya IC directories. When the agent logs back in, Avaya IC automatically recreates the script cache files.</p>
Avaya Agent fails. Agent can log back in to email channel and chat channel. Agent cannot log back in to voice channel.	Avaya Agent displays license error when attempting to log back in to voice channel.	<p>To log in to the voice channel, agent can do one of the following:</p> <ul style="list-style-type: none"> ● Login through Softphone ● Log out of Avaya Agent, then log back in again.
Avaya Agent fails requiring you to use Windows Task Manager to shutdown the application. Subsequent login attempts fail.	Avaya Agent displays a Login Failed message when an agent tries to login.	<p>When Avaya Agent fails, the VTel application for Telephony continues to run in the background. You must shutdown the VTel application:</p> <ol style="list-style-type: none"> 1. In Windows Task Manager, select the Processes tab. 2. Find the <code>vtel.exe</code> process. 3. Select Shutdown.
You cannot enable the Email channel in Avaya Agent.	WebACD server is not properly configured for Email Management.	<p>Add the configuration parameter <code>emailservername</code> to the WebACD server. For more information, see Configuring the WebACD server for Email Management on page 345.</p>

Troubleshooting

Problem	Description	Recommended Solution
<p>Web Agent does not open with Avaya Agent on the agent desktop.</p>	<p>Agent/Desktop/WAC/Server property is not properly configured.</p>	<p>Confirm that the Agent/Desktop/WAC/Server property is set correctly:</p> <ol style="list-style-type: none"> 1. In IC Manager, select Tools > Groups. 2. Select the Properties tab. 3. Select the IC node in the left pane. 4. In the Sections list, select Agent/Desktop/WAC. 5. Select the Server property and set it to the fully-qualified domain name of the machine that hosts the Paging server. 6. Select Apply. 7. Select OK.
<p>Agent gets an error while launching a Voice Chat contact from text chat.</p>	<p>Agent sees an error message, such as "No Destination No default". Alarm Monitor in IC Manager displays an alarm, such as: "QWorkflow.WriteEDU error gives "NO VduID" and QWorkflow.FetchEDU gives "No EDU"</p>	<p>This error occurs if the agent or customer have been idle in the chat for longer than the length of time set in the No User Interval field on the ADU tab of the ADU server.</p> <p>To resolve the immediate issue, the agent should:</p> <ol style="list-style-type: none"> 1. Wrap up the chat contact. 2. Initiate a new contact with the customer. <p>If one or more agents frequently encounter this problem:</p> <ol style="list-style-type: none"> 1. In IC Manager, double-click the ADU server for the agents who perform voice chats. 2. Select the ADU tab. 3. Increase the number of seconds in the No User Interval field. <p>Avaya recommends that you first increase the interval to 300 seconds. You can increase the interval further, if required.</p>
<p>Agent receives an error when transferring a contact to another agent. Agent may see an error such as "Error occurred while searching the selected Object. Please select new object and consult the administrator."</p>	<p>Virtual queue is visible and appears available for transfers in Unified Agent Directory. However the queue cache on the Workflow server that runs workflows for the Unified Agent Directory was not updated when a new queue was created.</p>	<p>To allow agents to transfer contacts to a new virtual queue, do one of the following for every Workflow server in a user domains that runs workflows for the Unified Agent Directory:</p> <ul style="list-style-type: none"> ● Manually run the <code>sys_transfer.update_vq_cache</code> workflow ● Restart each Workflow server

Troubleshooting the secondary ORB configuration

The following table contains a common problem you may see with a secondary ORB server.

Problem	Description	Recommended Solution
Configuration tool displays the following message, "Failed to load vesp.imp"	N/A	<p>To resolve this problem, try the following solutions, then re-run the Configuration Tool:</p> <ul style="list-style-type: none"> ● Ensure the IC Login and Password are correct ● Make sure the ORB port matches the port of the ORB server on the primary machine ● Make sure you can "ping" the primary hostname ● Make sure that you called configure from the Start menu or from within the working directory of <code>IC_INSTALL_DIR\IC61\bin</code>. ● If none of the above solutions work: <ul style="list-style-type: none"> - From <code>IC_INSTALL_DIR\IC61\bin</code> <code>run configure -d</code> - Contact Avaya CRM Technical Support and provide the following logs: General.log, General_Admin.log, and Admin.log

Troubleshooting Avaya FTSE

This section includes information about troubleshooting problems that you may encounter when you configure Avaya FTSE. This section includes the following topics:

- [Troubleshooting FTSE installation on AIX](#) on page 530.
- [Troubleshooting full text searches](#) on page 530.
- [Troubleshooting Web Self-Service configuration](#) on page 531.
- [Troubleshooting Web Self-Service pages](#) on page 533.
- [Troubleshooting QKnowledge](#) on page 533.

Troubleshooting FTSE installation on AIX

The following table contains some problems you may encounter with Web Self-Service pages.

Problem	Description	Recommended Solution
Cannot run configftse.	If the machine does not have fonts compatible with the EN_US locale, you will get an error that says "Cannot create fontset" and configftse will fail to run from the bin directory.	To run configftse on AIX: <ol style="list-style-type: none"> 1. Navigate to <code>IC_INSTALL_DIR/IC61/lib</code> 2. Execute the following command: <code>export AVAYA_IC61_HOME=<path to Avaya home></code> 3. Execute the following command: <code>./configftse</code>

Troubleshooting full text searches

The following table includes some of the messages and errors that you might see when you configure full-text searches. These messages can occur on any operating system.

Message	Description
The object, "w_qw_wru_view", already exists in database.	You can ignore this message. This message does <i>not</i> indicate that you have encountered a problem with the configuration.

Message	Description
ERROR at line 1: ORA-00955: name is already used by an existing object	You can ignore this error. This message indicates that the view already exists.
execsql: execute failed SQLSTATE: SGS00, Native error: 0, error text [Hummingbird][SearchServer] Invalid table name	You may see this error message twice in fulcrum.err. This error occurs because the script is attempting to drop a table that does not yet exist. You can ignore this error when you run the <code>fulcrum setup</code> command for the first time on a machine. However, if you receive this error when you repeat the command on a machine, investigate why the script cannot access the database to perform the following tasks: <ul style="list-style-type: none"> ● unprotect table qw_wru_en ● drop table qw_wru_en

Troubleshooting Web Self-Service configuration

This section includes the following topics, which assist you to troubleshoot and verify the Web Self-Service configuration:

- [Verifying the Web Self-Service configuration on Microsoft Windows](#) on page 531.
- [Verifying the Web Self-Service configuration on Sun Solaris](#) on page 532.
- [Verifying the Web Self-Service configuration on IBM AIX](#) on page 532.

Verifying the Web Self-Service configuration on Microsoft Windows

If any of the following configuration settings are not present, or are invalid, re-run the configuration of Web Self-Service, as described in [Running the Web Self-Service Configuration Tool](#) on page 409.

To verify the Web Self-Service configuration:

1. In Windows ODBC Administration, verify that the following system DSN was successfully created: **ICWRU**
2. In a text editor, such as Notepad, verify the Web Self-Service settings in the `pdm.xml` file:
 - a. Open the following file: `IC_INSTALL_DIR\IC61\etc\pdm.xml`
 - b. Find the section between the following headings:
`<QE name="fulcrum"> . . . </QE>`
 - c. Make sure that this section is not commented out.

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3. In a text editor, such as Notepad, verify the database settings in the `ec56.did` file:
 - a. Open the following file: `IC_INSTALL_DIR\IC61\etc\wru_sql\ec56.did`
 - b. Find the entries for the database user name and password.
 - c. Confirm that these entries are valid.

Verifying the Web Self-Service configuration on Sun Solaris

To verify the Web Self-Service configuration:

1. Verify the database settings in the `ec56.did` file:
 - a. Open the following file: `IC_INSTALL_DIR\IC61\etc\wru_sql\ec56.did`
 - b. Find the entries for the database user name and password.
 - c. Confirm that these entries are valid.
2. Verify that the following script was created in `IC_INSTALL_DIR/IC61/bin`:
`fulcrumenv.sh`

Verifying the Web Self-Service configuration on IBM AIX

To verify the Web Self-Service configuration:

1. Verify that the following files were successfully created in `IC_INSTALL_DIR\IC61\etc\wru_sql`
 - `ODBC.ini`
 - `wru_createview.sql`
2. Verify that the `fulcrumenv.sh` script was created in `IC_INSTALL_DIR/IC61/bin`.

Troubleshooting Web Self-Service pages

The following table contains some problems you may encounter with Web Self-Service pages.

Problem	Description	Recommended Solution
Web Self-Service Failure (FAQ)	<ul style="list-style-type: none"> ● Web Self-Service Management fails when trying to submit, update, or delete documents ● See generic error message when trying to search FAQs ● See PDM errors in <code>website.log</code> when you search, submit, update, or delete documents 	<p>You have not configured Search Server integration correctly:</p> <ul style="list-style-type: none"> ● Repeat steps to configure Web Self-Service. ● Restart the ICM server: <ul style="list-style-type: none"> - For Microsoft Windows, from the Services Control Panel, start Avaya IC ICM Service 6.1 - For Sun Solaris, run the following shell script: <code>../bin/icm.sh</code> - For IBM AIX, run the following shell script: <code>../bin/icm.sh</code> <p>Web Management database access manager (PDM) has lost database connectivity:</p> <ul style="list-style-type: none"> ● Verify that the Data server is running. ● Verify that the Database server for the RDBMS is running. ● Restart the Tomcat server that hosts your Website application. For more information, see <i>IC Installation and Configuration</i>.

Troubleshooting QKnowledge

This section includes information about troubleshooting QKnowledge. This section includes the following topics:

- [Verifying the QKnowledge configuration](#) on page 534.
- [Troubleshooting QKnowledge Web application](#) on page 534.

Verifying the QKnowledge configuration

If QKnowledge does not function correctly, verify that the following occurred during the QKnowledge configuration.

1. In Windows ODBC Administration, verify that the following system DSN was successfully created: **QKnowledge_60**
2. In the Windows Services control panel, verify that the following Windows service was successfully created: Avaya IC **Knowledgebase Service 6.1**
3. In Windows Explorer, verify that the user has read and write permissions for the following folder and all contents: *IC_INSTALL_DIR\IC61\fulcrum\bin*

Troubleshooting QKnowledge Web application

The following table contains common problems you may see with the QKnowledge Web application.

Problem	Description	Recommended Solution
Web browser displays an Unresolved Host Name message.	Cannot open QKnowledge in a Web browser with the following URL: <i>http://<machine_name>:<port>/qk/qk.htm</i>	If your contact center uses a proxy server or enhanced security for Internet Explorer, verify that the address for the QKnowledge Web application is included in the browser exception list and the acceptable Web addresses list.

Problem	Description	Recommended Solution
<p>Web browser displays a blank page or one of the following messages:</p> <ul style="list-style-type: none"> ● Page cannot be found ● Unresolved host name 	<p>Cannot open QKnowledge in a Web browser with the following URL: <code>http://<machine_name>:<port>/qk/qk.htm</code></p>	<p>On the machine that hosts IIS:</p> <ol style="list-style-type: none"> 1. In Internet Services Manager, right-click on the Web Service where you installed the Web application for QKnowledge. 2. Select Properties. 3. Select the ISAPI Filters tab. 4. Delete the filters. 5. In the Windows Services control panel, stop and restart the World Wide Web Publishing Service. <p>On the machine that hosts QKnowledge:</p> <ul style="list-style-type: none"> ● Re-run the Configuration Tool to configure the QKnowledge Web application. <p>On the machine that hosts IIS:</p> <ol style="list-style-type: none"> 1. In Internet Services Manager, right-click on the Web Service where you installed the Web application for QKnowledge. 2. Select Properties. 3. Select the ISAPI Filters tab. 4. Confirm that the following ISAPI filters were added: <ul style="list-style-type: none"> - dwsensor – C:\Program Files\Avaya\IC61\bin\dwsenso.dll - WebAdmin – C:\Program Files\Avaya\comp\icws\isplugin.dll - AICJakartaFilter – C:\Program Files\Avaya\IC61\tomcat\modules\isapi_redirect.dll 5. If the filters are not there, add them manually. 6. In the Windows Services control panel, stop and restart the World Wide Web Publishing Service. 7. Stop and restart the QKnowledge service.

Troubleshooting Windows configuration

You can receive an Out of Disk Space error even if the target drive is not full. If you install Avaya IC on a drive other than C:\, Avaya IC uses the `c:\Temp` directory for staging the installation files.

To resolve this issue:

- Free up space on the C:\ drive
- Changing the machine's TEMP environment variable to point to a folder on another drive

For more information, see the Windows documentation provided by Microsoft.

Uninstalling Avaya IC

If you must uninstall Avaya IC from a machine, perform the following steps to ensure that all services, files, and related components are removed.

1. [Uninstalling Avaya IC components for Windows](#) on page 536.
2. [Uninstalling Avaya IC servers for Solaris and AIX](#) on page 537.
3. [Uninstalling Web server components](#) on page 538.
4. [Uninstalling Business Advocate](#) on page 538.
5. [Uninstalling related third-party components](#) on page 539.
6. [Uninstalling Avaya IC agent desktop applications](#) on page 540.

Uninstalling Avaya IC components for Windows

Perform these steps to uninstall Design & Administration Tools and any Avaya IC servers that you host on Windows machines.

Note:

The Avaya IC uninstaller occasionally does not remove all entries to the Windows registry. After you uninstall an Avaya IC component from a Windows machine, remove any remaining entries from the Windows Registry.

To uninstall Avaya IC components on Windows:

1. In IC Manager, select **Server > Shutdown** to stop all Avaya IC servers on the machine.
2. Close all Avaya IC applications on the target machine.
3. Stop the following services:
 - Avaya IC ORB Service 6.1
 - Avaya Voice Media Manager
 - Avaya IC ICM Service
 - Avaya IC CIRS Service
 - All Tomcat services
 - Web server service (for example, World Wide Web Publishing for IIS)
4. In the Windows Control Panel:
 - a. Open **Add/ Remove Programs**.
 - b. Select Avaya Interaction Center **6.1**.
 - c. Select **Change/Remove** to start the Avaya IC Uninstaller.Follow the prompts in the Avaya IC Uninstaller to uninstall Avaya IC services, delete registry settings, and remove files that are not in use.
5. In the Windows Control Panel, delete the Avaya IC environment variable:
 - a. Double-click **System**.
 - b. On the **Advanced** tab, select **Environment Variables**.
 - c. Select the Avaya IC environment variable in the System Variables box.
 - d. Select **Delete**.
 - e. Select **OK**.
6. Delete the remaining folders and files in the `IC_INSTALL_DIR\IC61\` directory.
7. Delete all shortcuts that you added to the desktop.
8. Open the Windows Registry and confirm that all Avaya IC entries have been removed.
9. Continue with [Uninstalling Web server components](#) on page 538 without restarting the target machine.

Uninstalling Avaya IC servers for Solaris and AIX

You do not need to perform these steps if you host your servers on Windows machines.

To uninstall Avaya IC servers on Solaris:

1. Close all Avaya IC applications on the target machine.

2. In a command window on the target machine, stop the Avaya IC servers as described in [Stopping all servers with the Avaya IC Admin utility](#) on page 153.
3. In a command window on the target machine, stop the Avaya IC services as described in [Starting and stopping services on Solaris and AIX](#) on page 155.
4. Remove all Avaya IC commands that you added to the UNIX startup script.
5. Delete the Avaya IC root directory.
6. Continue with [Uninstalling Web server components](#) on page 538 without restarting the target machine.

Uninstalling Web server components

Perform these steps if the target machine includes a Web server.

If the target machine does not include Web server components, continue with one of the following procedures:

- [Uninstalling Business Advocate](#) on page 538.
- [Uninstalling related third-party components](#) on page 539.

To uninstall Web server components:

1. For Tomcat, perform the following steps:
 - a. Delete all Tomcat servers that you created to host Web applications, such as the Website and WebLM.
 - b. Uninstall Tomcat, if desired.
2. For the Web server, perform the following steps:
 - a. Remove the virtual directories from your Web site.
 - b. If your Web server is IIS:
 - Right-click on the Web site and select Properties.
 - Select the **ISAPI Filters** tab and remove the dwsensor and Jakarta Connector filters.

Uninstalling Business Advocate

For an Avaya IC system which includes Business Advocate, you must uninstall the Business Advocate components separately. Perform these steps for each machine that hosts Resource Manager servers and other Business Advocate components.

If the target machine does not include Business Advocate components, continue with [Uninstalling related third-party components](#) on page 539.

To uninstall Business Advocate:

1. If you have not already done so, in IC Manager, stop all Resource Manager servers and other Business Advocate on the machine.
2. Close all Business Advocate applications on the target machine.
3. In the Windows Control Panel:
 - a. Open **Add/ Remove Programs**.
 - b. Select **Avaya Business Advocate version 2.0**.
 - c. Select **Change/Remove** to start the Business Advocate Uninstaller.

Follow the prompts in the Business Advocate Uninstaller to uninstall services, delete registry settings, and remove files that are not in use.

4. Re-start the target machine.
5. Log back into the machine and delete the remaining folders and all files in those folders:
 - **C:\Program Files\Avaya\Avaya Business Advocate**
 - **C:\nethome**
6. Delete all shortcuts that you added to the desktop.
7. Continue with [Uninstalling related third-party components](#) on page 539 without restarting the target machine.
8. Re-start the target machine.

 **Important:**

Do not re-install or upgrade Business Advocate components without re-starting the Business Advocate machines.

Uninstalling related third-party components

Perform these steps to complete your uninstallation.

To uninstall related third-party components:

1. Uninstall all related third-party components that you installed on the target machine.

For information on uninstallation procedures, see the manufacturer's documentation.
2. If the target machine has a Windows operating system, navigate to `c:\WINNT\Temp` and delete all numbered `_istmp` directories.
3. Restart the target machine.

Uninstalling Avaya IC agent desktop applications

Perform these steps to uninstall Avaya IC agent desktop applications.

Note:

The Avaya IC agent application uninstaller does not always remove all entries to the Windows registry. The remaining entries in the Windows Registry will not block functionality for other applications on the machine.

To uninstall Avaya IC agent desktop applications.

1. Close all Avaya IC applications on the target machine.
2. In the Windows Control Panel:
 - a. Open **Add/ Remove Programs**.
 - b. Select Avaya Interaction Center **6.1**.
 - c. Select **Change/Remove** to start the Avaya IC Uninstaller.Follow the prompts in the Avaya IC Uninstaller to uninstall Avaya IC services, delete registry settings, and remove files that are not in use.
3. In the Windows Control Panel, delete the Avaya IC environment variable:
 - a. Double-click **System**.
 - b. On the **Advanced** tab, select **Environment Variables**.
 - c. Select the Avaya IC environment variable in the **System Variables** box.
 - d. Select **Delete**.
 - e. Select **OK**.
4. For the `... \Backup` directory that was created by the agent installer:
 - a. Review the files in the directory.
 - b. Confirm that the System32 files are not required by another application.
 - c. Restore any files required by another application.
 - d. Delete the directory.
5. Delete any remaining folders and files in the `IC_INSTALL_DIR\IC61\` directory.
6. Delete all shortcuts that you added to the desktop.

Uninstalling FTSE

If you need to uninstall Avaya FTSE from a machine, perform the following steps to ensure that all services, files, and related components are removed.

1. [Uninstalling Avaya IC components for Windows](#) on page 536.
2. [Uninstalling Avaya IC servers for Solaris and AIX](#) on page 537.

Uninstalling Avaya FTSE components for Windows

Perform these steps to if you host Avaya FTSE on Windows machines.

Note:

The Avaya FTSE uninstaller occasionally does not remove all entries to the Windows registry. After you uninstall an Avaya IC component from a Windows machine, you may need to manually remove any remaining entries from the Windows Registry.

To uninstall Avaya FTSE components on Windows:

1. In IC Manager, select **Server > Shutdown** to stop all Avaya IC servers on the machine.
2. Close all Avaya IC and Avaya FTSE applications on the target machine.
3. Stop the following services:
 - IC Knowledgebase Service 6.1
 - AIC FTSE Connector v1.0
 - AIC FTSE Connector v1.0 Manager
 - AIC FTSE for Java v1.0
 - AIC FTSE STR Service v1.0
 - Web server service (for example, World Wide Web Publishing for IIS)
4. In the Windows Control Panel:
 - a. Open **Add/ Remove Programs**.
 - b. Select **Avaya FTSE**.
 - c. Select **Change/Remove** to start the Uninstaller.

Follow the prompts in the Uninstaller to uninstall Avaya FTSE services, delete registry settings, and remove files that are not in use.

5. If no other Avaya IC components are hosted on the machine, in the Windows Control Panel, delete the Avaya IC environment variable:
 - a. Double-click **System**.

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- b. On the **Advanced** tab, select **Environment Variables**.
- c. Select the Avaya IC environment variable in the System Variables box.
- d. Select **Delete**.
- e. Select **OK**.
6. Delete the remaining folders and files for Avaya FTSE in the `IC_INSTALL_DIR\IC61\` directory.
7. For Tomcat, perform the following steps:
 - a. Delete all Tomcat servers that you created to host Web applications, such as the Website and WebLM.
 - b. Uninstall Tomcat, if desired.
8. For the Web server, perform the following steps:
 - a. Right-click on the Web site and select **Properties**.
 - b. Select the **ISAPI Filters** tab and remove the dwsensor and Jakarta Connector filters.
9. Delete all shortcuts that you added to the desktop.
10. Open the Windows Registry and confirm that all Avaya FTSE entries have been removed.

Uninstalling Avaya FTSE components for Solaris and AIX

To uninstall Avaya FTSE components on Solaris:

1. Close all Avaya IC and Avaya FTSE applications on the target machine.
2. In a command window on the target machine, stop the Avaya IC servers as described in [Stopping all servers with the Avaya IC Admin utility](#) on page 153.
3. In a command window on the target machine, stop the Avaya IC services as described in [Starting and stopping services on Solaris and AIX](#) on page 155.
4. For Tomcat, perform the following steps:
 - a. Delete all Tomcat servers that you created to host Web applications, such as the Website and WebLM.
 - b. Uninstall Tomcat, if desired.
5. Remove all Avaya FTSE commands that you added to the UNIX startup script.
6. Delete the Avaya IC root directory.

■ ■ ■ ■ ■ ■

Appendix C: Configuring a localized version

To configure a localized version of Avaya IC, perform the steps in the following topics during the installation:

- [Specifying the NLS Lang property for Oracle](#) on page 544.
- [Enabling Database Designer for localization](#) on page 545.
- [Configuring Avaya Agent for a supported language](#) on page 548.
- [Configuring Avaya Agent for multiple languages](#) on page 549.
- [Importing localized seed data](#) on page 550.
- [Configuring the Website for supported languages](#) on page 550.
- [Setting language properties for agents](#) on page 551.
- [Customizing a localized Business Application](#) on page 552 (optional).
- [Configuring a Notification server for alternate email encodings](#) on page 560.
- [Configuring an HTTP Connector server for Traditional Chinese](#) on page 561.

Note:

Some menu items in Avaya IC 6.1.1 applications are not completely localized. These items display in English. For example, you may see English in some secondary built in forms and menu items, and on **OK** and **Cancel** buttons on some dialog boxes.

Specifying the NLS Lang property for Oracle

If your Avaya IC system includes an Oracle database, you must specify the NLS Lang property on the **Initial Config** tab of the Configuration Tool when you configure a primary or secondary server environment.

This section includes the following topics:

- [About the NLS Lang property](#) on page 544.
- [Where Oracle specifies the NLS Lang property](#) on page 544.
- [Cautions for the NLS Lang property](#) on page 544.
- [NLS Lang settings for supported languages](#) on page 545.

For more information, see the Oracle documentation.

About the NLS Lang property

Oracle uses National Language Support (NLS LANG) values to set up language-specific databases. The character set part of the NLS_LANG parameter specifies the character set used by the Data server.

Where Oracle specifies the NLS Lang property

On Solaris, NLS_LANG is specified as an environment variable.

On Windows, NLS_LANG is set in the registry under the following:

```
HKEY_LOCAL_MACHINE > SOFTWARE > ORACLE > HOMEn
```

Cautions for the NLS Lang property

Do not use abbreviations in the NLS LANG parameter. For example, do not use "US" to designate American English. You must use AMERICAN_AMERICA.UTF8.

The character set in the NLS LANG parameter must match the character set of your Oracle database. If these character sets are different, strange character conversions and string truncations may result.

NLS Lang settings for supported languages

The following table includes the NLS Lang settings for the languages supported in this Avaya IC release.

Language	NLS Lang Setting
English	AMERICAN_AMERICA.UTF8
Spanish	SPANISH_SPAIN.UTF8
German	GERMAN_GERMANY.UTF8
French	FRENCH_FRANCE.UTF8
Italian	ITALIAN_ITALY.UTF8
Portuguese	BRAZILIAN PORTUGUESE_BRAZIL.UTF8
Simplified Chinese	SIMPLIFIED CHINESE_CHINA.UTF8
Korean	KOREAN_KOREA.UTF8
Japanese	JAPANESE_JAPAN.UTF8
Thai	THAI_THAILAND.UTF8
Traditional Chinese	TRADITIONAL CHINESE_TAIWAN.UTF8

Enabling Database Designer for localization

To use Database Designer with languages other than English, you must add a Localization section to the Database Designer INI file (`qdesigner.ini`). This section identifies the character encoding that you are using for translations in your locale.

When you open an ADL file for localization, your Database Designer INI file must contain a Localization section with character encoding that matches the language in the localized design.

The Localization section includes the following:

- ISO-639-1 (alpha 2) two letter language abbreviations
- Character encoding used in the output generated by Database Designer

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The two letter language abbreviation also identifies the language in all language-specific files. For more information about the names of language-specific files, see [Translating string table messages](#) on page 553.

Note:

Do not use the Localization node to customize CallCenterQ in English, as this can cause serious problems with migration in the future.

To enable localization in Database Designer:

1. With Database Designer closed, open the Database Designer INI file (`qdesigner.ini`) in Notepad or another text editor.

The Database Designer INI file is installed in the Windows directory. For example, in machines using Windows, the Windows directory is typically `c:\winnt`.

2. Add a Localization section at the end of the INI file, including values for `TargetLanguage` and `TargetEncoding` fields to match the desired locale using the information in the following table:

Language	Language Code	Localization Section Update
English	en	[Localization] ;English TargetLanguage=en TargetEncoding=windows-1252
Spanish	es	[Localization] ;Spanish TargetLanguage=es TargetEncoding=windows-1252
German	de	[Localization] ;German TargetLanguage=de TargetEncoding=windows-1252
French	fr	[Localization] ;French TargetLanguage=fr TargetEncoding=windows-1252
Italian	it	[Localization] ;Italian TargetLanguage=it TargetEncoding=windows-1252
Portuguese	pt	[Localization] ;Portuguese TargetLanguage=pt TargetEncoding=windows-1252

Language	Language Code	Localization Section Update
Simplified Chinese	zh	[Localization] ;Simplified Chinese TargetLanguage=zh TargetEncoding=gb2312
Korean	ko	[Localization] ;Korean TargetLanguage=ko TargetEncoding=korean
Japanese	ja	[Localization] ;Japanese TargetLanguage=ja TargetEncoding=shift_jis
Thai	th	[Localization] ;Thai TargetLanguage=th TargetEncoding=windows-874
Traditional Chinese	zt	[Localization] ;Traditional Chinese TargetLanguage=zt TargetEncoding=Big5

3. Save the INI file.
4. Close the text editor.

Configuring Avaya Agent for a supported language

The steps in this section include a summary of the steps in [Creating installation files for agent applications](#) on page 355.

 **CAUTION:**

Before you or an agent runs the Agent Installer on an agent desktop machine, confirm that there are no Avaya IC agent desktop applications or `qui.exe` processes running on the agent machine. The Agent Installer may stop responding or pause indefinitely if an agent desktop or `qui.exe` process is still running.

To configure Avaya Agent for a non-English language:

1. When you generate your agent desktop application (as discussed in [Generating the Interaction Center application](#) on page 109), you must:
 - a. Check the **Help** box and select a help file for the appropriate language.
 - b. Check the **Avaya Agent Layout** box and select an Avaya Agent Layout for the appropriate language.
 - c. Check the **EDU Layout** box and select an EDU Layout for the appropriate language.

If you do not know the directory path, select the **Ellipsis (...)** button and navigate to the directory.

Note:

The Avaya IC 6.1.1 CD-ROM does not include translated help files for CallCenterQ or Avaya Agent in the supported non-English languages. The English help files have been placed on the CD as placeholders for the translated help files. When the translated help files are available, you will be able to download them from the CRM Technical Support Web site at <http://www.avaya.com/support/qq>.

2. To create and run the Agent Installer, follow the instructions in [Creating installation files for agent applications](#) on page 355.

Note:

If you plan to replace the English help files with translated help files when they become available, choose **Yes** to Automatic Updates when you create the Agent Installer.

3. The Avaya IC 6.1 agent installer includes English resource files. To add the resource files for a supported non-English language, install an Agent Language Pack:

- To install the Agent Language Pack on a single agent machine, run the following command from the Avaya IC 6.1 CD 1:
`<cd-rom_dir>\Agent\LangPack\LangPack.exe`
- To deploy the Agent Language Pack on all agent machines, follow the instructions for Language Pack Updates in [Configuring automatic updates for agent applications](#) on page 376.

When you run the Agent Installer, the installer checks for an existing Avaya IC 6.1 installation. If there is an Avaya IC 6.1 installation, a message box asks you if it is okay to continue.

Configuring Avaya Agent for multiple languages

If your Avaya IC systems requires that Avaya Agent run in multiple languages, you must store the messages for each language in the database. Perform these steps after you generate the CallCenterQ application for the first language.

To configure Avaya Agent for multiple languages:

1. Close Database Designer if you have it open.
2. Update the [Localization] section of the Database Designer INI file for the new language.

For more information, see [Enabling Database Designer for localization](#) on page 545.

3. In Database Designer, open the CallCenterQ ADL file.
4. Select **File > Generate Windows Application**.
5. In the **Generate Windows Application** dialog box:
 - a. Check the **Messages** box only.
 - b. Check the **Avaya Agent Layout** box and select an Avaya Agent Layout for the appropriate language.
 - c. Check the **EDU Layout** box and select an EDU Layout for the appropriate language.

If you do not know the directory path, select the **Ellipsis (...)** button and navigate to the directory.
 - d. Select **OK**.

Repeat these steps for each additional language.

Importing localized seed data

The localized seed data allows your Avaya IC system to have localized interfaces for the Website, the ICM caller applet, and the Voice Chat interfaces. You perform these steps on the machine that hosts Database Designer.

To install the localized seed data:

1. In Notepad or another text editor, open the following file:
`IC_INSTALL_DIR\IC61\design\CallCenterQ\data\seed_L10N.cfg`
2. Find the **DestinationPasswd** field and verify that the value is the correct password for the Admin account.
3. Save the `seed_L10N.cfg` file.
4. Open a command window.
5. Navigate to `IC_INSTALL_DIR\IC61\design\CallCenterQ\data`
6. Run the following file to import the localized seed data: `import_seed_L10N.bat`

Configuring the Website for supported languages

To configure your Website for supported languages:

1. In IC Manager, select **Services > MultiTenancy Administration**.
2. Select **Define Languages** from the **Tenants Admin** menu.
3. In the **Properties** box:
 - a. Select a language code.
For both Simplified Chinese and Traditional Chinese, select **zh**.
 - b. Assign a country code:
 - For Traditional Chinese, select **TW**.
 - For all other languages, leave the country code blank.
 - c. Type a default description.
 - d. Type a default display name.
 - e. Select **Add Language**.
4. In the **Enable Languages** page, select a tenant.

5. Select **Customize Tenant Languages**:

- a. Check the **Enabled** box to allow the tenant to use the new language.

By default, all languages are enabled in the default tenant.

- b. Select a default language for the tenant.

If Avaya IC cannot find a property for a supported language, Avaya IC will use the default language. English is always the default language for the default tenant.

Setting language properties for agents

When you configure the language for an agent, you specify the language that the agent desktop applications use, including Web Agent and Avaya Agent. Web Agent obtains the language setting from Avaya Agent. You do not need to configure the language for Web Agent separately.

To configure the language for an agent:

1. In IC Manager, select the **Agent** tab and double-click the agent in the list of agents.
2. Select the **Properties** tab.
3. Select **Agent** in the **Sections** list.
4. Select **Add Property**.
5. From the **Property** drop-down list, select **UILanguage**.
6. From the **Property Value** drop-down list, select one of the following values:

Value	Language
de	German
en	English
es	Spanish
fr	French
it	Italian
ja	Japanese
ko	Korean
pt	Portuguese
th	Thai

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Value	Language
zh	Simplified Chinese
zt	Traditional Chinese Note: zt is a non-standard two letter language code that certain components of Avaya IC use differentiate between Traditional Chinese and Simplified Chinese.

7. Select **OK**.

8. Select **Apply**.

You can define the language for all agents by modifying the Global Properties for all agents. For more information, see [Setting global properties for all agents](#) on page 389.

Customizing a localized Business Application

With Database Designer's localization node, you can customize CallCenterQ in all supported languages. In addition to the ADL, ADC, and ADF files, localization uses the following unique application design files to generate a localized application.

File	Description
ALF (Application Language Forms)	Translated form definitions, including forms, groups, and objects.
ALM (Application Language Messages)	Translated string table entries, including error messages and warnings in IC Scripts.

With localization enabled, you can use Database Designer to translate the following components from US English:

- String table entries, such as error messages and confirmation messages in IC Scripts
- Form titles
- Group labels
- Object labels
- Search browser column labels
- In-form browser column labels
- Enumeration field labels

Localizing the money field

You can localize the Currency symbol used in fields with a data type of money. For example, you can change the currency symbol from \$. For more information, see *IC Database Designer User Guide*.

To change the value of the currency symbol:

1. Select **Edit > Localize Money Fields**.
2. Type the desired values in the following fields:
 - Money Symbol
 - Scale
3. Select **OK**.

Translating string table messages

Database Designer stores the error and confirmation messages that form the string table entries in a message file. The message file name uses the naming convention: `<app>_<lang>.alm`, where `<app>` is your Business Application, and `<lang>` is the ISO-639-1 two letter abbreviation for the language used in your string table entries. The table below includes the names of the ALM and ALF files for each supported language.

Note:

Avaya IC does not support the Business Applications in Traditional Chinese. Information about Traditional Chinese is provided as part of the ALM file is used by the Interaction Center application and data source.

Language	ALM File Name	ALF File Name
English	ccq.alm	ccq_en.alf
Spanish	ccq_es.alm	ccq_es.alf
German	ccq_de.alm	ccq_de.alf
French	ccq_fr.alm	ccq_fr.alf
Italian	ccq_it.alm	ccq_it.alf
Portuguese	ccq_pt.alm	ccq_pt.alf
Simplified Chinese	ccq_zh.alm	ccq_zh.alf
Korean	ccq_ko.alm	ccq_ko.alf

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Language	ALM File Name	ALF File Name
Japanese	ccq_ja.alm	ccq_ja.alf
Thai	ccq_th.alm	ccq_th.alf
Traditional Chinese	ccq_zt.alm	ccq_zt.alf

When you configure your database and generate your application, Database Designer uploads the message file to the database.

You can add, delete, and edit messages and their translations in the String Table **Properties** tab.

To translate string table messages:

1. Under the **Localization** placeholder, select **String Table** in the tree view.
The String Table **Properties** tab opens and displays all available string table messages.
2. In the String Table **Properties** tab, select the message to be translated.
3. Select the message text in the **String Text** column.
4. Delete the message text and type in the translation.
5. Select **File > Save** to save the ADL file with the localized string table entries and generate the ALM file.

Deleting string table messages

If you delete a string table message that is connected to a form, the Avaya Business Application will not be able to display the message to the user.

To delete a string table message.

1. In the String Table **Properties** tab, select the message to be deleted.
2. Select **Delete**.

Translating forms

Forms are organized by type of data (such as calls or customers) and by specific task (such as data entry and data management). A form contains one or more groups. Each group contains one or more objects.

The objects appear to an application user as fields, text boxes, combo boxes, and buttons within a group in a form. For more information about how forms work in an application, see the *IC Database Designer User Guide* or the Database Designer online help.

You can translate the following within a form:

- [Translating form titles](#). Identify the type of data or activity in the workflow that the user can perform with the form.
- [Translating group labels](#). Identify the tasks the user needs to perform to complete the workflow.
- [Translating object labels](#). Identify the steps within the tasks, and the type of data that the user can review, edit, or add to the database with the object.

Translated titles and labels can be longer or shorter than the US English versions provided with the out-of-the-box application. After you localize the form, open the Layout Editor from the localized form and make the necessary adjustments to the [Adjusting the form layout](#) required by the translated object labels.

The language you use to translate titles and labels must be the same language you entered in the INI file when you enabled localization. If the Localization placeholder does not appear in the Database Designer tree view, you must enable localization as described in [Enabling Database Designer for localization](#) on page 545).

Translating form titles

The form title identifies the contents of a form and appears on a button above the browser section. We recommend that the form title reflect the workflow in the form.

To translate a form title:

1. Under the **Localization** placeholder, double-click **Forms** in the tree view.
2. Select the form to be translated to open the Form **Properties** tab.
3. Type the translation of the title in the **Translated** text box.
4. Select **File > Save**.

Translating group labels

The group label identifies the contents of a group and is displayed in a form in:

- The heading for the group
- The tab for the associated browser.

The group label usually reflects the name of the group's anchor table alias. For more information about how groups work in an application, see the *IC Database Designer User Guide* or the Database Designer online help.

To translate a group label:

1. Under the **Localization** placeholder, double-click the desired form to view a list of the groups.
2. Select the group to open the Group **Properties** tab.
3. Type the translation of the title in the **Translated** text box.
4. Select **File > Save**.

Translating object labels

The object label identifies the contents of the object. For most objects, the label text appears to the left of the object in the application interface. For more information about the types of objects, their data types, and how they work in an application, see the *IC Database Designer User Guide*.

You can translate the labels for all objects in a group, including text boxes, long text fields, date/time widgets, buttons, and right-click menu options.

To translate an object label:

1. Under the **Localization** placeholder, double-click the desired form to view a list of the groups.
2. Select the group that contains the objects to be translated to open the Group **Properties** tab.
3. In the **Object Properties** group, select in the **Translated Caption** column for the object to be translated, delete the existing text and type the translation.
4. When you have finished localizing the objects, select **File > Save**.

Adjusting the form layout

Translated titles and labels are frequently longer than the US English versions provided with the out-of-the-box application. Database Designer automatically adjusts:

- Size of the buttons above the search browser to the length of the form title
- Space needed for the group label.

However, Database Designer does not automatically update the layout of objects or the size of button objects to compensate for longer, translated words.

Note:

What you see in the Layout Editor is not identical to the layout of the generated Windows application. The size, spacing, and positions of some groups and controls might change in the generated application. Also, when you double-click a caption, the Layout Editor displays the text in English, not the translated text strings in the Localization node.

To update the form layout for translated labels:

1. Under the **Localization** placeholder, select the translated form.
2. Select **Edit > Form Layout** to open the Layout Editor with the translated labels.

You must open the Layout Editor from the translated form under the Localization placeholder to access the translated title and labels.

3. In the Layout Editor, you can change:
 - Spacing between objects
 - Location of objects on the form
 - Size of the control for an object label.

For specific instructions on using the Layout Editor to customize the appearance of your translated form, see *IC Database Designer User Guide*.

Translating search browsers

When a user performs a search in a Business Application, the search browser returns the results in the columns of the search browser. The browser displays the results in the same language that they were saved in the database.

You can localize the labels that appear at the top of search browser columns by translating them in Database Designer.

To translate a search browser column label:

1. Under the **Localization** placeholder, select the desired search browser to display the Browser **Properties** tab.
2. In the **Columns** list box, click in the **Translated Label** column for the column to be translated, delete the existing text and type the translation.
3. When you have finished localizing the column labels, select **File > Save**.

Translating in-form browsers

In-Form Browsers (IFBs) are displayed within a group as a table with editable columns and summary rows. Depending on the IFB, the columns display either information retrieved from the database table or information entered by the application user.

You can localize column and row labels of IFBs by translating them in Database Designer:

- Column labels
- Summary column labels
- Summary row labels.

You localize the IFB labels in the In-Form Browser **Properties** tab, accessed by selecting the IFB below the **Localization** placeholder.

Translating in-form browser column labels

IFB column labels identify the information displayed in each column. The columns can include search results for a field from the browser's anchor table alias and one or more foreign fields, or information entered by the user.

To translate IFB column labels:

1. Under the **Localization** placeholder, select the desired IFB to display the In-Form Browser **Properties** tab.
2. In the **Columns** list box, click in the **Translated Label** column for the column to be translated, delete the existing text and type the translation.
3. When you have finished localizing the column labels, select **File > Save**.

Translating in-form browser summary column labels

IFB summary columns display the subtotal for a single column of an IFB. The application uses the formula you enter through Database Designer to total up the amounts in the column. The summary column label identifies the contents of the summary field.

To translate IFB summary column labels:

1. Under the Localization placeholder, select the desired IFB to display the In-Form Browser **Properties** tab.
2. In the **Summary Columns** list box, click in the **Translated Label** column for the column to be translated, delete the existing text and type the translation.
3. When you have finished localizing the summary column labels, select **File > Save**.

Translating in-Form browser summary row labels

Summary rows are displayed in the browser one above another at the bottom of an IFB. The IFB calculates the values of summary rows from the formula specified in the IFB properties through Database Designer. Summary rows can be:

- Visible. For example, a Tax summary row where the total tax is calculated from the values in the visible Cost column.
- Invisible. For example, a Tax summary row where the total tax is calculated from a sum of individual taxes in an invisible Tax column associated with the IFB.

To translate IFB summary row labels:

1. Under the Localization placeholder, select the desired IFB to display the In-Form Browser **Properties** tab.
2. In the **Row Summary** list box, click in the **Translated Label** column for the summary row label to be translated, delete the existing text and type the translation.
3. When you have finished localizing the summary row labels, select **File > Save**.

Translating enumeration field labels

Enumeration fields display data in combo boxes with a drop-down list. An agent can select a value for the field from a fixed list of alphanumeric values, such as Red, Yellow, or Blue.

To translate enumeration field labels:

1. Under the Localization placeholder, select the desired table to display the list of tables.
2. Select the field to open the Field **Properties** tab.
3. In the **Enum Values** list box, double-click in the **Translated Caption** column for the enumeration field label that you want to translate.
4. Delete the existing text and type the translation.
5. When you have finished localizing the enumeration field labels, select **File > Save**.

Configuring a Notification server for alternate email encodings

The Notification server uses a default Microsoft Windows codepage value for the outgoing email charset. You can override this value on the **Configuration** tab of the Notification server in IC Manager.

For example, if your Avaya IC system includes a supported language, such as Traditional Chinese, which is not available in the **Language** drop-down list, you need to configure the alternate email encoding for that language.

Note:

The following instructions use Traditional Chinese email encodings as an example.

To configure a Notification server for alternate email encodings:

1. In IC Manager, double-click the Notification server in the lists of servers.
2. Select the **Configuration** tab.
3. Select **New**.
4. In the **CTI Type Editor** dialog box:
 - a. Complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple
Name	charset This field is case-sensitive.
Value	<i>EmailCharset</i> where EmailCharset is the character set for the supported language. For example, type iso-2022-jp for Japanese or Big5 for Traditional Chinese.

- b. Select **OK**.
5. Select **OK**.
6. Stop and restart the Notification server.

Configuring an HTTP Connector server for Traditional Chinese

To configure an HTTP Connector server for Traditional Chinese:

1. In IC Manager, double-click the HTTP Connector server in the lists of servers.
2. Select the **Configuration** tab.
3. Select **New**.
4. In the **CTI Type Editor** dialog box:
 - a. Complete the fields as shown in the following table:

Field	Recommended entry
CTI Type	Couple
Name	charsetmap This field is case-sensitive.
Value	Big5:Big5

- b. Select **OK**.
5. Select **OK**.
6. Stop and restart the HTTP Connector server.

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