



Avaya™ Interaction Center

Release 6.1

Installation Planning and Prerequisites

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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)
- Mischief (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.

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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**.

Avaya Training

Avaya provides training for Avaya Operational Analyst. For more information, contact Avaya University at:

Web site: http://www.avaya-learning.com/logon_form.asp

E-mail address: avaya.u.helpdesk@accenture.com

US telephone: 1-800-288-5327

Outside US telephone: +1-303-406-6089

Comments

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

Acknowledgment

This document was written by the CRM Information Development group.

Avaya™ Interaction Center
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Before you begin

This section includes the following topics:

- [Typographical conventions](#) on page 11.
- [Notes, tips, and cautions](#) on page 12.
- [Contacting Technical Support](#) on page 12.
- [Product documentation](#) on page 13.
- [Educational services](#) on page 15.

Typographical conventions

This guide uses the following font conventions:

Font Type	Meaning
<code>command</code>	This font signifies commands, information that you enter 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.

License to print the electronic documentation

Online copies of documentation are included on the CD-ROM that accompanies every software release. An Avaya customer who has licensed software (a "Licensee") is entitled to make this online documentation available on an internal network or "intranet" solely for the Licensee's use for internal business purposes. Licensees are granted the right to print the documentation corresponding to the software they have purchased solely for such purposes.

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- Through the web at http://www.avaya-learning.com/logon_form.asp
- Over the telephone at 800-288-5327 (within the U.S.) +001 303-406-6089 (outside of the U.S.)
- Through email at Avaya.U.Helpdesk@accenture.com

Before you begin



Chapter 1: Introduction

Avaya™ Interaction Center (Avaya IC) is a multimedia contact center solution that provides a blended channel management solution for voice, web, and email contacts.

Avaya IC combines server and client applications to allow enterprises and other organizations to manage information. Avaya IC provides a single view of the customer, a single set of business rules and workflows, and a single agent interface across all media.

Avaya IC can:

- Manage high volumes of customer contacts
- Support a broad range of communication channels
- Deliver consistent and integrated customer service
- Capture, manage, and derive business value from all relevant customer information

This section provides an overview of Avaya IC, including the following topics:

- [Supported languages](#) on page 18.
- [Avaya IC Readme](#) on page 19.
- [Avaya IC documentation](#) on page 19.
- [Avaya IC components](#) on page 20.
- [Avaya Operational Analyst](#) on page 29.
- [Improved security for Avaya IC accounts](#) on page 29.
- [Avaya IC implementation roles](#) on page 30.

Supported languages

Avaya IC supports the following languages, including localized interfaces and localized online help systems for agent desktop applications:

- English
- German
- French
- Italian
- Spanish
- Portuguese
- Japanese
- Korean
- Chinese
- Thai

Deployment of an Avaya IC system is a complex task that requires careful planning. Before you can install and configure your Avaya IC system, review the information in this manual to ensure that your system includes all necessary prerequisites.

This manual includes the following information to help you plan, install and configure an Avaya IC system:

- Deployment planning information, including sample deployment scenarios
- Minimum system requirements to install and run Avaya IC on the supported Windows operating systems
- Minimum system requirements to install and run Avaya IC servers on the supported Solaris operating systems
- Minimum system requirements to install and run Avaya IC servers on the supported AIX operating systems
- Network configuration requirements for Avaya IC
- Supported hardware and software platforms for required third party applications
- Information on how to install and configure third party applications required by Avaya IC

Avaya IC Readme

You must carefully review the *Avaya Interaction Center 6.1 Readme* file and the *Avaya Interaction Center 6.1 Readme Addendum* before you plan your Avaya IC deployment, or install and configure your Avaya IC system. You can print the Readme file and Readme Addendum or view them online.

The Readme file contains last-minute information about Avaya IC 6.1 that was not available for the publication of this documentation. The Readme file is available on the Avaya Interaction Center CD-ROM and on the Avaya CRM Technical Support Website at <http://www.avaya.com/support/qg>.

The Readme Addendum contains information that became available after the publication of the Readme file, if any. The Readme Addendum is available on the Avaya CRM Technical Support Website at <http://www.avaya.com/support/qg>.

To access the Readme file:

- If your Avaya Interaction Center CD-ROM automatically opens the installation application when you put the CD-ROM in your drive, click **Readme** in the Avaya Interaction Center Installation.
- If your Avaya Interaction Center CD-ROM does not automatically open the installation application, navigate to the Readme file in the root directory of the Avaya Interaction Center CD-ROM: `<cd-rom_drive>:\README.htm`

Avaya IC documentation

The following topics describe the locations where you can access Avaya IC documentation in PDF format:

- [Avaya Interaction Center CD-ROM](#) on page 19.
- [Avaya Interaction Center Documentation CD-ROM](#) on page 20.
- [Documentation directory on an Avaya IC machine](#) on page 20.
- [Avaya CRM Technical Support Website](#) on page 20.

Avaya Interaction Center CD-ROM

PDF files for all documentation are in the Doc directory on the Avaya IC CD-ROM for Windows.

Avaya Interaction Center Documentation CD-ROM

The PDF files on this CD-ROM also include the *Avaya IC Product Documentation Guide*.

Documentation directory on an Avaya IC machine

This directory includes all documentation that relates to the Avaya IC components on the machine. To access the documentation on an Avaya IC machine, perform one of the following tasks:

- Navigate to the default documentation directory at: `... \IC61 \doc`
- For Windows only, perform the following steps:
 1. Select **Start > Programs > Avaya Interaction Center 6.1 > Online Documentation**
 2. Select the Documentation Index file for the desired component type.
 3. In the Documentation Index file, click the link for the document that you want to view.

Avaya CRM Technical Support Website

All Avaya IC 6.1 documentation is available on the Avaya CRM Technical Support Website at <http://www.avaya.com/support>.

Avaya IC components

You can deploy Avaya IC in a variety of configurations. A typical configuration includes several Avaya IC components.

Every Avaya IC system requires the mandatory components described in the following sections:

- [Avaya IC core servers](#) on page 21
- [Avaya IC Design & Administration Tools](#) on page 21
- [Agent desktop applications](#) on page 23

Each Avaya IC system can integrate all available media channels, or can include only one media channel. An Avaya IC system can also include a combination of other optional components. The following sections describe the optional components of Avaya IC:

- [Avaya Computer Telephony for IC](#) on page 25
- [Web Management](#) on page 25
- [Avaya Email Management](#) on page 26
- [Avaya Outbound Contact Management](#) on page 26
- [Avaya Business Advocate for Avaya IC](#) on page 27
- [Avaya Content Analyzer](#) on page 28
- [Avaya IC for Siebel 7](#) on page 28

Avaya IC core servers

The Avaya IC core servers are the core of the Avaya IC architecture. The Avaya IC core servers are a collection of server applications that provide services to manage communication between internal and external components, and to control the routing of contacts. For example, the Avaya IC core servers manage communication between the following components:

- Telephony equipment, such as ACDs, PBXs, and IVRs
- Internet applications, such as Web, Email, and VOIP applications
- Database servers
- Avaya IC administrative tools
- Avaya IC client applications

For more information about Avaya IC core servers, see [Avaya IC core servers](#) on page 34.

Avaya IC Design & Administration Tools

The Avaya IC Design & Administration tools include:

- [IC Manager](#)
- [Avaya Workflow Designer](#)
- [Avaya Database Designer](#)

IC Manager

IC Manager is an administrative application that monitors, manages, and configures Avaya IC. With IC Manager, contact center supervisors and system administrators can:

- Add, delete, and modify information for agents, servers, and devices
- Start, stop, and configure Avaya IC servers
- Monitor server, agent, and device activities

Avaya Workflow Designer

Avaya Workflow Designer is a customization tool for workflows. Workflow Designer includes sample workflows and pre-defined blocks. You can use Workflow Designer to design, create, and compile:

- Routing workflows that control the routing of contacts through all media channels, and manage the related data during the initial stages of a contact
- Blending workflows that implement business rules to define how agents handle contacts across multiple media
- Email analysis workflows that analyze and process inbound and outbound email contacts
- Agent scripts that can be stored and run on the application or on an internet browser
- Business Advocate workflows that qualify contacts for Business Advocate routing

You can also use Workflow Designer to create and compile custom flows to meet the needs that are specific to the needs of your enterprise and your contact center.

Avaya Database Designer

Avaya Database Designer is a customization tool that lets you customize Avaya Business Applications and configure Avaya IC databases. With Database Designer, you can:

- Set database connections
- Customize Business Applications, including the database structure, the graphical user interface, and the business rules
- Configure databases and database connections for Avaya IC, Business Advocate, and Outbound Contact
- Create data sources for servers to access the database
- Generate a Windows-based Business Application or a Web-based WebQ application
- Upload the application interface, help files, data model, and IC Scripts to the database when you implement:
 - Avaya Agent
 - Avaya Business Applications

Agent desktop applications

The Avaya Agent desktop can include one or more of the following applications:

- Avaya Agent
- CallCenterQ
- CallCenterQ for Consumer Relations
- CustomerQ
- ListQ
- Report Wizard
- Interaction Center
- WebQ
- Custom Business Application

This section includes the following topics that describe the primary agent desktop applications:

- [Avaya Agent](#) on page 23.
- [CallCenterQ](#) on page 24.
- [CallCenterQ for Consumer Relations](#) on page 24.
- [CustomerQ](#) on page 25.
- [HRQ](#) on page 25.

Avaya Agent

Avaya Agent is an agent desktop application that integrates multiple media channels and agent applications. With Avaya Agent, an agent can:

- Handle inbound contacts from customers and others in multiple media, such as voice, email, chat, and voice chat
- Handle outbound voice contacts to customers and others
- Access and review information about a customer from the Avaya IC database

Avaya Agent can include media channels from the following applications:

- [Avaya Computer Telephony for IC](#)
- [Web Management](#)
- [Avaya Email Management](#)
- [Avaya Outbound Contact Management](#)

CallCenterQ

CallCenterQ is a powerful desktop application for large, multi-function contact centers. With CallCenterQ:

- Contact center managers can gather the metrics they need to make intelligent decisions about resource allocation and productivity
- Marketing managers can set up, administer, and analyze sales and marketing campaigns
- Agents can:
 - Handle service requests
 - Manage contacts
 - Track collateral inventories
 - Generate personalized letters

You can configure the following versions of CallCenterQ:

- Contact-based CallCenterQ
- Request-based CallCenterQ

For more information, see *CallCenterQ Administration*.

CallCenterQ for Consumer Relations

CallCenterQ for Consumer Relations is a variation of CallCenterQ that provides customer relationship management software designed specifically for companies that provide consumer services or sell consumer packaged goods. CallCenterQ for Consumer Relations gives agents the information they need to resolve customer issues. This information includes:

- History of customers' previous transactions
- Data from complex distribution channels
- Specific information about particular product brands.

CallCenterQ for Consumer Relations also allows agents to compensate customers, or to issue vouchers to customers, so the agents can resolve issues quickly and cost-effectively.

You can configure the following versions of CallCenterQ for Consumer Relations:

- Contact-based CallCenterQ for Consumer Relations
- Request-based CallCenterQ for Consumer Relations

For more information, see *CallCenterQ Administration*.

CustomerQ

CustomerQ is a powerful system designed for internal call centers and help desks. It captures, stores, and retrieves critical information instantly through an easy-to-use interface. CustomerQ can also retrieve information from multiple knowledge bases.

With CustomerQ, internal call center agents can address business issues quickly and intelligently. You can also use generate a Web-based WebQ application from the CustomerQ application design file.

HRQ

HRQ is the first comprehensive contact center solution designed to help human resource departments and employee service centers provide personalized service over the telephone, on the Web, or via corporate intranets.

HRQ provides instant, accurate information to HR professionals, enabling them to better serve the needs of their “customers,” including employees, recruiters, and benefits providers.

Avaya Computer Telephony for IC

Avaya™ Computer Telephony for IC (Telephony) is a computer telephony integration solution that seamlessly links computers, telephones, voice, and data to provide intelligent call qualification and routing in conjunction with voice and data collection. This solution has an open, scalable architecture that integrates with the most popular PBXs, ACDs, and IVRs to maximize a company's investment in its telephony infrastructure.

Web Management

Avaya™ Web Management (Web Management) is a Web-based marketing, sales, and service application that personalizes and manages Web transactions across the enterprise. Web Management includes integrated functionality for:

- Web self-service
- Live customer interaction through chat contacts and voice chat contacts
- Email functionality in your customer Web site

Web Management provides access to these features through multiple Web channels, including Web chat, Web-driven customer callback, and real-time, browser-based collaboration and navigation.

Introduction

By providing customers with direct Web-based service, Web Management can:

- Increase buy-to-browse ratios
- Let your customers handle multiple tasks during a single Web visit
- Reduce the costs associated with telephone-based service, because customers can get more done on the Web

Avaya Email Management

Avaya™ Email Management (Email Management) is an application that helps contact centers effectively manage the increasing volume of customer email with intelligent email routing and automated response capabilities.

Email Management uses rules-based email management technology to analyze incoming messages and compose personalized answers that can be automatically sent to a customer or queued for review by an agent. Email Management uses data from the IC Repository database and from external sources to help develop highly personalized responses.

Avaya Outbound Contact Management

Avaya™ Outbound Contact Management (Outbound Contact) works with your telephony switch to provide outbound calling features.

With Outbound Contact, agents can handle predictive, preview, and automatic outbound calling. Outbound Contact includes “agent blending” for media channels. With agent blending, agents can switch to other media channels when needed, including inbound telephone calls, email, and Web contacts.

With Outbound Contact, managers and supervisors in contact centers can associate a list of customer telephone numbers with specific goals and calling activities.

Managers and supervisors use Outbound Contact to perform the following tasks:

- Define the enterprise settings for the dialers installed across the enterprise.
- Specify the region for each enterprise dialer.
- Create one or more outbound jobs for an outbound calling campaign.
- Import customer telephone numbers into the database.
- Set up calling lists.
- Load one or more outbound jobs into a dialer.
- Disconnect from the current dialer and connect a different dialer, and load one or more jobs into the dialer.

- Monitor calling activities on the dialers, one at a time.
- Manage jobs on individual dialers.

Outbound Contact works with the following reports to help you monitor the outbound calling activities in your contact center:

- Operational Analyst provides real-time monitoring for agent and job information.
- Outbound Contact Reports generates Scheduled Calls Reports and Call Activity Reports.

For more information about Outbound Contact, see *IC Administration Volume 2: Agents, Customers, & Queues* and *Avaya Agent User's Guide*.

Avaya Business Advocate for Avaya IC

Avaya™ Business Advocate is a system based application that manages email, web chat, and voice contacts. Business Advocate understands the needs of each service that you offer to your customers. With that understanding, Business Advocate allocates agent resources to those services to meet the service levels set by you and expected by your customers.

Business Advocate provides fully integrated multimedia, multi-site management of all your contacts.

Business Advocate integrates the following Avaya IC components:

- [Avaya Computer Telephony for IC](#)
- [Web Management](#)
- [Avaya Email Management](#)

With Business Advocate, you can dynamically increase and decrease your agent resource pool. Business Advocate monitors contacts, service classes, and agents in real time. Business Advocate uses the information from the real-time monitoring to apply your agent resources where they are most needed.

You can use Business Advocate Supervisor to administer Business Advocate, including:

- Specify the service classes for your contacts.
- Assign agents to handle contacts in those service classes.

Avaya Content Analyzer

Avaya™ Content Analyzer (Content Analyzer) is an optional Avaya IC component that performs content analysis on incoming and outgoing email. Content Analyzer applies complex, natural language algorithms to the content of email contacts, and derives a statistically-based match between the intention of that text and a list of pre-applied topics.

With Content Analyzer, you can automatically:

- Identify the language that a customer uses in an email contact
- Route email contacts to agents, according to topic and agent skills
- Screen out email to which the contact center does not want to respond
- Suggest responses for agents to use when an agent responds to an email contact
- Respond to email contacts automatically without agent intervention

Content Analyzer can identify sixteen languages. Content Analyzer can also identify the primary language in an email contact that contains text in more than one language.

However, Content Analyzer cannot analyze the text of email contacts in all languages that it can identify. Content Analyzer can analyze and classify text in the following languages:

- English
- French
- German
- Spanish
- Japanese

Avaya IC for Siebel 7

The Avaya Interaction Center for Siebel 7 integration combines Avaya IC with the Siebel 7 application. Avaya IC for Siebel 7 provides the customer management features of Siebel 7 with the contact management and routing features of Avaya IC. With this integration, the agents in your contact center can provide a unique and customized interaction with each customer. Each agent will:

- Receive work items that are appropriate for the set of skills of that agent
- Perform contact work in multiple media channels
- Access any historical data about work previously performed for a specific customer

In Avaya IC for Siebel 7, all agent interactions occur through the Siebel Communications Toolbar.

For detailed information about the planning and prerequisites that are required for Avaya IC for Siebel 7, see *Avaya IC for Siebel 7 Integration*, which is available on the Avaya IC for Siebel 7 installation CD-ROM.

Avaya Operational Analyst

Avaya™ Operational Analyst (Avaya OA) is a required component of Avaya IC. Avaya OA performs operational reporting for a multimedia contact center, smoothly growing from single channel analysis, to full interaction, multi-channel analysis with a common data model and user interfaces across these systems.

Avaya OA provides reporting tools that show you summary and detail information about the contact activity at your contact center.

With Avaya OA, you can:

- Create and maintain customized reports that enable managers to monitor contact center, marketing, and service activities
- Build PowerPlay data cubes, then view the summary information in the cube and drill through to more detailed information in the CallCenterQ and IC Repository databases.
- Use business reporting features to distinguish and detail contacts leading to sales, fulfillment requests, or customer service requests.

For more information about Avaya OA and its prerequisites, see *Avaya Operational Analyst Installation Planning and Prerequisites*.

Improved security for Avaya IC accounts

With this release Avaya IC has improved security for agent and administrator accounts and passwords. The improved security includes configurable parameters for Avaya IC accounts, such as:

- Maximum log-in attempts before account is disabled
- Rules for password change intervals
- Rules for password validity, such as minimum and maximum number of alphabetic and numeric characters
- Records of the creation and changes to all login accounts

These new security features help defend the Avaya IC system against unauthorized users and malicious use.

For more information about how to configure these parameters, see *IC Administration Volume 2: Agents, Customers, & Queues*.

Avaya IC implementation roles

Implementation of an Avaya IC system requires knowledgeable resources. The number of resources and their knowledge depends on your environment and the complexity of the installation.

An implementation team can include representatives from Avaya, an Avaya Business Partner, and the customer. Members of an implementation team can perform more than one role.

The complexity of your Avaya IC installation depends on many factors, such as:

- How many media channels are in your Avaya IC system
- Which third party systems you need to integrate with your Avaya IC system
- What business processes you want to implement in your Avaya IC system

The following table lists the different roles that Avaya IC projects may require. This table does not include the roles that Avaya OA may require. For information about the requirements of Avaya OA, see *Operational Analyst Installation and Maintenance*.

Role	Responsibility
Project manager	Coordinates developer tasks, manages the project plan, and provides status to management and project sponsors.
Architect	Designs the physical and logical system architecture. Provides designs for complex integrations and logic. Assists other developers with designs and issues. Designs the physical and logical server architecture.
Network administrator	Establishes user network accounts. Monitors the network using network operating system tools or network hardware tools to ensure adequate performance and to diagnose network related issues.
Application and workflow designer	Determines requirements for application and workflow customizations. Works with the Project Manager to determine estimates for requirement implementation.
Database administrator	Works with the database operating system tools. Installs the database server and required client components. Establishes required database accounts. Tunes the database for optimal performance. Ensures security and database integrity. Ensures standards for data normalization and data attributes. Can diagnose database connectivity and performance issues.

Role	Responsibility
Data modeler	Uses Database Designer to modify database tables and data definitions to meet customer requirements. Assists interface designers by adding table fields, table sets, browsers, and table relations to enable customer required functionality.
Interface designer	For Avaya Business Applications, uses Database Designer to modify form layout designs that use fields in the data model and custom attributes. For Avaya Agent, uses XML to modify the layout of the interface.
Business logic developer	Uses scripting language to ensure that business logic and IC Scripts perform to requirements. Business logic includes checking and verifying program flow, logic, and data entered by users.
Media routing workflow developer	Uses Workflow Designer to modify or create routing workflows for media contacts, including phone contacts, Web contacts, email contacts, and voice chat contacts. Tests flows with the Workflow servers to make sure they perform correctly and meet performance needs.
Prompter workflow developer	Uses Workflow Designer to modify or create prompting flows as required by the needs of your contact. Prompter flows can assist agents with typical tasks and provide the scripts for agents to follow during contacts with customers.
Integration test analyst	Designs and runs tests that exercise the developed system. Verifies that the configuration and customization do not cause the Avaya IC system to fail. Can use tools such as WinRunner to automate testing processes.
System test analyst	Designs and runs tests that exercise the developed system in accordance with the business processes of your contact center. Can use tools such as WinRunner to automate testing processes.
Server and Workstation software specialist	Installs software on servers and client machines. Configures the software to operate to the specifications for failover and redundancy. Creates installation procedures or workstation images to enable rapid deployment of agent workstations.
Project librarian	Establishes source code management system and implements rules for developers to check out and check in their source code. Merges changes from multiple developers, if required. Creates software builds for integration tests, system tests, and production environments.

Introduction

Role	Responsibility
Data migration specialist	Analyzes existing data in legacy systems and creates programs or manual procedures to populate data fields in the new system.
Telephony specialist	Uses Telephony tools to establish agent accounts. Creates or modifies telephony vectors or similar components to enable communication with the Avaya IC Telephony server. Configures the Avaya IC Telephony server for optimal performance.
Email specialist	Uses email server tools to establish mail boxes and accounts required for the Avaya IC system. Configures and uses existing email tools to optimize flow of email data. Configures or creates Content Analyzer rules for auto response and auto reply functionality.
Web specialist	Customizes customer-facing Web pages to insert links for Avaya Web Management. Enables, configures, and customizes Web options and Web pages to meet the requirements of your contact center.
Reporting specialist	Uses Avaya OA to create or customize reports to meet the needs of your contact center.
Business Advocate specialist	Understands, implements, and tunes routing and configuration in Business Advocate for maximum performance.

Chapter 2: Required software components

Before you plan or install an Avaya™ Interaction Center (Avaya IC) system, you need to know the following:

- Which servers are required by the components in the Avaya IC system?
- Which third party software is required for the components in the Avaya IC system?

This section includes the following topics to help you answer these questions for the different components of Avaya IC:

- [Required software for the core servers](#) on page 34.
- [Required software for Telephony and Outbound Contact](#) on page 36.
- [Required software for Web Management](#) on page 42.
- [Required software for Email Management and Content Analyzer](#) on page 44.
- [Required software for optional Avaya IC servers](#) on page 46.
- [Required software for Business Advocate](#) on page 49.
- [Required software for Avaya IC for Siebel 7](#) on page 55.
- [Required software for Design & Administration Tools](#) on page 56.
- [Required software for agent desktop applications](#) on page 57.
- [Required software for customers of Web Management](#) on page 59.

Tip:

Avaya IC does not use JRun as the servlet container for Web applications. Avaya IC now uses and installs Tomcat as the servlet container. You do not need to acquire Tomcat.

A detailed discussion of all the possible configurations for these services is beyond the scope of this manual. For more information about Avaya IC components and how they can meet your business needs, consult an Avaya IC specialist.

These topics do not include information about required software for Avaya OA. For more information about Avaya OA and its prerequisites, see *Avaya Operational Analyst Installation Planning and Prerequisites*.

Required software for the core servers

The Avaya IC core servers are a collection of server applications that provide services to manage communication between internal and external components, and to control the routing of contacts.

The core servers are required by all Avaya IC systems. However, some core servers, such as the DUStore server, are not required in all Avaya IC systems. To determine which core servers your Avaya IC system requires, see the appropriate deployment scenario in one of the following chapters:

- [Avaya IC single site deployment scenarios](#) on page 93.
- [Avaya IC multi-site deployment scenarios](#) on page 121.

This section describes the lists the Avaya IC core servers and the prerequisite software required to support those servers. This section includes the following topics:

- [Avaya IC core servers](#) on page 34.
- [Prerequisites for the core servers](#) on page 35.

Avaya IC core servers

The following table shows the Avaya IC core servers.

Component	Servers
Required core servers	<ul style="list-style-type: none">● ADU server● Alarm server● Blender server● Data server● Directory server● EDU server● License server● ORB server● Notification server● Report server● Workflow server
Optional core servers	<ul style="list-style-type: none">● DUStore server● HTTP Connector server

Machines that host core servers frequently host the Tomcat server for Web License Manager.

Prerequisites for the core servers

The following table shows the software that you must install on machines that host one or more core servers or on a machine that communicates with a core server machine.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. Avaya IC core servers do not support emulations or variants of this required software.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All core server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Databases	Machine that hosts Avaya IC databases	<ul style="list-style-type: none"> ● SQL Server 2000 SP3 OR <ul style="list-style-type: none"> ● Oracle 8.1.7 	Oracle 8.1.7	DB2 UDB 7.2 FP9
Database client	All core server machines	<ul style="list-style-type: none"> ● SQL Server 2000 client SP3 OR <ul style="list-style-type: none"> ● Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All core server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All server machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Web server	Machine that can communicate with Web License Manager	Microsoft Internet Information Server (IIS) 5.0	Sun™ ONE Web Server 6.0 SP5	IBM HTTP Server 1.3.26
Java SDK	Machine that hosts Web License Manager	Sun JDK 1.3.1_06	Sun JDK 1.3.1_06	IBM JDK 1.3.1 32 bit build ca131-20030329

Required software components

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Email servers	Machine that can communicate with Notification server machine.	SMTP and POP3 compliant email servers	SMTP and POP3 compliant email servers	SMTP and POP3 compliant email servers
Web browser	Machine that hosts Web License Manager	Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0

Required software for Telephony and Outbound Contact

Telephony components and Outbound Contact components provide services that manage communication between switches and Avaya IC, and control the routing of voice contacts.

This section lists the servers that support Telephony and Outbound Contact for Avaya IC and the prerequisite software for those servers. This section includes the following topics:

- [Telephony servers and Outbound Contact servers](#) on page 36.
- [Prerequisites for Telephony servers and Outbound Contact servers](#) on page 38.

Telephony servers and Outbound Contact servers

The following table shows the servers that support Telephony and Outbound Contact.

Component	Servers
Required Telephony servers	<ul style="list-style-type: none">● Telephony server
Optional Telephony servers	<ul style="list-style-type: none">● Telephony Queue Statistics server● VOX server
Outbound Contact servers	<ul style="list-style-type: none">● Dialing Kernel server● SoftDialer server● Required Telephony servers on page 36

Required software for Telephony and Outbound Contact

Component	Servers
Required core servers for Telephony and Outbound Contact	<ul style="list-style-type: none">● Required core servers on page 34
Optional core servers for Telephony and Outbound Contact	For systems with multiple server machines, install additional core servers as described in the following sections: <ul style="list-style-type: none">● Avaya IC single site deployment scenarios on page 93● Avaya IC multi-site deployment scenarios on page 121

Prerequisites for Telephony servers and Outbound Contact servers

The following table shows the software that you must install on machines that host one or more servers for Telephony or Outbound Contact.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. These servers do not support emulations or variants of this required software.

Certain switches and software support only certain functions and components of Avaya IC. For more detailed information, see [Supported Telephony switches and software](#) on page 223.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Database client	All server machines	<ul style="list-style-type: none"> ● SQL Server 2000 client SP3 OR <ul style="list-style-type: none"> ● Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search

Required software for Telephony and Outbound Contact

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Avaya switches and software	As required by switch or software	Definity G3 R8.3, R9, R10 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States 	Definity G3 R8.3, R9, R10 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States 	Definity G3 R8.3, R9, R10 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States
		Communication Manager 1.1, 1.2, 1.3 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● 8700 Media server or Definity servers (R, SI, CSI) 	Definity G3 R10 Communication Manager 1.1, 1.2, 1.3 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● 8700 Media server or Definity servers (R, SI, CSI) 	Definity G3 R10 Communication Manager 1.1, 1.2, 1.3 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● 8700 Media server or Definity servers (R, SI, CSI)

Required software components

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Aspect switches and software	As required by switch or software	Aspect 8.3 <i>Required software:</i> <ul style="list-style-type: none"> ● Aspect Contact Server (Portal) ● Aspect CMI server version 4.X ● Aspect Real-time Receiver Custom Control runtime version ● Aspect App Bridge Admin tool 	Not supported.	Not supported.

Required software for Telephony and Outbound Contact

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Nortel switches and software	See Nortel Meridian switches and middleware on page 228.	<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Meridian Link ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● Meridian MAX version 9 with MSI 	<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Meridian link ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● IBM DCE 3.1 with patch 6 ● Meridian MAX version 9 with MSI 	Not supported.
		<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Symposium Call Center Server 4.2 ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● Real Time Data Interface Toolkit 	<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Symposium Call Center Server 4.2 ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● IBM DCE 3.1 with patch 6 ● Real Time Data Interface Toolkit 	Not supported.

Required software for Web Management

Web Management components provide services for the following Avaya IC features:

- Web Management
- Email Management
- Voice Chat

This section lists the servers that support the Web Management and the prerequisite software for those servers. This section includes the following topics:

- [Web Management servers](#) on page 42.
- [Prerequisites for Web Management servers](#) on page 43.

Web Management servers

The following table shows the servers that support Web Management in Avaya IC.

Component	Servers
Required Web Management servers	<ul style="list-style-type: none"> ● WebACD server ● ComHub server ● Paging server ● Attribute server ● Tomcat server for Website ● ICM server
Optional Web Management servers	<ul style="list-style-type: none"> ● Central Internet Routing Service (CIRS)
Required servers for Voice Chat	<ul style="list-style-type: none"> ● Required Web Management servers on page 42 ● Required Telephony servers on page 36 ● Voice Media Manager (VMM) server
Required servers for Scheduled Call	<ul style="list-style-type: none"> ● Required Web Management servers on page 42 ● Outbound Contact servers on page 36
Required core servers for Web Management	<ul style="list-style-type: none"> ● Required core servers on page 34 ● Secondary EDU server for chat contacts
Optional core servers for Web Management	<p>For systems with multiple server machines, install additional core servers as described in the following sections:</p> <ul style="list-style-type: none"> ● Avaya IC single site deployment scenarios on page 93 ● Avaya IC multi-site deployment scenarios on page 121

Prerequisites for Web Management servers

The following table shows the software that you must install on machines that host one or more Web Management servers.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. Web Management servers do not support emulations or variants of this required software.

Note:

The Voice Media Manager (VMM) service required for Voice Chat does not support AIX. You must host the VMM on a Windows or Solaris machine. Voice Chat does not function with the VMM on AIX.

For information about the browsers supported for customers who access the Website, see [Required software for customers of Web Management](#) on page 59.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Database client	All server machines	<ul style="list-style-type: none"> • SQL Server 2000 client SP3 OR • Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Web server	Machine that can communicate with Website	Microsoft Internet Information Server (IIS) 5.0	Sun™ ONE Web Server 6.0 SP5	IBM HTTP Server 1.3.26
Java SDK	Machines that host one or more Websites	Sun JDK 1.3.1_06	Sun JDK 1.3.1_06	IBM JDK 1.3.1, 32 bit build ca131-20030329
Web browser	Machines that host one or more Websites	Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0

Required software for Email Management and Content Analyzer

Email Management and Content Analyzer components manage communication between email servers and Avaya IC, and control the routing of email contacts.

This section lists the servers that support Email Management and Content Analyzer for Avaya IC and the prerequisite software for those servers. This section includes the following topics:

- [Email Management servers and Content Analyzer servers](#) on page 44.
- [Prerequisites for Email Management servers and Content Analyzer servers](#) on page 45.

Email Management servers and Content Analyzer servers

The following table shows the servers that support Email Management and Content Analyzer.

Component	Servers
Required Email Management servers	<ul style="list-style-type: none"> ● Email server ● Tomcat server for Email Template Administration
Required Web Management servers for email	<ul style="list-style-type: none"> ● WebACD server ● Paging server ● ComHub server
Content Analyzer servers	<ul style="list-style-type: none"> ● Required Email Management servers on page 44 ● Required Web Management servers for email on page 44 ● Content Analyzer administration server ● Content Analyzer operation server
Required core servers for Email Management and Content Analyzer	<ul style="list-style-type: none"> ● Required core servers on page 34 ● DUStore server ● Secondary EDU server for chat contacts
Optional core servers for Email Management and Content Analyzer	<p>For systems with multiple server machines, install additional core servers as described in the following sections:</p> <ul style="list-style-type: none"> ● Avaya IC single site deployment scenarios on page 93 ● Avaya IC multi-site deployment scenarios on page 121

Prerequisites for Email Management servers and Content Analyzer servers

The following table shows the software that you must install on machines that host one or more servers for Email Management or Content Analyzer.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. These servers do not support emulations or variants of this required software.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Database client	All server machines	<ul style="list-style-type: none"> • SQL Server 2000 client SP3 OR • Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Email servers	Machine that can communicate with Email server machine.	SMTP and POP3 compliant email servers	SMTP and POP3 compliant email servers	SMTP and POP3 compliant email servers
Web server	Machine that can communicate with Email Template Administration	Microsoft Internet Information Server (IIS) 5.0	Sun™ ONE Web Server 6.0 SP5	IBM HTTP Server 1.3.26
Java SDK	Machine that hosts Email Template Administration	Sun JDK 1.3.1_06	Sun JDK 1.3.1_06	IBM JDK 1.3.1, 32 bit build ca131-20030329
Web browser	Machine that hosts Email Template Administration	Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0

Required software for optional Avaya IC servers

The optional Avaya IC servers support the following features:

- Letter Generator
- QKnowledge
- WebQ

This section lists the optional servers and describes the prerequisite software required to support these features. This section includes the following topics:

- [Optional Avaya IC servers](#) on page 46.
- [Prerequisites for Letter Generator](#) on page 46.
- [Prerequisites for QKnowledge](#) on page 47.
- [Prerequisites for WebQ](#) on page 49.

Optional Avaya IC servers

The following table shows the optional Avaya IC servers.

Component	Servers
Letter Generator	HTTP Connector server
QKnowledge	No additional servers required.
WebQ	<ul style="list-style-type: none">● WebQ server● WebQ Router server

Prerequisites for Letter Generator

Letter Generator includes Letter Generator and Batch Administrator.

The following table shows the software that you must install on machines that host servers and services that support Letter Generator.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed

versions. Letter Generator does not support emulations or variants of this required software.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Database client	All server machines	<ul style="list-style-type: none"> • SQL Server 2000 client SP3 OR <ul style="list-style-type: none"> • Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Postscript language interpreter	Machine that hosts Letter Generator Web application	GhostScript 6.5	GhostScript 6.5	GhostScript 6.5
Web server	Machine that can communicate with Letter Generator Web application	Microsoft Internet Information Server (IIS) 5.0	Sun™ ONE Web Server 6.0 SP5	IBM HTTP Server 1.3.26
Java SDK	Machine that hosts Letter Generator Web application	Sun JDK 1.3.1_06	Sun JDK 1.3.1_06	IBM JDK 1.3.1, 32 bit build ca131-20030329
Web browser	Machine that hosts Letter Generator Web application	Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0	Through Admin machine: Internet Explorer 5.5, 6.0

Prerequisites for QKnowledge

QKnowledge includes Solution Search and IndexQ.

The following table shows the software that you must install on machines that host services that support QKnowledge.

Required software components

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. QKnowledge does not support emulations or variants of this required software.

Note:

QKnowledge and Index Q are not supported on Solaris or AIX. If you use a Solaris or AIX Web server for other Avaya IC Web applications, such as the Web License Manager, or the Website, you cannot use that Web server for QKnowledge.

Required software	Location	Supported versions
		Windows
Operating systems	All machines	Windows 2000 Server SP3
Time synchronization utility	All machines	Third party NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search
Web server	Machine that can communicate with QKnowledge Web application	Microsoft Internet Information Server (IIS) 5.0
Java SDK	Machine that hosts QKnowledge Web application	Sun JDK 1.3.1_06
Web browser	Machine that hosts QKnowledge Web application	Internet Explorer 5.5, 6.0

Prerequisites for WebQ

The following table shows the software that you must install on machines that host servers that support WebQ.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. WebQ does not support emulations or variants of this required software.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Database client	All server machines	<ul style="list-style-type: none"> • SQL Server 2000 client SP3 OR <ul style="list-style-type: none"> • Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Web server	Machine that can communicate with WebQ machine	Microsoft Internet Information Server (IIS) 5.0	Sun™ ONE Web Server 6.0 SP5	IBM HTTP Server 1.3.26

Required software for Business Advocate

Business Advocate for Avaya IC includes a set of servers that provide services to intelligently match agents with contacts in all supported media channels, and to manage communication with other Avaya IC servers.

This section lists the servers that support Business Advocate for Avaya IC and the prerequisite software for those servers. This section includes the following topics:

- [Business Advocate servers](#) on page 50.
- [Prerequisites for Business Advocate servers](#) on page 50.

Business Advocate servers

The following table shows the servers that support Business Advocate for Avaya IC.

Component	Servers
Required Business Advocate servers	<ul style="list-style-type: none"> ● Resource Manager server
Required servers for Business Advocate with Telephony	<ul style="list-style-type: none"> ● Telephony Services Adaptor server ● Required Telephony servers on page 36
Optional servers for Business Advocate with Telephony	<ul style="list-style-type: none"> ● VOX server
Required servers for Business Advocate with Web Management	<ul style="list-style-type: none"> ● Web Advocate Adaptor server ● Required Web Management servers on page 42
Optional servers for Business Advocate with Web Management	<ul style="list-style-type: none"> ● Required servers for Voice Chat on page 42
Required servers for Business Advocate with Email Management	<ul style="list-style-type: none"> ● Web Advocate Adaptor server ● Required Email Management servers on page 44 ● Required Web Management servers for email on page 44
Required core servers	<ul style="list-style-type: none"> ● Required core servers on page 34 ● Secondary ADU servers on each machine with a Resource Manager server ● Secondary EDU servers for contacts in supported media channels ● DUStore server for Email Management
Optional core servers	<p>For systems with multiple server machines, install additional core servers as described in the following sections:</p> <ul style="list-style-type: none"> ● Avaya IC single site deployment scenarios on page 93 ● Avaya IC multi-site deployment scenarios on page 121

Prerequisites for Business Advocate servers

The following table shows the software that you must install on machines that host one or more Business Advocate servers.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. Business Advocate servers do not support emulations or variants of this required software.

Certain switches and software support only certain functions and components. For more detailed information, see [Supported Telephony switches and software](#) on page 223.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines except Resource Manager server	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
	Machine that hosts Resource Manager server	Windows 2000 Server SP3	Not supported	Not supported
Microsoft Active Directory	Server machine that hosts Resource Manager and/or domain controller	Active directory provided with Windows 2000 server	Not supported	Not supported
Windows 2000 Message Queuing services	Server machine that hosts Resource Manager	Provided with Windows 2000 server	Not supported	Not supported
Databases	Machine that hosts Avaya IC databases	<ul style="list-style-type: none"> ● SQL Server 2000 SP3 OR <ul style="list-style-type: none"> ● Oracle 8.1.7 	Oracle 8.1.7	DB2 UDB 7.2 FP9
	Machine that hosts Business Advocate databases	<ul style="list-style-type: none"> ● SQL Server 2000 SP3 OR <ul style="list-style-type: none"> ● Oracle 8.1.7 	Oracle 8.1.7	Not supported
Database client	All server machines	<ul style="list-style-type: none"> ● SQL Server 2000 client SP3 OR <ul style="list-style-type: none"> ● Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application

Required software components

Required software	Location	Supported versions		
		Windows	Solaris	AIX
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Avaya switches and software	As required by switch or software	Definity G3 R8.3, R9, R10 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● Increased Adjunct Route Capacity 	Definity G3 R8.3, R9, R10 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● Increased Adjunct Route Capacity 	Definity G3 R8.3, R9, R10 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● Increased Adjunct Route Capacity
		Communication Manager 1.1, 1.2, 1.3 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● 8700 Media server or Definity servers (R, SI, CSI) ● Increased Adjunct Route Capacity 	Definity G3 R10 Communication Manager 1.1, 1.2, 1.3 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● 8700 Media server or Definity servers (R, SI, CSI) ● Increased Adjunct Route Capacity 	Definity G3 R10 Communication Manager 1.1, 1.2, 1.3 <i>Required software:</i> <ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD ● CVLAN Client 8.2.5 or later ● ADJLK Adjunct Link (not asai link) on the switch ● Call Center Elite with EAS for ASAI Agent States ● 8700 Media server or Definity servers (R, SI, CSI) ● Increased Adjunct Route Capacity

Required software components

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Nortel switches and software	See Nortel Meridian switches and middleware on page 228.	<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Meridian Link ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● Meridian MAX version 9 with MSI 	<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Meridian link ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● IBM DCE 3.1 with patch 6 ● Meridian MAX version 9 with MSI 	Not supported.
		<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Symposium Call Center Server 4.2 ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● Real Time Data Interface Toolkit 	<p>Nortel Meridian-1:</p> <ul style="list-style-type: none"> ● Symposium Call Center Server 4.2 ● Option 61 & 81 switches ● X11 Release with V2111 patch (core patch 9MP05182) ● Version 5.42 <p><i>Required software:</i></p> <ul style="list-style-type: none"> ● Link 5c ● Intel NetMerge Call Processing Software 6.0 ● IBM DCE 3.1 with patch 6 ● Real Time Data Interface Toolkit 	Not supported.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Web Management	As required by software	For information on supported software for Web Management with Business Advocate, see Required software for Web Management on page 42.		
Email Management	As required by software	For information on supported software for Email Management with Business Advocate, see Required software for Email Management and Content Analyzer on page 44.		

Required software for Avaya IC for Siebel 7

The following table shows the software that you must install on machines that host one or more servers for Avaya IC for Siebel 7.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. Avaya IC for Siebel 7 servers do not support emulations or variants of this required software.

Note:

For detailed information about the components and prerequisites required for Avaya IC for Siebel 7, see *Avaya IC for Siebel 7 Integration*, which is available on the Avaya IC for Siebel 7 installation CD-ROM.

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Operating systems	All server machines	Windows 2000 Server SP3	Solaris 8	AIX 5.1L ML3
Databases	Machine that hosts Avaya IC databases	<ul style="list-style-type: none"> ● SQL Server 2000 SP3 OR ● Oracle 8.1.7 	Oracle 8.1.7	DB2 UDB 7.2 FP9
Database client	All server machines	<ul style="list-style-type: none"> ● SQL Server 2000 client SP3 OR ● Oracle 8.1.7 client 	Oracle 8.1.7 client	DB2 UDB 7.2 Administration Client FP9

Required software components

Required software	Location	Supported versions		
		Windows	Solaris	AIX
Time synchronization utility	All server machines	Third party NTP application	NTP application	NTP application
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Web browser	Admin machine	Internet Explorer 5.5, 6.0	Not supported	Not supported

Required software for Design & Administration Tools

The Design & Administration Tools for Avaya IC include the following components:

- IC Manager
- Database Designer
- Workflow Designer

The following table shows the software that you must install on machines that host one or more of the Design & Administration Tools.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. The Design & Administration Tools do not support emulations or variants of this required software.

Required software	Location	Supported Windows versions	
		Windows 2000	Windows XP
Operating systems	All machines	Windows 2000 Professional SP3	Windows XP Professional SP1
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search

Required software	Location	Supported Windows versions	
		Windows 2000	Windows XP
Java Virtual Machine	All machines	Not required	Microsoft JVM plugin for Internet Explorer
Web browser	All machines	Internet Explorer 5.5, 6.0	Internet Explorer 5.5, 6.0

Required software for agent desktop applications

The agent desktop applications for Avaya IC include the following components:

- Avaya Agent
- Avaya Business Applications

This section describes the prerequisite software required to support the agent desktop applications. This section includes the following topics:

- [Prerequisites for Avaya Agent](#) on page 57.
- [Prerequisites for Business Applications](#) on page 58.

Prerequisites for Avaya Agent

Avaya Agent includes Avaya Agent and Web Agent.

The following table shows the software that you must install on machines that host Avaya Agent.

Required software components

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. Avaya Agent does not support emulations or variants of this required software.

Required software	Location	Supported Windows versions		
		Windows NT	Windows 2000	Windows XP
Operating systems	All machines	Windows NT Workstation 4.0 SP6a	Windows 2000 Professional SP3	Windows XP Professional SP1
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Java Virtual Machine	All machines	Not required	Not required	Microsoft JVM plugin for Internet Explorer
Web browser	All machines	Internet Explorer 5.5, 6.0	Internet Explorer 5.5, 6.0	Internet Explorer 5.5, 6.0

Prerequisites for Business Applications

The Business Applications include:

- CallCenterQ
- CallCenterQ for Consumer Relations
- CustomerQ
- HRQ
- WebQ

The following table shows the software that you must install on machines that host one or more Business Applications.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed

versions. The Business Applications do not support emulations or variants of this required software.

Required software	Location	Supported Windows versions		
		Windows NT	Windows 2000	Windows XP
Operating systems	All machines	Windows NT Workstation 4.0 SP6a	Windows 2000 Professional SP3	Windows XP Professional SP1
PDF reader for documentation	All machines	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search	Adobe Acrobat Reader 5.0 with Search
Java Virtual Machine	All machines	Not required	Not required	Microsoft JVM plugin for Internet Explorer
Web browser	All machines	Internet Explorer 5.5, 6.0	Internet Explorer 5.5, 6.0	Internet Explorer 5.5, 6.0

Required software for customers of Web Management

Customers of your Website must have a supported Web browser to use the features of Web Management. This section includes the following topics:

- [Supported Web browsers](#) on page 60.
- [Known exceptions to Web browser support](#) on page 61.

Supported Web browsers

The following table shows the supported Web browsers for Website features. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions. These features do not support emulations or variants of the supported Web browsers.

Website feature	Windows	Mac
Chat	<ul style="list-style-type: none"> ● Internet Explorer 6 ● Internet Explorer 5 ● Netscape 6 ● Netscape 4 (versions equal to or higher than 4.08) ● AOL 7 	<ul style="list-style-type: none"> ● Internet Explorer 5 ● Netscape 6 (OS X only) ● Netscape 4 (versions equal to or higher than 4.08) ● AOL 6
Page Push (includes Chat)	<ul style="list-style-type: none"> ● Internet Explorer 6 ● Internet Explorer 5 ● Netscape 6 ● Netscape 4 (versions equal to or higher than 4.08) ● AOL 7 	<ul style="list-style-type: none"> ● Netscape 6 (OS X only) ● Netscape 4 (versions equal to or higher than 4.08)
Collaboration (includes Chat and Page Push) <ul style="list-style-type: none"> ● Customer page send ● Page synchronization ● Form share 	<ul style="list-style-type: none"> ● Internet Explorer 6 ● Internet Explorer 5 ● Netscape 6 (versions equal to or higher than 6.2.1) ● Netscape 4 (versions equal to or higher than 4.08) ● AOL 7 	<ul style="list-style-type: none"> ● Netscape 6 (OS X only for versions equal to or higher than 6.2.1) ● Netscape 4 (versions equal to or higher than 4.08)
Voice Chat (includes Chat, Page Push, and Collaboration)	<ul style="list-style-type: none"> ● Internet Explorer 6 ● Internet Explorer 5 ● Netscape 4 (versions equal to or greater than 4.08) 	Not available

Note:

Customers who use Netscape 6 on MacOS X need to install the MRJPluginCarbon browser plugin and latest version of the Java Runtime OS (MRJ) to access the Website. For more information about the MRJ Plugin Carbon, see <http://www.mozilla.org/oji/MRJPluginCarbon.html>. For more information about the MRJ, see <http://developer.apple.com/java/download.html>.

Known exceptions to Web browser support

The following table describes the restrictions to Web browser support.

Website feature	Known exceptions
Collaboration	Collaboration does not support the following: <ul style="list-style-type: none"> ● For Internet Explorer, Web pages that include iFrames. ● For Netscape, Web pages that include layers. ● For Netscape 6.2.1 or greater, Collaboration (shared browsing) is not supported when using HTTPS to download the chat client applet.
Chat	Netscape 6.x with the Sun Java Plugin can cause the following: <ul style="list-style-type: none"> ● With Sun Java Plugin 1.3.x, Web browser may fail when a customer runs the chat client more than once in the same browser instance. ● With Sun Java Plugin 1.3.0, chat client may not load.
HTTP(S) Tunneling	Chat client communication via HTTP(S) tunneling is not supported on Netscape 6.0.x. or higher
Chat and HTTP(S) Tunneling	Chat client communication via HTTP(S) tunneling is not supported with the following: <ul style="list-style-type: none"> ● Netscape 6.2 ● Sun Java Plugin 1.4.2

Required software components

■ ■ ■ ■ ■ ■

Chapter 3: Guidelines for an Avaya IC deployment

Before you deploy and configure Avaya™ Interaction Center (Avaya IC), you must plan the components in the system and how those components will be distributed across different machines. Planning an Avaya IC system requires that you understand the needs of the contact center, and that you understand how Avaya IC components work together and with other systems on the network.

If your Avaya IC system includes an integration with Siebel 7, see *Avaya IC for Siebel 7 Integration* for guidelines and planning information. This manual is available on the Avaya IC for Siebel 7 installation CD-ROM.

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.

This section includes information, requirements and guidelines that you need to consider when you plan an Avaya IC system. This section includes the following topics:

- [Performance factors](#) on page 64.
- [Network topology and configuration guidelines](#) on page 66.
- [Database guidelines](#) on page 69.
- [Avaya IC server guidelines](#) on page 72.
- [Avaya OA server guidelines](#) on page 86.

Tip:

The information in this chapter is general and cannot anticipate the needs of all contact centers. You can consult an Avaya IC specialist to create a deployment strategy that meets the needs of your contact center.

Performance factors

When you plan the deployment of your Avaya IC environment, you must review the answers to the following questions:

- Which Avaya IC components does the contact center require?
- How high do you expect the volume of contacts to be for each component?
- How many concurrently connected users do you expect the system to handle?

The answers to these questions will help you to decide the type and number of hardware components you need for the Avaya IC system, and the best way to distribute the servers among the hardware components.

This section does not provide you with answers to these questions. The answers are different for every Avaya IC system, because the needs of every contact center are different. This section discusses the issues to consider when you answer these questions for a contact center. This section includes the following topics:

- [Avaya IC components](#) on page 64.
- [Volume of contacts](#) on page 65.
- [Number of concurrent users](#) on page 65.

Avaya IC components

The components in an Avaya IC system affect how many machines you need to deploy. For example, a basic Avaya IC system requires:

- At least one server machine for each media
- One machine to host the Design & Administration Tools
- One machine to host the databases and relational database management system
- One machine to host the Avaya OA components
- One client machine for each concurrently active agent

Avaya IC requires additional machines if the system includes more than one site or additional components, such as Business Advocate, QKnowledge, or Letter Generator.

For more information about the recommended number of machines for an Avaya IC system, see the following deployment scenarios:

- [Avaya IC single site deployment scenarios](#) on page 93.
- [Avaya IC multi-site deployment scenarios](#) on page 121.

Volume of contacts

Consider the volume of contacts that the contact center handles during peak periods of activity when you determine the following:

Processing power required for the machines that host Avaya IC servers - For example, if your contact center has a high contact delivery rate, ensure that the Avaya IC media servers, which support the contact qualifications and delivery, such as the Telephony server and Workflow server, have sufficient processing power.

Multiple servers to divide the responsibilities for the delivery of contacts - For example, the Workflow server processes the majority of the contacts and business rules. The Workflow server can handle tasks, such as media routing, agent blending, prompting, letter generation, and generic business logic. Distribute these responsibilities across multiple Workflow servers to maximize performance and response from the Workflow server and reduce the impact of one Workflow server on the other Workflow servers in an Avaya IC system.

Response time required for contacts in each media - For example, response time is critical for telephony services. Streamline the contact qualification and routing to ensure that telephony services respond in a timely manner during peak periods. Deploy several Workflow servers. Configure each Workflow server to access only the database that contains the tables required by the workflows. Develop workflows that perform only a single database operation before the workflows make a routing decision.

Number of concurrent users

Consider the number of agents and other Avaya IC users who are typically logged in concurrently during peak periods of activity. A large number of concurrent users who need to use the same services can have a negative impact on the performance of an Avaya IC system.

To avoid performance issues, distribute the responsibilities for the Avaya IC users between multiple servers on different machines. For example, divide the responsibilities for the Avaya IC users between two ADU servers that are hosted on different machines.

Some servers have limitations on the number of concurrent users. For example, a Telephony server can support approximately 600 to 800 agents. If an Avaya IC system includes more than 600 agents who handle voice contacts, include two Telephony servers that are hosted on different machines.

Network topology and configuration guidelines

Network topology and configuration have a direct impact on the performance of Avaya IC client-server communications.

Tip:

Consult with network specialists to determine the optimal network configuration.

This section includes general guidelines for network topology and configuration that typically result in good performance and reliability for Avaya IC. This section includes the following topics:

- [Network security](#) on page 66.
- [Avaya IC communication protocol](#) on page 66.
- [WAN and LAN connections](#) on page 67.
- [Multiple network cards](#) on page 67.
- [Firewall guidelines](#) on page 68.

Network security

Make sure that the network provides a minimum of the following security for all machines that host Avaya IC servers and applications:

- Secure physical location
- Properly administered user IDs and permissions
- Protection from network-based attacks
- Regular review of program logs

Avaya IC communication protocol

Avaya IC components use TCP/IP to communicate across the network. Consult the documentation for your network to determine the best configuration to support this communication protocol.

WAN and LAN connections

In general, LAN connectivity has higher bandwidth, lower delay, and is more stable than WAN connectivity.

If your Avaya IC system includes multiple sites that are connected by WANs, Avaya IC assumes and requires reliable WAN connections for proper operation and performance.

Avaya IC cannot detect WAN failures immediately. In some cases, Avaya IC may not directly detect a WAN failure. Where possible, configure failover within a LAN to avoid the increased latency and limited bandwidth when failover occurs across a WAN.

Multiple network cards

You need to plan the assignment of your Network Interface Cards (NICs) if the server machines in your Avaya IC configuration include a Windows 2000 operating system.

 **CAUTION:**

If you do not configure the correct NIC for Avaya IC, your system may have problems with NIC driver conflicts, Windows operating system errors, and Avaya IC errors.

When you plan the deployment of your Avaya IC system, consider the following guidelines:

First physical NIC - The Web License Manager uses the first physical NIC on the machine. The first physical NIC is the NIC that is located in the first slot in the PCI search order. Typically, this is the NIC closest to the central processor. To verify the location of the first physical NIC on the machine that hosts the Web License Manager, see the documentation provided by the manufacturer of the motherboard.

Note:

Exercise caution when you add a NIC to the machine that hosts Web License Manager. If the new NIC becomes the first physical NIC, Avaya IC and the Web License Manager cannot function.

System default NIC - Avaya IC uses the system default NIC in the Windows registry. Configure this NIC for use by Avaya IC, and give this NIC a static IP address.

ORB server - Deploy an ORB server for each NIC card that runs Avaya IC servers.

Avaya Definity and Communication Manager switches and software - If your Avaya IC system includes a Telephony server that will communicate with an Avaya Definity G3 or Communication Manager switch and software, the machine that hosts the Telephony Server must have a secondary NIC. Avaya recommends that the secondary NIC be on a

Guidelines for an Avaya IC deployment

10Mbps, half-duplex segment, on the same network segment as the MAPD for the Avaya switch. Variations to this configuration should include careful planning to minimize the higher risk of service failures that can be anticipated from alternate configurations.

Telephony licensing keys - Telephony licensing keys are written to the registry of the machine that hosts the Telephony server. If you change the IP address of the primary NIC or change the primary NIC on that machine, the licensing will be void and your Telephony server will not function properly.

Firewall guidelines

To provide security for the network, Avaya IC assumes that the customer Website for Web Management is located in the DMZ of the network, between the following two firewalls:

- Firewall between the Website machine and the internal network where the Avaya IC servers are deployed
- Firewall between the Website machine and the internet

The firewall is a hardware and software component of the network infrastructure. Firewalls can:

- Block certain network traffic in each direction
- Perform IP address translation in both directions
- Unexpectedly break connections

The firewall policy and design have a direct impact on the deployment and performance of Avaya IC components, such as Web Management servers.

DNS domains - In your network, servers outside the firewall may be in a different DNS domain from servers inside the firewall. Typically, DNS domains outside the firewall cannot resolve the names of DNS domains inside the firewall.

Deployment of Avaya IC components outside firewall - Customers require direct access to the Web Management Website to search the Web Self-Service database, or initiate chat contacts with agents in your contact center. Customers can also initiate email contacts from the Website. To make sure that customers do not have direct access to your network, deploy the Website outside the firewall. This area outside the firewall is frequently known as the DMZ area of the network.

Communication through the firewall - Web Management and Email Management components on the Website must communicate with components inside the firewall. This communication might require additional configuration of the operating system on machines that host these components. For example, you might need to add IP addresses to the Hosts table of the operating system on each machine.

Database guidelines

Avaya IC servers and client applications depend upon the databases to access, store, and retrieve vital data, including information about customers, contacts, employees, and configuration. Avaya OA reports on data stored by Avaya IC in the IC Repository database.

This section describes the databases that the components of Avaya IC use and provides some basic guidelines for their implementation and configuration. This section includes the following topics:

- [Avaya IC databases](#) on page 69.
- [Avaya IC database performance guidelines](#) on page 71.

Avaya IC databases

The following table shows the databases that Avaya IC uses. An Avaya IC system might not include all of these database, as some databases are only used by specific all components of Avaya IC.

Database	Description
Customer Interaction Repository	Not a database in itself. Refers to the Avaya IC and Avaya OA database and storage components used by an Avaya IC system.
IC Repository	Stores system level information, including the Employee table with agent information. All Avaya IC systems require this database.
CallCenterQ	Stores application level information for Avaya IC agent applications, such as Avaya Agent, Web Management, Email Management, and Business Applications. All Avaya IC systems require this database.
CustomerQ	Stores information for CustomerQ. Only Avaya IC systems that include CustomerQ require this database.
HRQ	Stores information for HRQ. Only Avaya IC systems that include HRQ require this database.

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Database	Description
Dialer	Stores information for Outbound Contact. Only Avaya IC systems that include Outbound Contact require this database.
Business Advocate System Store	Stores administration information, such as system parameters, initialization parameters, location of MSMQ queues, location of servers, and the roles of the Resource Manager servers. This database also stores process definition, run time process, and historical data. Each Logical Resource Manager has a dedicated system store. Only Avaya IC systems that include Business Advocate require this databases.
Business Advocate Resource Store	Stores operation information, such as qualifiers, service classes, and agent records and the associated capability sets and profiles. All Resource Manager servers share one Resource store. Only Avaya IC systems that include Business Advocate require this databases.
Siebel 7	Stores information for Avaya IC for Siebel 7. Only Avaya IC systems that include Avaya IC for Siebel 7 require this database.
Avaya OA Real-time database	Stores information required by Avaya OA. For more information, see <i>Operational Analyst Installation and Maintenance</i> . All Avaya IC systems with Avaya OA require this database.
Avaya OA Historical database	Stores information required by Avaya OA. For more information, see <i>Operational Analyst Installation and Maintenance</i> . All Avaya IC systems with Avaya OA require this database.

Avaya IC database performance guidelines

Avaya IC components access the databases through a connection pool provided by the Data server. The performance of the Avaya IC clients and servers depends on:

- Access to the databases to store and retrieve information
- Availability of the databases
- Ability of the databases to process SQL calls effectively from the application software servers and reporting tools

The following guidelines for your database server typically result in good performance and reliability:

Dedicated database machine - Host your database server on a dedicated machine. This dedicated location ensures that you can tune your database server to maximize database operations, and can improve the reliability and performance of the database. A poorly performing database server adversely affects Avaya IC performance.

Data server location - Do not install the Data server on the machine that hosts your database server.

Effect of contact volume on Data server - Consider the contact volume in your contact center when you deploy your Data server. In a high volume contact center, you can deploy secondary Data servers on the same machines as data-intensive Avaya IC servers.

Location of database files - Install the following database files on the machine that hosts the Data server:

- Database client software
- Database networking libraries

Client to connection ratio - Allocate a 10 to 1 client to connection ratio for the Data server.

Database sizing for contact records - Assume that each contact record in a Business Application occupies a minimum of 5 to 10 KB of disk space when you size the database.

Database server tuning - Contact your database software vendor for recommendations on tuning a server for a “decision support” type application, with the number of concurrent users and database size appropriate for your application and contact volumes.

Connection pool - Consider the size of the connection pool when you calculate the amount of memory required in megabytes (MBs). For example, to calculate the amount of memory for Oracle databases, multiply the connection pool size by 3.

Avaya IC server guidelines

This section includes general guidelines to consider when you plan your Avaya IC system. Consider these guidelines when you decide how many of each type of server the system requires, which machines will host the servers, where to locate those machines on the network. This section includes the following topics:

- [Server partitioning guidelines](#) on page 72.
- [Server location guidelines](#) on page 73.
- [Server failure guidelines](#) on page 77.
- [Server interaction guidelines](#) on page 77.
- [Business Advocate server guidelines](#) on page 83.

For information about server failover guidelines and about individual servers, see *IC Administration Volume 1: Servers & Domains*.

Server partitioning guidelines

The correct partitioning of an Avaya IC system is vital to achieve an optimal level of performance and security. Avaya IC servers use two types of partitioning: physical and logical.

This section describes the issues you need to consider when you decide how to partition an Avaya IC system. These issues do not stand alone. Consider these issues with all of the other guidelines in this chapter. This section includes the following topics:

- [Physical partitioning](#) on page 72.
- [Logical partitioning](#) on page 73.

Physical partitioning

How you deploy the Avaya IC servers on physical server machines in your system defines the physical partitioning of your Avaya IC system. The physical partitioning performs the following functions for Avaya IC:

- Determines the connectivity between servers.
- Defines how hardware and network failures will impact the servers.

You can deploy machines that host Avaya IC servers in a single site on one LAN, or across multiple sites on multiple LANs that are interconnected by WANs.

Logical partitioning

How you group the Avaya IC servers in Avaya IC domains defines the logical partitioning of an Avaya IC system. The Avaya IC domains determine preferred communication paths and how failover functions.

When you set up the domains for an Avaya IC system, you define the following communication paths:

- Between the Avaya IC servers
- Between the Avaya IC servers and the Avaya IC client applications

Important:

Each Avaya IC domain should only contain one server of that type. Certain specific circumstances include exceptions to this rule. For example, the Default domain can include more than ORB server. For more information about recommended logical partitioning of servers, see [Avaya IC single site deployment scenarios](#) on page 93 and [Avaya IC multi-site deployment scenarios](#) on page 121.

Use a common naming convention for your domains to ensure that you can easily identify where a component is deployed. In a multi-site deployment, you should use the following naming convention: `<site>_<service>`, where service represents the media channel or function of the servers in the domain. For example, in an Avaya IC system with a site in Boston, you could name a domain for the voice channel: Boston_VoiceA.

For more information about logical partitioning and how to use Avaya IC domains, see *IC Administration Volume 1: Servers & Domains*.

Server location guidelines

Consider the following guidelines when you place the machines that host Avaya IC servers on a network. These guidelines help to optimize the performance of an Avaya IC system. Topics include:

- [Client applications](#) on page 74.
- [Attribute server](#) on page 74.
- [Data server](#) on page 74.
- [Directory server and Alarm server](#) on page 75.
- [Email server](#) on page 75.
- [ORB server](#) on page 75.
- [Notification server](#) on page 75.
- [QKnowledge servers](#) on page 76.

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- [Report server](#) on page 76.
- [Telephony server](#) on page 76.
- [Web License Manager](#) on page 76.
- [Web Management servers](#) on page 76.
- [Workflow server](#) on page 76.

Client applications

Do not install agent desktop applications or the Design & Administration Tools on a machine that hosts Avaya IC servers or Avaya OA servers.

Installing client applications on server machines impacts the amount of available machine resources such as CPU and memory. This impact results in decreased performance and scalability of the servers.

As a general rule, host agent desktop applications or Design & Administration Tools on machines that will not impact server performance.

Attribute server

Install an Attribute server in the DMZ on the machine that hosts your Avaya IC Website if your Avaya IC system records datawake information.

An Attribute server inside the firewall can record datawake information. However, if you install an Attribute server on the Website machine, you will reduce network traffic across the firewall.

Data server

Consider the following guidelines when you determine where to locate the Data servers in an Avaya IC system:

Data server location - Do not install the Data server on the machine that hosts your database server.

Network location for Data server machine - Locate machines that host a Data server topologically close to the machine that hosts the Avaya IC databases on a high-speed backbone. Avaya IC generates the bulk of database access traffic between the Data servers and the database server.

LAN location for Data server machine - Locate the Data server on the same LAN as the Avaya IC databases. This configuration minimizes network bandwidth.

Data server and DUStore server location - When on the same LAN as the database, install a Data server on every machine that hosts a DUStore server. Configure the DUStore server to use this Data server. Also host a backup Data server on another machine. This configuration minimizes network traffic and minimizes failure modes.

Data server and Report server location - When on the same LAN as the database, install a Data server on every machine that hosts a Report server. Configure the Report Server to use this Data server. Also host a backup Data server on another machine. This configuration minimizes network traffic and minimizes failure modes

For more information about databases and the Data servers, see [Database guidelines](#) on page 69.

Directory server and Alarm server

In a multi-site deployment, when Avaya IC is deployed across a WAN, install a Directory server and Alarm server on every LAN.

These servers are critical for the operation of the other Avaya IC servers. If you have a Directory server and Alarm server on every LAN, a site can still function even if the WAN goes down.

Email server

Provide the Email server with high-speed access to SMTP email servers and POP3 email servers.

ORB server

All machines that host Avaya IC servers require an ORB server. If a machine does not include an ORB server, you cannot start Avaya IC servers on that machine.

You must install an ORB server:

- On every machine that hosts Avaya IC servers (except the ICM server, CIRS server, and VMM server)
- For every network interface on a multi-homed machine with which an Avaya IC server needs to communicate

For guidelines on how to install and configure Avaya IC on a machine with multiple network cards, see [Multiple network cards](#) on page 67.

Notification server

Ensure that the Notification server has access to an SMTP email server to send alert messages.

QKnowledge servers

Locate the machines that host the QKnowledge server and knowledge bases on machines that are local to the users of the information to help minimize WAN traffic in multi-site configurations.

Report server

Install a Report server on every machine that hosts an EDU server. This configuration minimizes failure modes and network traffic.

Telephony server

Locate your Telephony server in the same LAN as the associated telephony switch and software. This location provides Avaya IC telephony services with high-speed access to telephony devices, such as telephony switches or IVRs.

Web License Manager

Install at least one Web License Manager (WebLM) at each site.

If you install a WebLM at each site, WAN segmentation should not prevent an Avaya IC server or client from getting the appropriate licenses. In the deployment scenarios with redundancy, the Core server machines at each site host a WebLM. This configuration has no significance except to reduce the total number of machines.

You can install multiple WebLMs at each site for local physical redundancy. In this configuration, the license file should be segmented equally. Perform recursive segmentation to achieve local site redundancy. In the event of a catastrophic machine failure, other WebLM servers will redistribute the failed machines licenses for seventy-two hours.

Web Management servers

Provide Web Management servers with high-speed access to Web and email servers.

Workflow server

To mitigate the impact of a failure due to customized workflows, keep Workflow servers logically separate. For example, create a Workflow server for each media and host those servers with other servers that are specific to the same media.

Server failure guidelines

Whenever possible, design an Avaya IC system to ensure that failure of a single server does not impact all agents. Consider the following guidelines when you design an Avaya IC system:

Process redundancy - Web Management and Email Management do not support process redundancy. If the WebACD server or Email server fails, Avaya IC may not be able to route contacts for one or both of those media channels. To avoid this level of failure, consider whether to deploy a cold standby duplicate of the machines that host servers for the email and Web channels.

Server interaction guidelines

Avaya IC servers interact with other Avaya IC servers and with Avaya OA servers. These server interactions have a direct impact on the deployment and performance of an Avaya IC system.

Consider the following guidelines when you decide which Avaya IC servers you need in an Avaya IC system, and how you deploy those servers. Topics include:

- [Time synchronization for servers](#) on page 78.
- [ADU server guidelines](#) on page 79.
- [Data server guidelines](#) on page 79.
- [DUStore server guidelines](#) on page 80.
- [EDU server guidelines](#) on page 80.
- [Email EDU server guidelines](#) on page 80.
- [EDU limitations](#) on page 80.
- [ICM server and CIRS server guidelines](#) on page 81.
- [Outbound Contact server guidelines](#) on page 81.
- [Telephony Queue Statistics server guidelines](#) on page 81.
- [Workflow server guidelines](#) on page 82.

Time synchronization for servers

All servers require time synchronization. This requirement ensures that Avaya IC and Avaya OA maintain consistent time. If time is not synchronized, your reports may not be consistent. The clocks on all the server machines must also be synchronized to track issues in log files.

To achieve time synchronization if you do not have an existing infrastructure, install NTP (Network Time Protocol) software on all machines that host Avaya IC servers and Avaya OA servers. You can use a commercial time synchronization application that includes the ability to provide gradual clock corrections over time. Avaya IC may fail with timeout errors if you change the system clock in large increments (for example, more than two to three seconds per minute).

 **CAUTION:**

Do not use batch scripts that periodically set the time, or tools such as Windows NT Net Time tool. These scripts and tools are not accurate enough for the Avaya OA databases.

The following table describes the time synchronization utilities that you can use for each operating system supported by Avaya IC and Avaya OA.

Operating system	Time synchronization utility
Windows	Third party NTP utility. Avaya has successfully tested Tardis 2000 v1.4 with Avaya OA, and the time adjustment increments in milliseconds, as set out below. You can obtain a copy of Tardis shareware at the following Website: http://www.kaska.demon.co.uk .
Solaris	Third party NTP utility. Avaya has successfully tested the Solaris <code>ntpd</code> process.
AIX	Third party NTP utility. Avaya has successfully tested the AIX <code>ntpd</code> process.

Tardis can make large time changes at unpredictable times, instead of gradual adjustments. These 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:

1. From the Windows Control Panel, open Tardis.
2. Adjust the following settings:
 - Maximum correction allowed Set in a range from the minimum of 50 milliseconds to a maximum of 500 milliseconds.
 - How often the time is set Set to Every Minute.

For more information, see the Online Help provided with Tardis.

ADU server guidelines

ADU servers support Avaya IC accounts for agents and administrators. Consider the following guidelines when you plan the deployment of ADU servers.

ADU server limitations - An ADU server can handle events from approximately 500 agents. Avaya recommends that you include a minimum of two ADU servers at each site.

ADU server failover - Do not configure agent domains to failover to an ADU server that:

- Is not monitored by an Event Collector server at the same site
- Is monitored by an Event Collector server at a different site

ADU persistence - If the Avaya IC system requires ADU persistence, follow the guidelines for EDU persistence in [Email EDU server guidelines](#) on page 80.

Data server guidelines

Consider the following guidelines when you plan the deployment of Data servers.

Database machine - Do not install the Data server on the same machine as the database.

DUStore server - Install a Data server on every machine that has a DUStore server and configure the DUStore server to this Data server. This configuration minimizes network traffic, provides load balancing, and minimizes failure modes.

Network location - Locate the Data server on the same LAN as the database. The protocol between agent applications and the Data server is much more efficient than the SQL protocol between the Data server and the database. This configuration provides for better throughput of data in your Avaya IC system.

For more information, see [Database guidelines](#) on page 69.

Guidelines for an Avaya IC deployment

DUStore server guidelines

Include the following in the deployment of any Avaya IC system that includes the email channel to minimize network traffic, provide load balancing, and minimize failure modes:

- Configure a secondary DUStore server for the email EDU server only
- Locate the secondary DUStore server on the same machine as the email EDU server
- Configure the email EDU server to use this DUStore server
- In case of a failure of the DUStore server, install and configure a backup DUStore server

EDU server guidelines

Install a separate EDU server for every media channel domain. Different media channels have different requirements for configuring the EDU server to ensure optimal processing.

Email EDU server guidelines

Configure the EDU server that processes email contacts as follows:

Enable EDU persistence - EDU persistence writes EDU information to the DUStore server based on the checkpoint interval setting and limits the EDU Server memory usage. If there is a failure in your system, Avaya IC can then reconstruct the emails in queue.

Checkpoint every five minutes - The Checkpoint feature ensures that Avaya IC persists changes to an EDU at the end of the checkpoint interval. This setting also minimizes the number of email EDUs in a queue that are lost if the EDU server fails.

EDU limitations

The EDU has a limitation if the contact center includes some Avaya IC agents and some agents who do not work in Avaya IC. Avaya IC cannot track an EDU outside the Avaya IC system.

For example, if an Avaya IC agent transfers a contact out of Avaya IC to a non-Avaya IC agent, then Avaya IC terminates the EDU for that contact. Avaya IC considers the contact to be retired. If an agent transfers the contact back to an Avaya IC agent, Avaya IC assigns a second EDU to the contact.

As a result, the same contact has two EDUs. This limitation can create problems with tracking and reporting for that contact.

ICM server and CIRS server guidelines

If you expect a high volume of customer interaction and chat contacts on the Web Management Website, you can add more than one ICM server to increase the number of supported chat contacts and permit greater scalability.

If the Avaya IC system includes more than one ICM server:

- Configure a CIRS server to provide load balancing for the ICM servers. chat contacts
- Host each ICM server on a separate machine

Outbound Contact server guidelines

Consider the following guidelines when you plan the deployment of Outbound Contact servers:

Outbound Contact servers and Avaya IC sites - Each Avaya IC site can include only one Dialing Kernel server. The Softdialer servers and associated Telephony servers that are associated with the Dialing Kernel server must be in the same Avaya IC site.

Outbound Contact servers and Avaya IC domains - Include the Dialing Kernel server and the associated Softdialer server in the same domain.

Telephony Queue Statistics server guidelines

Avaya recommends that you do not configure more than one Telephony Queue Statistics (TSQS) server with the same Site and ACD Name.

If you configure redundant TSQS servers with the same Site and ACD name, both servers attempt to create and update the ADU for the queue. This simultaneous update results in incorrect data.

If the Avaya IC system requires a backup TSQS server, configure:

- The backup TSQS server NOT to autostart
- The backup Telephony server for the queue as the first server in the TS Set list for the Voice Device in IC Manager

Workflow server guidelines

Consider the following guidelines when you plan the deployment of Workflow servers.

Customization of workflows - Workflow servers typically have many external interfaces, such as interfaces to the database and Prompter. Because the Workflow server is scriptable and extensible, Avaya cannot test all possible customizations and usages as part of the out-of-the-box product.

Customized workflows can be less reliable than the sample workflows and can impact the performance of other servers. Avaya recommends that you thoroughly test all customized workflows, including possible failure scenarios.

Load partitioning - Deploy several Workflow servers to provide general load partitioning for contacts, and to limit the types of workflows run by each Workflow server. If you limit the types of workflows, you minimize the possibility that a workflow will impact the performance of other Avaya IC system functions.

Your Avaya IC system should include separate Workflow servers for the following:

- Each Blender server in your Avaya IC system
- Each media channel in your Avaya IC system
- Each agent workgroup that uses Prompter
- Other utility functions run by the Workflow server, such as periodic tasks

You can configure a Workflow server for each machine that hosts media-specific servers. For example, create a Workflow server for each machine that hosts a Telephony server.

Coupling between Blender server, Workflow server, and ADU server - A tight coupling between the Blender server, Workflow server, and ADU server is critical for agent login and for agent channel assignment.

If you install redundant servers, or the contact center requires higher availability of agents, include the following in your deployment:

- Install at least two sets of Blender server, Workflow server, and ADU server on every LAN in the Avaya IC system that includes agent desktop applications.
- Configure each set of servers to fail over to the other set of servers.

Split the agent population on the LAN between the two sets of servers. Each agent group should use one set of servers and use the second set as a backup. This set of servers is critical for agent login and agent channel assignment. If you split your agents across two sets of servers, a single server (or machine) failure cannot disable your contact center.

One group of agents can continue uninterrupted operation while the other group restores connections through failover.

Note:

Some deployments do not include an ADU server in an agent domain. Those deployments include the Blender server and Workflow server in the agent domain, and the ADU server in a media domain.

Workflow server and Business Advocate - Configure at least one Workflow server on the same machine as every Telephony Services Adaptor server and Web Advocate Adaptor server. This Workflow server handles the qualification and exceptions of all the contacts for that server. If the Telephony Services Adaptor server or Web Advocate Adaptor server handles a high volume of contacts, assign multiple Workflow servers to that server. The Telephony Services Adaptor server or Web Advocate Adaptor server can distribute contacts evenly between the assigned Workflow servers.

Business Advocate server guidelines

This section includes general guidelines to consider when you plan an Avaya IC system that includes Business Advocate. Consider these guidelines when you decide how many of each type of server the system requires, which machines will host the servers, where to locate those machines on the network.

This section includes the following topics:

- [Logical Resource Manager](#) on page 84.
- [Resource Manager server](#) on page 84.
- [Business Advocate databases](#) on page 84.
- [Telephony Services Adaptor server](#) on page 85.
- [Web Advocate Adaptor server](#) on page 86.
- [Workflows for Business Advocate](#) on page 86.

For more information about guidelines that affect Business Advocate, see [Event Collector Bridge guidelines](#) on page 89,

Guidelines for an Avaya IC deployment

Logical Resource Manager

Consider the following guidelines for each Logical Resource Manager in an Avaya IC system:

ADU server location - Install a separate ADU server for each Logical Resource Manager. Host this ADU server on a machine in the same LAN as the Logical Resource Manager.

This ADU server keeps the Business Advocate statistics for that Logical Resource Manager. Create a redundant ADU server in case of ADU failure.

ADU server domain - Create a separate Avaya IC domain for this ADU server. Do not place this ADU server in the same domain as the Resource Manager servers in the Logical Resource Manager.

Resource Manager server

Consider the following guidelines for each Resource Manager server in an Avaya IC system:

Resource Manager server domain - Create a separate domain for each Resource Manager server in an Logical Resource Manager. Do not include more than one Resource Manager server in an Avaya IC domain.

Operating system - The Resource Manager server requires a Windows 2000 operating system. You can host other Avaya IC servers on supported Solaris or AIX operating systems.

Resource Manager location - Host each Resource Manager server, whether primary or standby, on a separate Windows 2000 machine. Do not host more than one Resource Manager server on the same machine.

Resource Manager failover - Resource Manager servers typically work in pairs, with one active Resource Manager server and one standby Resource Manager server. The standby Resource Manager server becomes the active Resource Manager server if the active server fails.

Business Advocate databases

For an Avaya IC system that uses DB2 for Avaya IC databases, install an Oracle database or SQL Server database to host the Business Advocate database stores.

Telephony Services Adaptor server

Consider the following guidelines for each Telephony Services Adaptor server in an Avaya IC system:

Telephony Services Adaptor server and Telephony server - Business Advocate requires a tight coupling between the Telephony Services Adaptor server and the Telephony server. These two servers handle voice contacts from a single CTI link on a switch.

Telephony Services Adaptor server and ADU server - A Telephony Services Adaptor server may require a dedicated ADU server if Business Advocate includes either or both of the following:

- A large number of service classes
- Several Logical Resource Managers

Telephony Services Adaptor server location - Host the Telephony Services Adaptor server on the same machine as the associated Telephony Server. Include both these servers in the same Avaya IC domain.

For redundancy, host pairs of Telephony Services Adaptor server and Telephony server on two separate machines. The total number of agents on both pairs must not exceed the maximum number of agents supported for one CTI link (MAPD).

Telephony Services Adaptor server and CTI link - Install a Telephony Services Adaptor server for each CTI link that processes incoming voice contacts. All incoming voice contacts to be routed by Business Advocate require a Telephony Services Adaptor server.

Telephony Services Adaptor server and switch - Install at least one pair of Telephony Services Adaptor server and Telephony server per switch. Each switch must have at least one CTI link controlled by a pair of Telephony Services Adaptor server and Telephony server. Even if the switch does not accept incoming voice contacts a pair of Telephony Services Adaptor server and Telephony server is required to transfer voice contacts.

Telephony Server Adaptor server and failover - The Telephony Server Adaptor server does not use the domain mechanism for failover. If the Telephony server or the Telephony Server Adaptor server fails, voice contact routing in Business Advocate fails over to the switch.

Web Advocate Adaptor server

Consider the following guidelines for each Web Advocate Adaptor server in an Avaya IC system:

Web Advocate Adaptor server and WebACD server - Business Advocate requires a tight coupling between the Web Advocate Adaptor server and WebACD server. These two servers handle all chat contacts and email contacts in an Avaya IC system.

Web Advocate Adaptor server location - Install a Web Advocate Adaptor server on the same machine as the WebACD server. Include both these servers in the same Avaya IC domain.

Workflows for Business Advocate

Consider the following guidelines for each Workflow server that runs Business Advocate workflows in an Avaya IC system:

Qualification workflows and exception workflows - Run Business Advocate qualification workflows and exception workflows on the same dedicated Workflow server.

Voice qualification workflows - Configure at least one Workflow server for every Telephony Services Adaptor server in a LAN. Depending on the volume of voice contacts, multiple Workflow servers can run voice qualification workflows for a single Telephony Services Adaptor server.

Avaya OA server guidelines

The Event Collector server is the Avaya OA server that acts as a bridge between the ADU server in Avaya IC and the real-time subsystem in Avaya OA. The Event Collector server collects ADU data from the ADU server and delivers the data to the real-time subsystem.

In addition to the guidelines in the previous sections, consider the guidelines in the following sections carefully when you deploy Avaya OA with your Avaya IC system.

- [Event Collector server guidelines](#) on page 87.
- [Event Collector Bridge guidelines](#) on page 89.
- [Avaya OA failover guidelines](#) on page 90.
- [Troubleshooting the Event Collector server deployment](#) on page 90.

Event Collector server guidelines

This section describes the guidelines to follow when you deploy the Avaya OA Event Collector server and Real-time subsystem in an Avaya IC system. This section includes the following topics:

- [Location of Event Collector server](#) on page 87.
- [Event Collector server and Avaya IC domains](#) on page 87.
- [Event Collector server and Avaya IC sites](#) on page 87.
- [Event Collector server and ADU servers](#) on page 88.
- [Event Collector server and Telephony](#) on page 88.
- [Event Collector server and Business Advocate](#) on page 88.
- [Limitations on ADU data collection](#) on page 89.

Location of Event Collector server

Install the Event Collector on a machine with the following:

- Avaya OA real-time subsystem
- Avaya IC secondary ORB server

For a single site, you can install all Avaya OA components on the same machine if the event traffic does not exceed the capacity of the machine.

Event Collector server and Avaya IC domains

Create a dedicated domain for the Event Collector server.

The Event Collector server does not need to be in the same domain as an ADU server.

Event Collector server and Avaya IC sites

Install and configure an Event Collector server and Avaya OA real-time subsystem for each Avaya IC site where an ADU server monitors agents. This Event Collector server must monitor all agent ADU servers at that site.

Event Collector server and ADU servers

The Event Collector server must monitor all ADU servers in an Avaya IC system.

Install the Event Collector server as follows:

- If each Avaya IC site in your system includes ADU servers that are located on multiple machines, install the Event Collector server on a different machine.
- If each Avaya IC site in your system includes all ADU servers on the same machine and that machine has sufficient RAM and processor speed, you can install the Event Collector server on the same machine as the ADU servers.

Event Collector server and Telephony

Ensure that the site administered for the Event Collector server matches the site administered for the Telephony servers in use at the site.

The Event Collector server does not receive voice queue ADU events from Telephony servers that are configured for different sites. The Event Collector server expects to receive Queue ADU data from all email and Web ADU servers across all sites. These ADU events are delivered via proxy through the local ADU server. However, voice ADU events are treated differently. These events are also delivered by proxy, but they are filtered based on the site specified in the Event Collector administration when you create and configure the Event Collector server.

Event Collector server and Business Advocate

For Avaya IC systems with Business Advocate, the Event Collector server must monitor the following ADU servers:

- The ADU server where the Telephony Services Adaptor server records the service class detail records. This ADU server is typically in the same domain as the Telephony server, or in a domain that fails over from the domain of the Telephony server.
- The ADU server where the Web Advocate Adaptor server records the service class detail records. This ADU server is typically in the same domain as the WebACD server, or in a domain that fails over from the domain of the WebACD server.
- The ADU server where the Resource Manager server records the service class state records. This ADU server is typically on the same machine as the Resource Manager server.

Limitations on ADU data collection

Limit ADU data collection from an Event Collector server to local site ADU servers and the proxying of remote ADU data through the local site ADU servers.

This configuration assumes that the local domain ADU handles agent data, and that the proxy data consists of queue statistics for the local site. Do not proxy agent ADU data, because this creates a proxy overhead of large agent ADU volumes. Collect agent ADU data directly from the Agent ADU server on the same physical system.

Event Collector Bridge guidelines

In an Avaya IC system, the Event Collector Bridge queries Business Advocate for administrative information and processes all administration-related events.

This section describes the guidelines to follow when you deploy an Event Collector Bridge. This section includes the following topics:

- [Minimum deployment](#) on page 89.
- [Event Collector Bridge and Resource Manager server](#) on page 89.

Minimum deployment

Install a minimum of two Event Collector Bridges in an Avaya IC system.

Event Collector Bridge and Resource Manager server

Install multiple Event Collector Bridges on each machine that hosts a Resource Manager server.

The Event Collector Bridge requires access to the same Windows Message Queuing service (MSMQ) as the Resource Manager server. Multiple Event Collector Bridges can compete for access to the MSMQ, but only one can use MSMQ.

This deployment provides redundancy and help ensure availability if an Event Collector Bridge fails.

Tip:

The deployment scenarios show only one Event Collector Bridge per Resource Manager server. However, redundancy requires a minimum of two Event Collector Bridges for each Resource Manager server.

Avaya OA failover guidelines

The following configuration guidelines for failover minimize the potential loss of data if an ADU server fails. If you follow these guidelines and an ADU server fails, each agent who logged in through that ADU server will fail over to another ADU server in the failover configuration. Because both ADU servers will be monitored by the same Event Collector server, Avaya OA will record the agent data correctly.

Consider the following guidelines carefully when you configure failover for the Event Collector server and ADU servers in your Avaya IC system:

Failover for Event Collector server - You cannot configure failover for an individual Event Collector server with its Real-time subsystem. The Event Collector servers must be in agent domains that failover to other Event Collector server domains.

Failover for ADU servers in agent domains - Ensure that ADU servers in agent domains never failover to an ADU server that is not monitored by an Event Collector server.

Normal failover paths may result in an agent ADU entry being created in the ADU server that the Telephony server and WebACD server use for queue ADU entries. This “channel ADU server” is not monitored by an Event Collector. Therefore, Avaya OA cannot report on the failed-over agents. Use the “Server Groups” feature of the channel ADU servers to ensure that no requests from agent domains are resolved to this server.

Failover for ADU servers in agent domains across multiple sites - Do not configure ADU servers in agents to failover to an ADU server at another site, unless both sites are monitored by a single Event Collector server.

Failover for non-agent ADU servers - Configure all ADU servers in non-agent domains to accept only failover requests from other ADU servers in non-agent domains.

Troubleshooting the Event Collector server deployment

If you do not follow the guidelines for deploying and configuring the Event Collector server and ADU servers, your Avaya OA reports will be missing data or will contain incorrect data. You may see one or more of the following issues if you do not follow these guidelines. For more information, see *Operational Analyst Installation and Maintenance*.

Agent fails over to an ADU server that is monitored by a different Event Collector server - For a brief period, the agent may appear to be logged in on both real-time sources simultaneously. Avaya OA will track contacts in progress at the time of failover incorrectly.

However, subsequent contacts will be tracked correctly. Historical data for the agent will be associated with multiple sources.

This configuration is not recommended for the following reasons:

- Real-time report users encounter difficulty monitoring specific agents. A real-time report can only view data within a single real time database. If an agent fails over to an ADU server that is monitored by a different Event Collector, the data for that agent is collected into a different real-time database.
- Supervisors need to run a separate report for each real-time database where an agent may be represented to view all relevant data.
- Some data anomalies occur during the interval when the failover occurred. For example, an agent's data is spread between two real-time databases. Certain data about the contact in progress will be lost.
- Historical report users encounter difficulty monitoring specific agents. To improve the performance of reports, the historical data is summarized into daily, weekly, and monthly summaries using containers. To correctly track the agent, you must add an entry for the agent to the container for each real-time database that contains data for the agent. Unfortunately, you cannot add these entries until after the failover has occurred.

An agent fails over to an ADU server that is not monitored by an Event Collector server - Avaya OA does not collect data for that agent after the failover. The agent will appear to be logged out.

Two Event Collector servers monitor the same agent domains - Avaya OA does not currently support this configuration.

If you configure two Event Collector servers to monitor the same agent domains, your Avaya OA system includes two real-time databases with the same real-time data.

Although this could provide some redundancy to your system and ensure that if one Event Collector server or Real-time subsystem fails, the other continues to collect data. However, you will encounter the following problems if you use this configuration:

- The real-time reports do not support duplicate real-time data in multiple real-time databases. Report users will need to be aware of the redundant databases and choose an appropriate source to monitor.
- If an Event Collector server fails, Avaya OA does not provide a failure indication to real-time report users. Report users will see stale, unchanging data and will not receive an indication that the user needs to switch to another source.
- After an Event Collector server recovers, interval data will be incomplete and will not match the other real-time database. No mechanism is available to resynchronize the databases.

Guidelines for an Avaya IC deployment

- Historical data will be duplicated across sources, doubling the amount of database space required to store Avaya IC summary data. Historical data during intervals when an Event Collector failed will not match between the sources.
- Historical reports may show misleading data if containers are administered that contain data from multiple duplicated sources. Data items that contain counts will be double counted, and data collected during intervals when an Event Collector server failed may be difficult to interpret.

■ ■ ■ ■ ■ ■

Chapter 4: Avaya IC single site deployment scenarios

This section includes scenarios of sample deployments for an Avaya IC system in a single site. This section includes the following scenarios:

- [Scenario 1: Single site, voice only](#) on page 94.
- [Scenario 2: Business Advocate for single site, voice only](#) on page 97.
- [Scenario 3: Business Advocate for single site, high volume voice](#) on page 100.
- [Scenario 4: Single site, multi-media](#) on page 104.
- [Scenario 5: Single site, multi-media with high volume voice](#) on page 109.
- [Scenario 6: Business Advocate for single site, multi-media](#) on page 114.
- [Scenario 7: Single site, chat and email only](#) on page 117.

If your Avaya IC system includes an integration with Siebel 7, see *Avaya IC for Siebel 7 Integration* for deployment guidelines, which is available on the Avaya IC for Siebel 7 CD-ROM.

 **Important:**

The total number of agents that a Telephony server can support depends upon the volume of voice contacts. The configurations in these scenarios assume sites with fewer than 1,200 agents.

Scenario 1: Single site, voice only

This scenario is the recommended minimum configuration for a basic Telephony only deployment. If you customize your Telephony deployment, you may need to include additional Avaya IC components.

Topics for this scenario include:

- [Scenario 1: Deployment overview](#) on page 94.
- [Scenario 1: Avaya IC domain overview](#) on page 94.
- [Scenario 1: Partitioning of servers](#) on page 95.
- [Scenario 1: Failover strategy](#) on page 96.

Scenario 1: Deployment overview

This scenario shows a potential production system with the following deployment:

- Voice channel only (no other media channels)
- Single site
- Two machines for all Avaya IC servers
- One machine for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for your RBDMS
- Hardware redundancy
- Server (VESP) failover

Scenario 1: Avaya IC domain overview

The Avaya IC components and Avaya OA servers in this scenario are distributed across the following Avaya IC domains:

- Default
- User1
- User2
- Voice1
- Voice2
- Prompter1

- Prompter2
- Core2
- OA

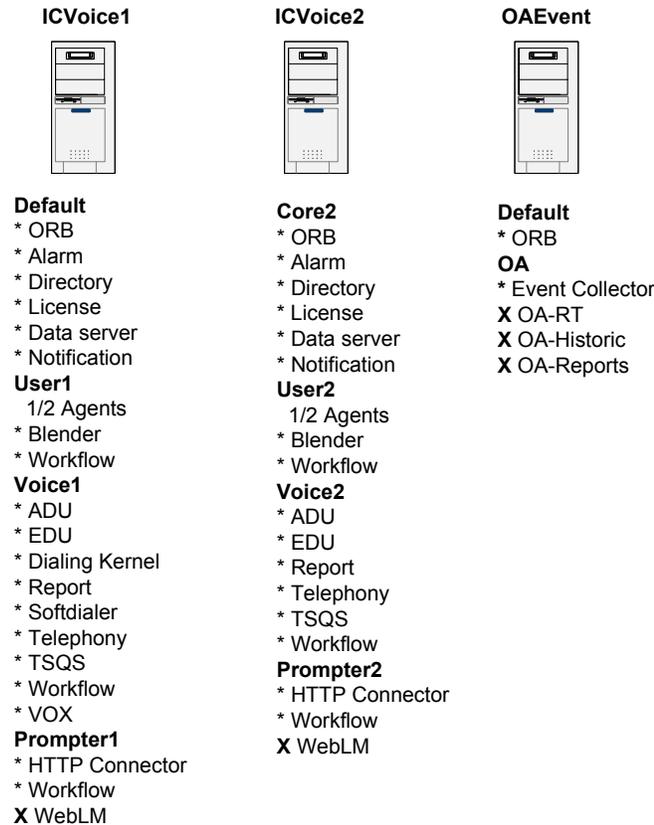
These domains use the following naming convention: *<service>*. If your deployment may extend to multiple sites, use a different naming convention for domains, such as *<site>_<service>*.

Scenario 1: Partitioning of servers

The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

Some of these components, such as the Web License Manager, are not servers.

The following figure shows the distribution of components on the server machines. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 1: Failover strategy

The following table shows the failover strategy in this scenario. The components in the Avaya IC domain in the left column failover to the Avaya IC domains in the right column in the order listed.

Domain	Failover domains
Default	<ol style="list-style-type: none"> 1. Default 2. Core2
Core2	<ol style="list-style-type: none"> 1. Core2 2. Default
User1	<ol style="list-style-type: none"> 1. User1 2. User2 3. Prompter1 4. Prompter2 5. Voice1 6. Voice2 7. Default 8. Core2
User2	<ol style="list-style-type: none"> 1. User2 2. User1 3. Prompter2 4. Prompter1 5. Voice2 6. Voice1 7. Core2 8. Default
Voice1	<ol style="list-style-type: none"> 1. Voice1 2. Voice2 3. Default 4. Core2
Voice2	<ol style="list-style-type: none"> 1. Voice2 2. Voice1 3. Core2 4. Default
Prompter1	<ol style="list-style-type: none"> 1. Prompter1 2. Prompter2 3. Default 4. Core2 5. Voice1 6. Voice2

Domain	Failover domains
Prompter2	<ol style="list-style-type: none"> 1. Prompter2 2. Prompter1 3. Core2 4. Default 5. Voice2 6. Voice1
OA	<ol style="list-style-type: none"> 1. OA 2. Voice1 3. Voice2 4. Default 5. Core2

Scenario 2: Business Advocate for single site, voice only

This scenario extends *Scenario 1: Single site, voice only* to include Business Advocate. This scenario is the recommended minimum configuration to add Business Advocate components to a basic single site, voice only deployment in a contact center which expects a low to medium volume of voice contacts.

This deployment includes a single Logical Resource Manager with two Resource Manager servers. The Resource Manager server in RM1 is the primary. The Resource Manager server in RM2 is the standby.

For more information about Logical Resource Managers, see *IC Business Advocate Configuration and Administration*.

Topics for this scenario include:

- [Scenario 2: Deployment overview](#) on page 98.
- [Scenario 2: Avaya IC domain overview](#) on page 98.
- [Scenario 2: Partitioning of Business Advocate servers](#) on page 99.
- [Scenario 2: Failover strategy](#) on page 100.

Scenario 2: Deployment overview

This scenario adds Business Advocate servers to the machines that host Avaya IC servers, described in [Scenario 1: Deployment overview](#) on page 94.

If you host:

- Avaya IC servers on Windows, this scenario does not require additional machines.
- Avaya IC servers on Solaris or AIX, this scenario requires two windows machines to host the Resource Manager servers.
- Avaya IC and Avaya OA databases in DB2 on AIX, this scenario requires the following:
 - A Windows or Solaris machine to host the Business Advocate databases. If desired, you can install SQL Server on a machine that hosts a Resource Manager server.
 - An additional Data server on the same machine as a Resource Manager server. This Data server will provide Avaya IC with access to the Business Advocate database and data, such as service classes. Configure this Data server in its own domain, such as RM_Data. Add the RM_Data domain to the failover path for all domains that include Directory servers and Workflow servers that run contact qualification workflows.

Scenario 2: Avaya IC domain overview

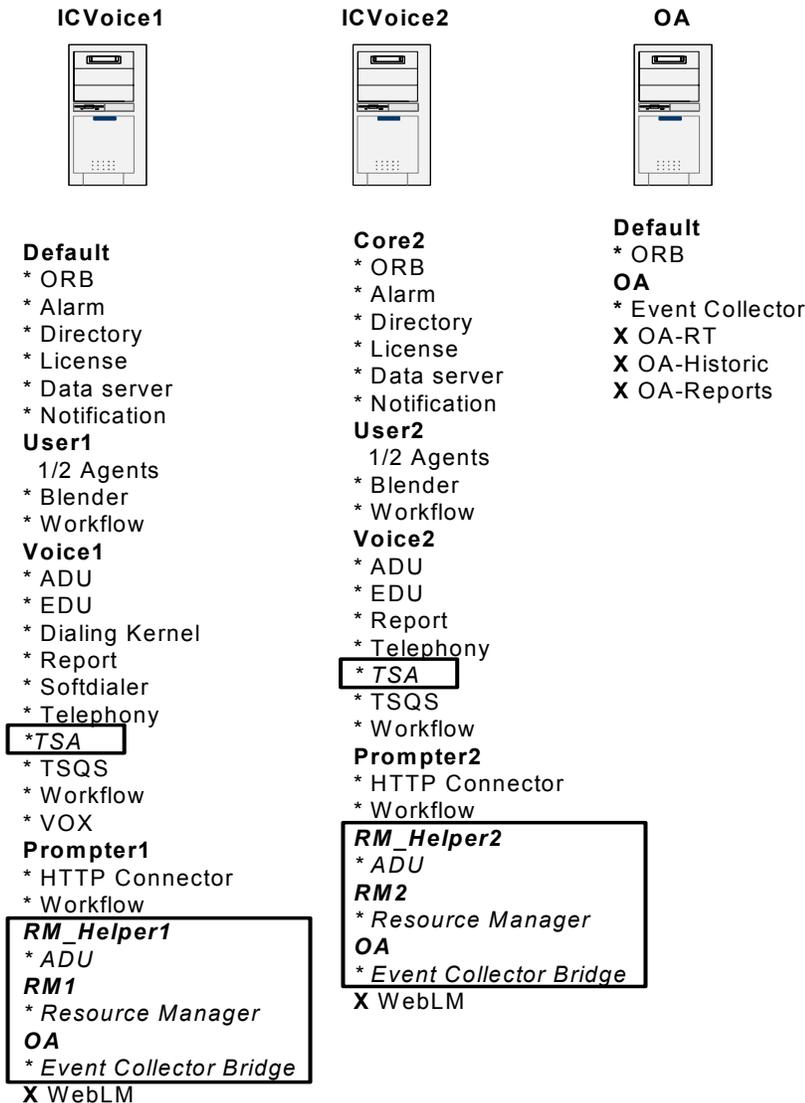
The Business Advocate server components in this scenario are distributed across the following Avaya IC domains in addition to those listed in [Scenario 1: Avaya IC domain overview](#) on page 94:

- RM1
- RM2
- RM_Helper1
- RM_Helper2

Scenario 2: Partitioning of Business Advocate servers

The physical partitioning of the servers reflects the distribution of the Business Advocate components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of Business Advocate servers on the server machines. The highlighted servers are in addition to those components described in [Scenario 1: Partitioning of servers](#) on page 95.



Scenario 2: Failover strategy

Business Advocate has some unique failover strategies for the Resource Manager and the voice channel. For details about those strategies, see *IC Business Advocate Configuration and Administration*.

The following table shows the failover strategy for the Business Advocate domains in this scenario. The Business Advocate domains do not failover to any of the other Avaya IC domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
RM_Helper1	<ol style="list-style-type: none"> 1. RM_Helper1 2. Default 3. Core2
RM_Helper2	<ol style="list-style-type: none"> 1. RM_Helper2 2. Default 3. Core2
RM1	<ol style="list-style-type: none"> 1. RM1 2. RM_Helper1 3. RM_Helper2 4. Default 5. Core2
RM2	<ol style="list-style-type: none"> 1. RM2 2. RM_Helper1 3. RM_Helper2 4. Default 5. Core2

Scenario 3: Business Advocate for single site, high volume voice

This scenario extends *Scenario 1: Single site, voice only* to include Business Advocate. This scenario is the recommended minimum configuration to add Business Advocate components to a basic single site, voice only deployment in a contact center which expects a high volume of voice contacts.

This deployment shows a single Logical Resource Manager with two Resource Manager servers. The Resource Manager server in RM1 is the primary. The Resource Manager

server in RM2 is the standby. The Logical Resource Manager components are hosted on dedicated processors to support the higher volume of contacts.

For more information, see *IC Business Advocate Configuration and Administration*.

Topics for this scenario include:

- [Scenario 3: Deployment overview](#) on page 101.
- [Scenario 3: Avaya IC domain overview](#) on page 101.
- [Scenario 3: Partitioning of Business Advocate servers](#) on page 102.
- [Scenario 3: Failover strategy](#) on page 103.

Scenario 3: Deployment overview

This scenario adds Business Advocate servers to the machines that host Avaya IC servers, described in [Scenario 1: Deployment overview](#) on page 94. This scenario also adds the following:

- Two machines to host Telephony servers and other Avaya IC servers
- Two machines to host the Resource Manager server and other Avaya IC servers

If you host Avaya IC and Avaya OA databases in DB2 on AIX, this scenario also requires the following:

- A Windows or Solaris machine to host the Business Advocate databases. If desired, you can install SQL Server on a machine that hosts a Resource Manager server.
- An additional Data server on the same machine as a Resource Manager server. This Data server will provide Avaya IC with access to the Business Advocate database and data, such as service classes. Configure this Data server in its own domain, such as RM_Data. Add the RM_Data domain to the failover path for all domains that include Directory servers and Workflow servers that run contact qualification workflows.

Scenario 3: Avaya IC domain overview

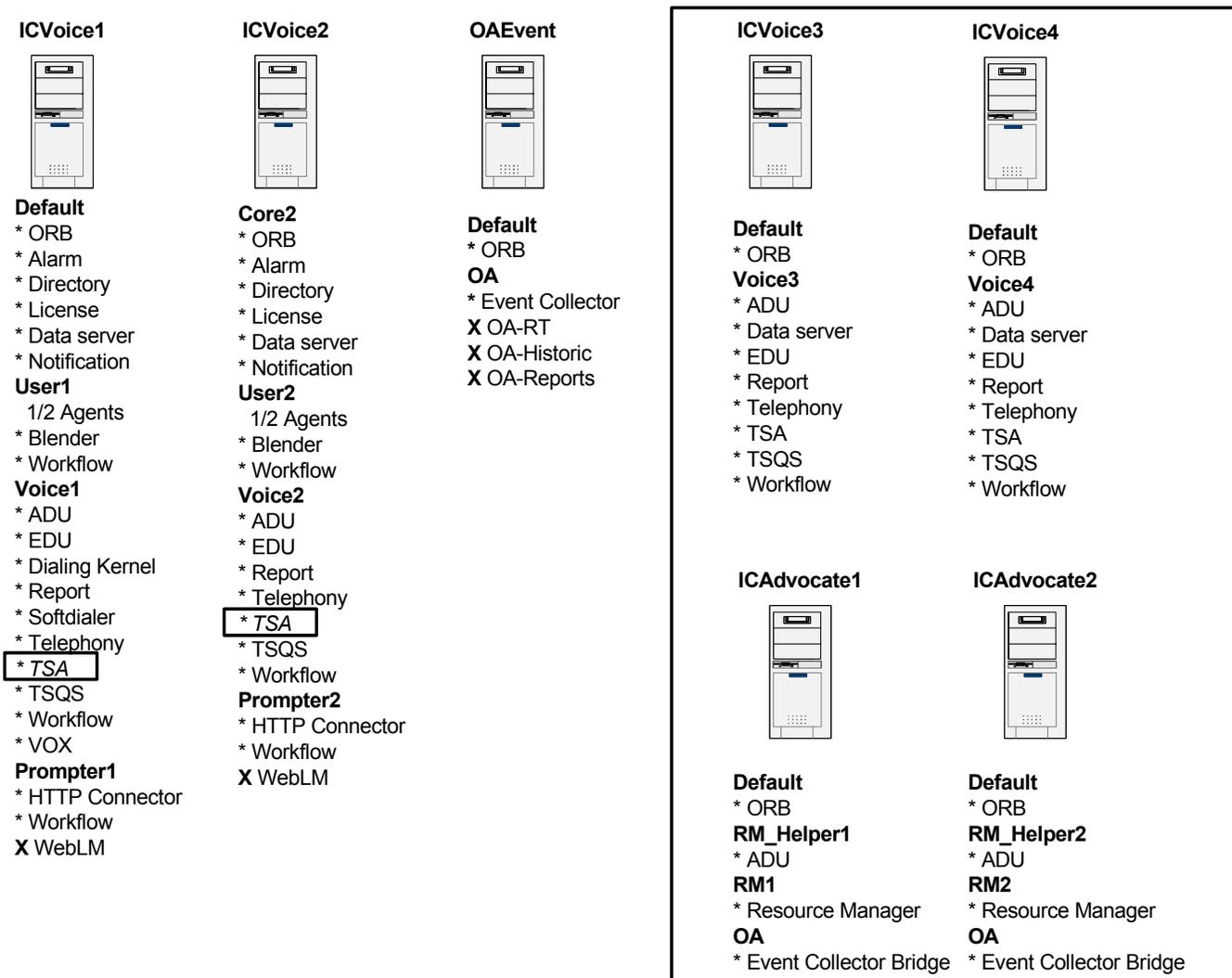
The Business Advocate server components in this scenario are distributed across the following Avaya IC domains in addition to those listed in [Scenario 1: Avaya IC domain overview](#) on page 94:

- Voice3
- Voice4
- RM1
- RM2
- RM_Helper1
- RM_Helper2

Scenario 3: Partitioning of Business Advocate servers

The physical partitioning of the servers reflects the distribution of the Business Advocate components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of Business Advocate servers on the server machines. The highlighted servers are in addition to those components described in [Scenario 1: Partitioning of servers](#) on page 95.



Scenario 3: Failover strategy

Business Advocate has some unique failover strategies for the Resource Manager and the voice channel. For details about those strategies, see *IC Business Advocate Configuration and Administration*.

The following table shows the failover strategy for the new Avaya IC domains and the Business Advocate domains in this scenario. The failover for the other Avaya IC domains is the same as described in [Scenario 1: Partitioning of servers](#) on page 95.

The Business Advocate domains do not failover to any of the other Avaya IC domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Voice3	<ol style="list-style-type: none"> 1. Voice3 2. Voice4 3. Default 4. Core2
Voice4	<ol style="list-style-type: none"> 1. Voice4 2. Voice3 3. Core2 4. Default
RM_Helper1	<ol style="list-style-type: none"> 1. RM_Helper1 2. Default 3. Core2
RM_Helper2	<ol style="list-style-type: none"> 1. RM_Helper2 2. Default 3. Core2
RM1	<ol style="list-style-type: none"> 1. RM1 2. RM_Helper1 3. RM_Helper2 4. Default 5. Core2
RM2	<ol style="list-style-type: none"> 1. RM2 2. RM_Helper1 3. RM_Helper2 4. Default 5. Core2

Scenario 4: Single site, multi-media

This scenario is the recommended minimum configuration for a basic single site, multi-media deployment. If you customize your multi-media deployment, you may need to include additional machines and Avaya IC components.

Topics for this scenario include:

- [Scenario 4: Deployment overview](#) on page 104.
- [Scenario 4: Avaya IC domain overview](#) on page 105.
- [Scenario 4: Partitioning of servers](#) on page 106.
- [Scenario 4: Failover strategy](#) on page 107.

Scenario 4: Deployment overview

This scenario shows a potential production system with the following deployment:

- All media channels
- Single site
- One machine for the Website and Web-related servers in the network DMZ
- Four machines for all other Avaya IC servers
- One machine for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS
- Hardware redundancy
- Server (VESP) failover

Scenario 4: Avaya IC domain overview

The Avaya IC server components in this scenario are distributed across the following Avaya IC domains:

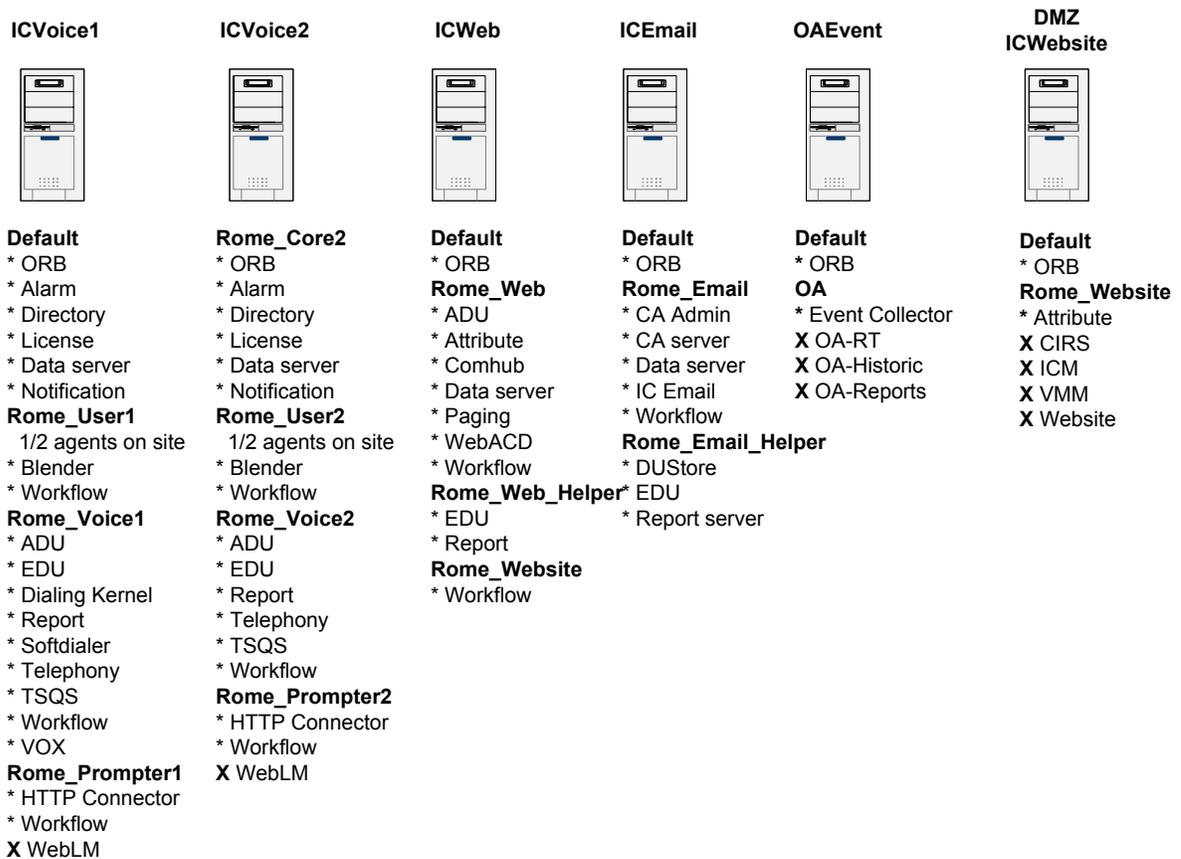
- Default
- Rome_Core2
- Rome_User1
- Rome_User2
- Rome_Voice1
- Rome_Voice2
- Rome_Prompter1
- Rome_Prompter2
- Rome_Web
- Rome_Web_Helper
- Rome_Website
- Rome_Email
- Rome_Email_Helper
- OA

These domains use the following naming convention: *<site>_<service>*. For a single site deployment that will not expand to more sites, you can use a different naming convention for domains, such as *<machine_name>_<service>*.

Scenario 4: Partitioning of servers

The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of components on the server machines. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 4: Failover strategy

The following table shows the failover strategy in this scenario. The components in the Avaya IC domain in the left column failover to the Avaya IC domains in the right column in the order listed.

Domain	Failover domains
Default	<ol style="list-style-type: none"> 1. Default 2. Rome_Core2
Rome_Core2	<ol style="list-style-type: none"> 1. Rome_Core2 2. Default
Rome_User1	<ol style="list-style-type: none"> 1. Rome_User1 2. Rome_User2 3. Rome_Prompter1 4. Rome_Prompter2 5. Rome_Voice1 6. Rome_Voice2 7. Default 8. Rome_Core2 9. Rome_Email 10. Rome_Email_Helper 11. Rome_Web 12. Rome_Web_Helper
Rome_User2	<ol style="list-style-type: none"> 1. Rome_User2 2. Rome_User1 3. Rome_Prompter2 4. Rome_Prompter1 5. Rome_Voice2 6. Rome_Voice1 7. Rome_Core2 8. Default 9. Rome_Email 10. Rome_Email_Helper 11. Rome_Web 12. Rome_Web_Helper
Rome_Voice1	<ol style="list-style-type: none"> 1. Rome_Voice1 2. Rome_Voice2 3. Default 4. Rome_Core2
Rome_Voice2	<ol style="list-style-type: none"> 1. Rome_Voice2 2. Rome_Voice1 3. Rome_Core2 4. Default

Avaya IC single site deployment scenarios

Domain	Failover domains
Rome_Prompter1	<ol style="list-style-type: none"> 1. Rome_Prompter1 2. Rome_Prompter2 3. Default 4. Rome_Core2 5. Rome_Voice1 6. Rome_Voice2
Rome_Prompter2	<ol style="list-style-type: none"> 1. Rome_Prompter2 2. Rome_Prompter1 3. Rome_Core2 4. Default 5. Rome_Voice2 6. Rome_Voice1
Rome_Email	<ol style="list-style-type: none"> 1. Rome_Email 2. Rome_Email_Helper 3. Rome_Web 4. Default 5. Rome_Core2
Rome_Email_Helper	<ol style="list-style-type: none"> 1. Rome_Email_Helper 2. Rome_Email 3. Default 4. Rome_Core2
Rome_Web	<ol style="list-style-type: none"> 1. Rome_Web 2. Rome_Web_Helper 3. Rome_Email 4. Default 5. Rome_Core2 <p>Note: If you do not configure the Event Collector server to monitor the ADU server in this domain, configure the server groups on the Advanced tab as follows: Rome_Web – Priority Value = 1</p>
Rome_Web_Helper	<ol style="list-style-type: none"> 1. Rome_Web_Helper 2. Rome_Web 3. Default 4. Rome_Core2

Domain	Failover domains
Rome_Website	<ol style="list-style-type: none"> 1. Rome_Website 2. Rome_Web 3. Rome_Voice1 4. Default 5. Rome_Core2
OA	<ol style="list-style-type: none"> 1. OA 2. Rome_Voice1 3. Rome_Voice2 4. Default 5. Rome_Core2

Scenario 5: Single site, multi-media with high volume voice

This scenario is the recommended minimum configuration for a basic single site, multi-media deployment in a contact center which expects a high volume of voice contacts. If you customize your multi-media deployment, you may need to include additional machines and Avaya IC components.

This deployment is similar to [Scenario 4: Single site, multi-media](#) on page 104. However, the Voice services are on dedicated processors to increase their ability to handle higher voice contact transaction rates.

This deployment also shows how you can configure redundancy for Core and Voice services. Telephony Servers are paired for redundancy. Web and Email services do not have redundancy support.

Topics for this scenario include:

- [Scenario 5: Deployment overview](#) on page 110.
- [Scenario 5: Avaya IC domain overview](#) on page 110.
- [Scenario 5: Partitioning of servers](#) on page 111.
- [Scenario 5: Failover strategy](#) on page 112.

Scenario 5: Deployment overview

This scenario shows a potential production system with the following deployment:

- All media channels with high volume voice traffic
- Single site
- One machine for the Website and Web-related servers in the network DMZ
- Six machines for all other Avaya IC servers
- One machine for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS
- Hardware redundancy
- Server (VESP) failover

Scenario 5: Avaya IC domain overview

The Avaya IC server components in this scenario are distributed across the following Avaya IC domains:

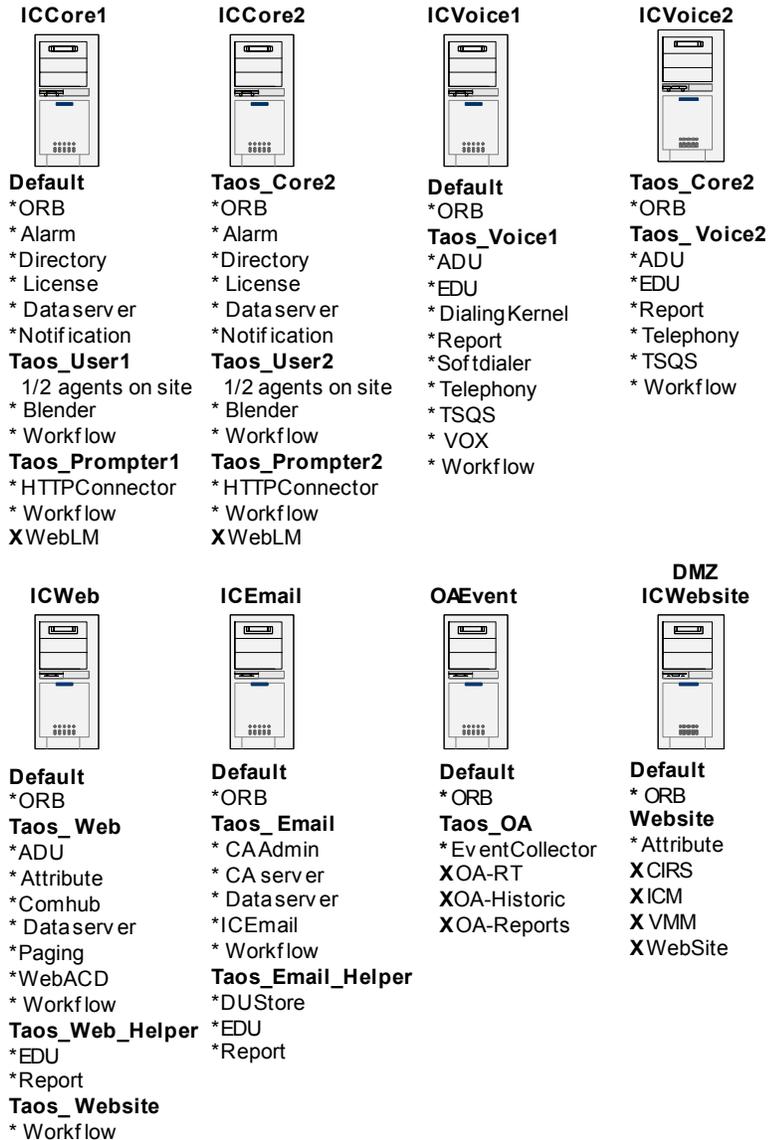
- Default
- Taos_User1
- Taos_User2
- Taos_Voice1
- Taos_Voice2
- Taos_Prompter1
- Taos_Prompter2
- Taos_Core2
- Taos_Web
- Taos_Website
- Taos_Web_Helper
- Taos_Email
- Taos_Email_Helper
- Taos_OA

These domains use the following naming convention: *<site>_<service>*. For a single site deployment that will not expand to more sites, you can use a different naming convention for domains, such as *<machine_name>_<service>*.

Scenario 5: Partitioning of servers

The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of components on the server machines. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 5: Failover strategy

The following table shows the failover strategy in this scenario. The components in the Avaya IC domain in the left column failover to the Avaya IC domains in the right column in the order listed.

Domain	Failover domains
Taos_User1	<ol style="list-style-type: none"> 1. Taos_User1 2. Taos_User2 3. Taos_Prompter1 4. Taos_Prompter2 5. Taos_Voice1 6. Taos_Voice2 7. Default 8. Taos_Core2 9. Taos_Email 10. Taos_Email_Helper 11. Taos_Web 12. Taos_Web_Helper
Taos_User2	<ol style="list-style-type: none"> 1. Taos_User2 2. Taos_User1 3. Taos_Prompter2 4. Taos_Prompter1 5. Taos_Voice2 6. Taos_Voice1 7. Taos_Core2 8. Default 9. Taos_Email 10. Taos_Email_Helper 11. Taos_Web 12. Taos_Web_Helper
Taos_Voice1	<ol style="list-style-type: none"> 1. Taos_Voice1 2. Taos_Voice2 3. Default 4. Taos_Core2
Taos_Voice2	<ol style="list-style-type: none"> 1. Taos_Voice2 2. Taos_Voice1 3. Taos_Core2 4. Default

Scenario 5: Single site, multi-media with high volume voice

Domain	Failover domains
Taos_Prompter1	<ol style="list-style-type: none"> 1. Taos_Prompter1 2. Taos_Prompter2 3. Default 4. Taos_Core2 5. Taos_Voice1 6. Taos_Voice2
Taos_Prompter2	<ol style="list-style-type: none"> 1. Taos_Prompter2 2. Taos_Prompter1 3. Taos_Core2 4. Default 5. Taos_Voice2 6. Taos_Voice1
Default	<ol style="list-style-type: none"> 1. Default 2. Taos_Core2
Taos_Core2	<ol style="list-style-type: none"> 1. Taos_Core2 2. Default
Taos_Email	<ol style="list-style-type: none"> 1. Taos_Email 2. Taos_Email_Helper 3. Taos_Web 4. Default 5. Taos_Core2
Taos_Email_Helper	<ol style="list-style-type: none"> 1. Taos_Email_Helper 2. Taos_Email 3. Default 4. Taos_Core2
Taos_Web	<ol style="list-style-type: none"> 1. Taos_Web 2. Taos_Web_Helper 3. Taos_Email 4. Default 5. Taos_Core2 <p>Note: If you do not configure the Event Collector server to monitor the ADU server in this domain, configure the server groups on the Advanced tab as follows: Taos_Web – Priority Value = 1</p>
Taos_Web_Helper	<ol style="list-style-type: none"> 1. Taos_Web_Helper 2. Taos_Web 3. Default 4. Taos_Core2

Domain	Failover domains
Taos_Website	<ol style="list-style-type: none">1. Taos_Website2. Taos_Web3. Taos_Voice14. Default5. Taos_Core2
Taos_OA	<ol style="list-style-type: none">1. Taos_OA2. Taos_Voice13. Taos_Voice24. Default5. Taos_Core2

Scenario 6: Business Advocate for single site, multi-media

This scenario extends *Scenario 4: Single site, multi-media* to include Business Advocate. This scenario is the recommended minimum configuration to add Business Advocate components to a basic single site, multi-media deployment in a contact center which does not expect a high volume of contacts.

A single instance of Business Advocate indicates that the Avaya IC system includes only one Logical Resource Manager for Business Advocate. For more information about Logical Resource Managers, see *IC Business Advocate Configuration and Administration*.

Topics for this scenario include:

- [Scenario 6: Deployment overview](#) on page 115.
- [Scenario 6: Avaya IC domain overview](#) on page 115.
- [Scenario 6: Partitioning of Business Advocate servers](#) on page 116.
- [Scenario 6: Failover strategy](#) on page 117.

Scenario 6: Deployment overview

This scenario adds Business Advocate servers to the machines that host Avaya IC servers, described in [Scenario 4: Deployment overview](#) on page 104.

If you host:

- Avaya IC servers on Windows, this scenario does not require additional machines.
- Avaya IC servers on Solaris or AIX, this scenario requires two Windows machines to host the Resource Manager servers.
- Avaya IC and Avaya OA databases in DB2 on AIX, this scenario requires the following:
 - A Windows or Solaris machine to host the Business Advocate databases. If desired, you can install SQL Server on a machine that hosts a Resource Manager server.
 - An additional Data server on the same machine as a Resource Manager server. This Data server will provide Avaya IC with access to the Business Advocate database and data, such as service classes. Configure this Data server in its own domain, such as RM_Data. Add the RM_Data domain to the failover path for all domains that include Directory servers and Workflow servers that run contact qualification workflows.

Scenario 6: Avaya IC domain overview

The Business Advocate server components in this scenario are distributed across the following Avaya IC domains in addition to those listed in [Scenario 4: Avaya IC domain overview](#) on page 105:

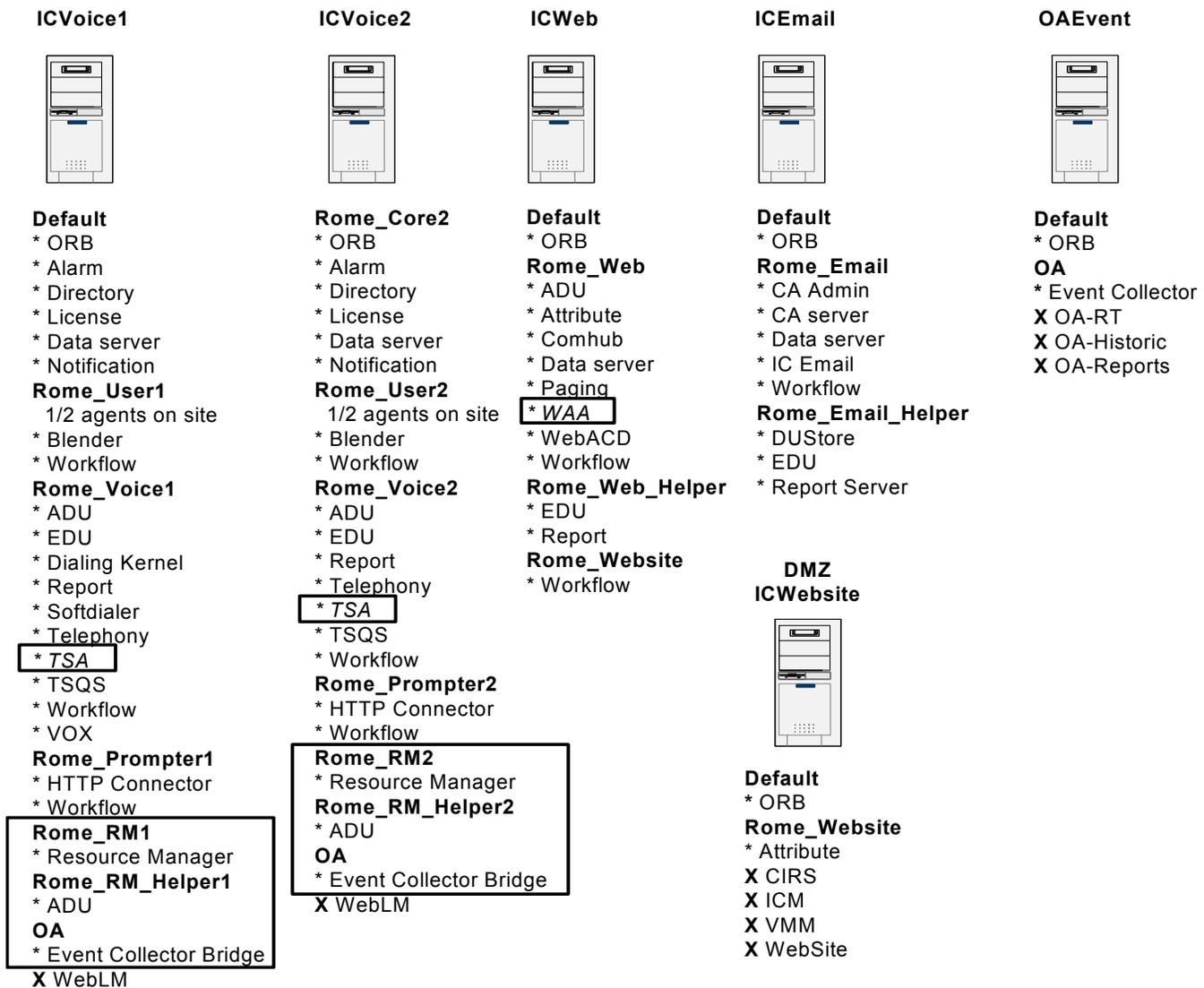
- Rome_RM1
- Rome_RM2
- Rome_RM_Helper1
- Rome_RM_Helper2

These domains use the following naming convention: `<site>_<service>`. For a single site deployment that will not expand to more sites, you can use a different naming convention for domains, such as `<machine_name>_<service>`.

Scenario 6: Partitioning of Business Advocate servers

The physical partitioning of the servers reflects the distribution of the Business Advocate components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of Business Advocate servers on the server machines. The highlighted servers are in addition to those components described in [Scenario 4: Partitioning of servers](#) on page 106.



Scenario 6: Failover strategy

Business Advocate has some unique failover strategies for the Resource Manager and the voice channel. For details about those strategies, see *IC Business Advocate Configuration and Administration*.

The following table shows the failover strategy for the Business Advocate domains in this scenario. The Business Advocate domains do not failover to any of the other Avaya IC domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
RM_Helper1	<ol style="list-style-type: none"> 1. RM_Helper1 2. Default 3. Core2
RM_Helper2	<ol style="list-style-type: none"> 1. RM_Helper2 2. Default 3. Core2
RM1	<ol style="list-style-type: none"> 1. RM1 2. RM_Helper1 3. RM_Helper2 4. Default 5. Core2
RM2	<ol style="list-style-type: none"> 1. RM2 2. RM_Helper1 3. RM_Helper2 4. Default 5. Core2

Scenario 7: Single site, chat and email only

This scenario is the recommended minimum configuration for a basic single site deployment in a contact center which includes chat and email channels. This deployment does not include redundancy. If you customize this deployment, you may need to include additional machines and Avaya IC components.

Topics for this scenario include:

- [Scenario 7: Deployment overview](#) on page 118.
- [Scenario 7: Avaya IC domain overview](#) on page 118.

- [Scenario 7: Partitioning of servers](#) on page 119.
- [Scenario 7: Failover strategy](#) on page 120.

Scenario 7: Deployment overview

This scenario shows a potential production system with the following deployment:

- Chat and email media channels
- Single site
- One machine for the Website and Web-related servers in the network DMZ
- Two machines for all other Avaya IC servers
- One machine for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS
- Hardware redundancy
- Server (VESP) failover

Scenario 7: Avaya IC domain overview

The Avaya IC server components in this scenario are distributed across the following Avaya IC domains:

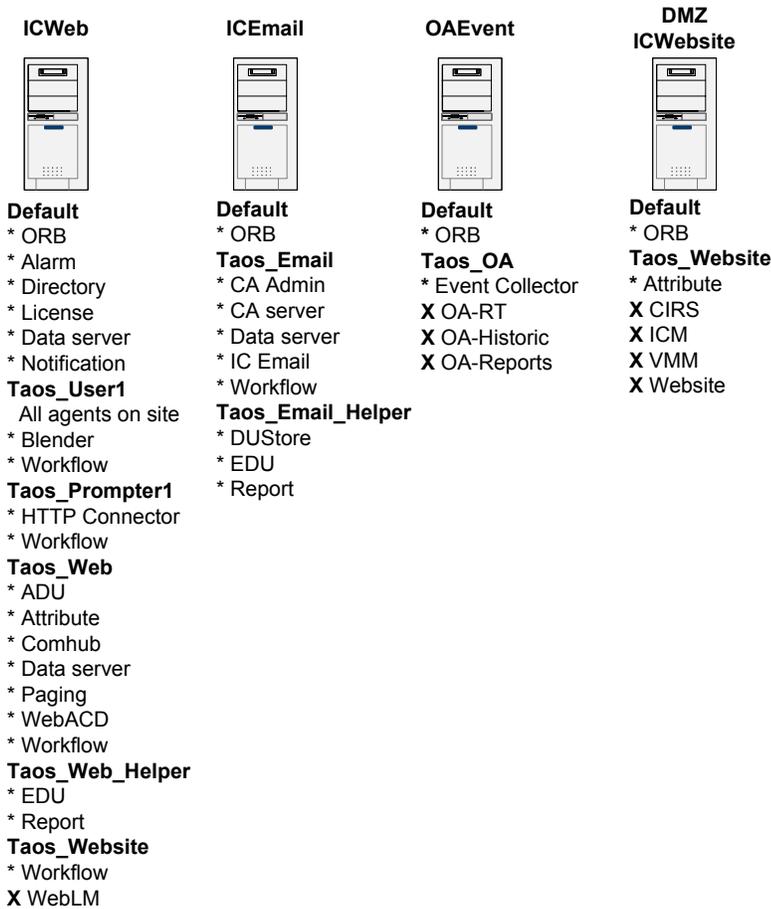
- Default
- Taos_User1
- Taos_Prompter1
- Taos_Web
- Taos_Web_Helper
- Taos_Website
- Taos_Email
- Taos_Email_Helper
- Taos_OA

These domains use the following naming convention: *<site>_<service>*. For a single site deployment that will not expand to more sites, you can use a different naming convention for domains, such as *<machine_name>_<service>*.

Scenario 7: Partitioning of servers

The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of components on the server machines. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 7: Failover strategy

The following table shows the failover strategy in this scenario. The components in the Avaya IC domain in the left column failover to the Avaya IC domains in the right column in the order listed.

Domain	Failover domains
Taos_User1	<ol style="list-style-type: none"> 1. Taos_User1 2. Taos_Prompter1 3. Default 4. Taos_Email 5. Taos_Web 6. Taos_Email_Helper 7. Taos_Web_Helper
Taos_Prompter1	<ol style="list-style-type: none"> 1. Taos_Prompter1 2. Default
Default	<ol style="list-style-type: none"> 1. Default
Taos_Email	<ol style="list-style-type: none"> 1. Taos_Email 2. Taos_Email_Helper 3. Taos_Web 4. Default
Taos_Email_Helper	<ol style="list-style-type: none"> 1. Taos_Email_Helper 2. Taos_Email 3. Default
Taos_Web	<ol style="list-style-type: none"> 1. Taos_Web 2. Taos_Web_Helper 3. Default 4. Taos_Email
Taos_Web_Helper	<ol style="list-style-type: none"> 1. Taos_Web_Helper 2. Taos_Web 3. Default
Taos_Website	<ol style="list-style-type: none"> 1. Taos_Website 2. Default
Taos_OA	<ol style="list-style-type: none"> 1. Taos_OA 2. Taos_Web 3. Default

■ ■ ■ ■ ■ ■

Chapter 5: Avaya IC multi-site deployment scenarios

This section includes scenarios of sample deployments for an Avaya IC system with two sites. This section includes the following scenarios:

- [Scenario 8: Two sites, voice only](#) on page 122.
- [Scenario 9: Two sites, multi-media](#) on page 129.
- [Scenario 10: Single instance Business Advocate for two sites, multi-media](#) on page 138.
- [Scenario 11: Multi-instance Business Advocate for two sites, multi-media](#) on page 142.
- [Scenario 12: Two sites, chat and email only](#) on page 148.
- [Scenario 13: Two sites, multi-media, data center](#) on page 152.
- [Scenario 14: Business Advocate for two sites, multi-media, data center](#) on page 159.

If your Avaya IC system includes an integration with Siebel 7, see *Avaya IC for Siebel 7 Integration* for deployment guidelines. This manual is available on the Avaya IC for Siebel 7 installation CD-ROM.

 **Important:**

The total number of agents that a Telephony server can support depends upon the volume of voice contacts. The configurations in these scenarios assume sites with fewer than 1,200 agents.

Scenario 8: Two sites, voice only

This scenario is the recommended minimum configuration for a basic multi-site, voice media only deployment in a contact center. If you customize your Telephony deployment, you may need to include additional machines and Avaya IC components.

Topics for this scenario include:

- [Scenario 8: Deployment overview](#) on page 122.
- [Scenario 8: Avaya IC domain overview](#) on page 123.
- [Scenario 8: Partitioning of Avaya IC servers](#) on page 123.
- [Scenario 8: Failover strategy](#) on page 125.

Scenario 8: Deployment overview

This scenario shows a potential production system with the following deployment:

- Voice channel only (no other media channels)
- Two sites (London and Chicago) connected by a WAN
- Two machines at each site for your Avaya IC servers
- One machine at each site for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One machine for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS

Tip:

You can locate the RDBMS machine in the London LAN with WAN access from Chicago, or at a third site with WAN access from London and Chicago. If you deploy one of these options, host the Data servers on machines that are local to the RDBMS.

- Hardware redundancy
- Server (VESP) failover

Scenario 8: Avaya IC domain overview

This scenario includes two sites: London and Chicago. The following table shows the Avaya IC domains in each site. The Default domain is used in both sites.

Site 1 – London	Site 2 – Chicago
<ul style="list-style-type: none"> ● London_User1 ● London_User2 ● London_Voice1 ● London_Voice2 ● London_Prompter1 ● London_Prompter2 ● Default ● London_Core2 ● London_Data1 ● London_Data2 ● London_OA 	<ul style="list-style-type: none"> ● Chicago_User1 ● Chicago_User2 ● Chicago_Voice1 ● Chicago_Voice2 ● Chicago_Prompter1 ● Chicago_Prompter2 ● Chicago_Core1 ● Chicago_Core2 ● Chicago_OA

Scenario 8: Partitioning of Avaya IC servers

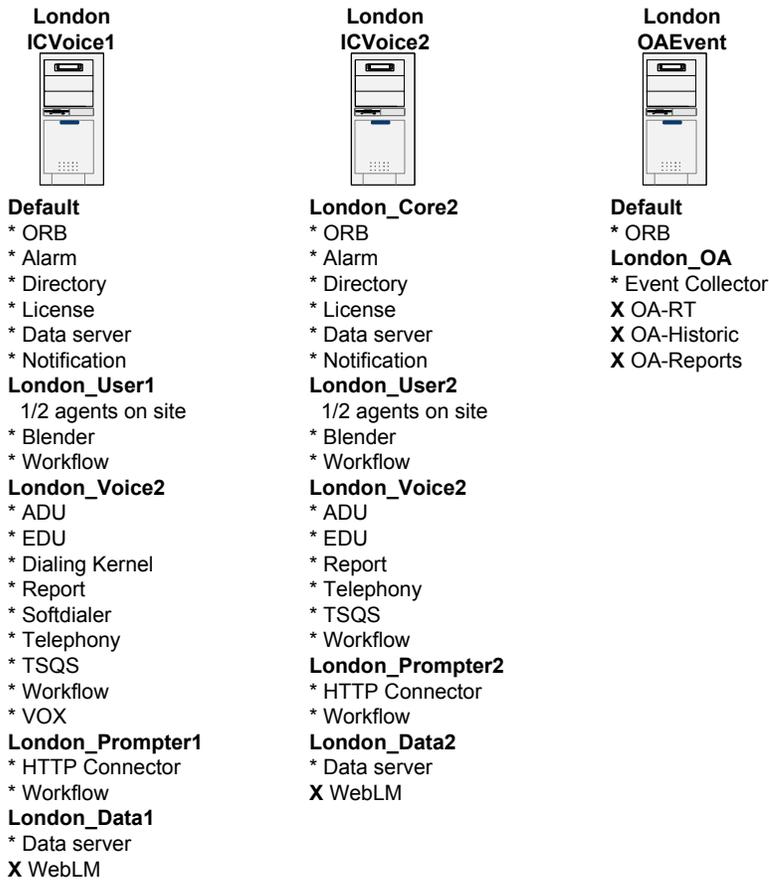
The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

This section includes the following topics:

- [Partitioning at London site](#) on page 124.
- [Partitioning at Chicago site](#) on page 125

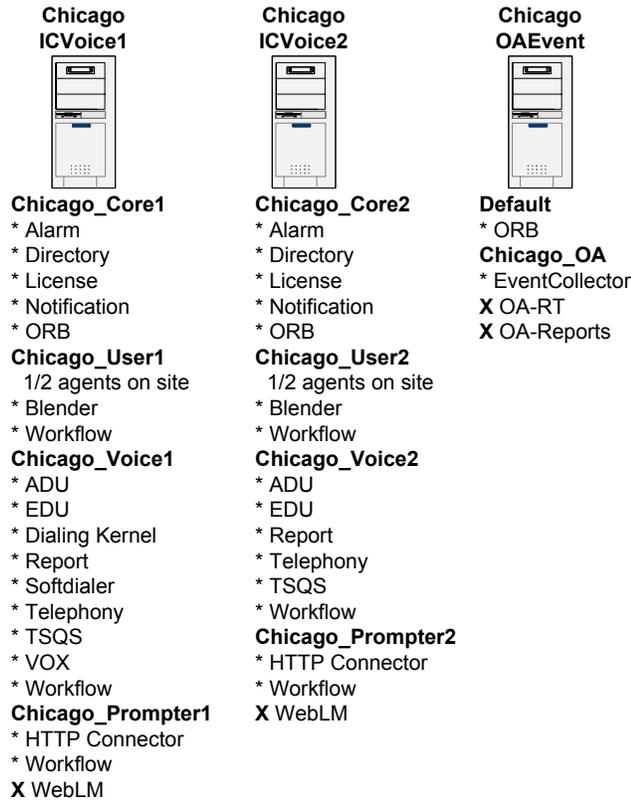
Partitioning at London site

The following figure shows the distribution of components on the server machines at the London site. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Partitioning at Chicago site

The following figure shows the distribution of components on the server machines at the Chicago site. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 8: Failover strategy

This section includes the following topics:

- [Failover strategy at London site](#) on page 126.
- [Failover strategy at Chicago site](#) on page 128.

Failover strategy at London site

The following table shows the failover strategy for the London site in this example. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
London_User1	<ol style="list-style-type: none"> 1. London_User1 2. London_User2 3. London_Prompter1 4. London_Prompter2 5. London_Voice1 6. London_Voice2 7. Default 8. London_Core2
London_User2	<ol style="list-style-type: none"> 1. London_User2 2. London_User1 3. London_Prompter2 4. London_Prompter1 5. London_Voice2 6. London_Voice1 7. London_Core2 8. Default
London_Voice1	<ol style="list-style-type: none"> 1. London_Voice1 2. London_Voice2 3. Default 4. London_Core2
London_Voice2	<ol style="list-style-type: none"> 1. London_Voice2 2. London_Voice1 3. London_Core2 4. Default
London_Prompter1	<ol style="list-style-type: none"> 1. London_Prompter1 2. London_Prompter2 3. Default 4. London_Core2 5. London_Voice1 6. London_Voice2
London_Prompter2	<ol style="list-style-type: none"> 1. London_Prompter2 2. London_Prompter1 3. London_Core2 4. Default 5. London_Voice2 6. London_Voice1

Domain	Failover domains
London_OA	<ol style="list-style-type: none"> 1. London_OA 2. London_Voice1 3. London_Voice2 4. Default 5. London_Core2
London_Data1	<ol style="list-style-type: none"> 1. London_Data1 2. Default 3. London_Core2
London_Data2	<ol style="list-style-type: none"> 1. London_Data2 2. Default 3. London_Core2
Default	<ol style="list-style-type: none"> 1. Default 2. London_Core2
London_Core2	<ol style="list-style-type: none"> 1. London_Core2 2. Default

Failover strategy at Chicago site

The following table shows the failover strategy for the Chicago site in this example. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Chicago_User1	<ol style="list-style-type: none"> 1. Chicago_User1 2. Chicago_User2 3. Chicago_Prompter1 4. Chicago_Prompter2 5. Chicago_Voice1 6. Chicago_Voice2 7. London_Data1 8. London_Data2 9. Chicago_Core1 10. Chicago_Core2
Chicago_User2	<ol style="list-style-type: none"> 1. Chicago_User2 2. Chicago_User1 3. Chicago_Prompter2 4. Chicago_Prompter1 5. Chicago_Voice2 6. Chicago_Voice1 7. London_Data2 8. London_Data1 9. Chicago_Core2 10. Chicago_Core1
Chicago_Voice1	<ol style="list-style-type: none"> 1. Chicago_Voice1 2. Chicago_Voice2 3. London_Data1 4. London_Data2 5. Chicago_Core1 6. Chicago_Core2
Chicago_Voice2	<ol style="list-style-type: none"> 1. Chicago_Voice2 2. Chicago_Voice1 3. London_Data2 4. London_Data1 5. Chicago_Core2 6. Chicago_Core1

Domain	Failover domains
Chicago_Prompter1	<ol style="list-style-type: none"> 1. Chicago_Prompter1 2. Chicago_Prompter2 3. London_Data1 4. London_Data2 5. Chicago_Core1 6. Chicago_Core2 7. Chicago_Voice1 8. Chicago_Voice2
Chicago_Prompter2	<ol style="list-style-type: none"> 1. Chicago_Prompter2 2. Chicago_Prompter1 3. London_Data2 4. London_Data1 5. Chicago_Core2 6. Chicago_Core1 7. Chicago_Voice2 8. Chicago_Voice1
Chicago_OA	<ol style="list-style-type: none"> 1. Chicago_OA 2. Chicago_Voice1 3. Chicago_Voice2 4. Chicago_Core1 5. Chicago_Core2
Chicago_Core1	<ol style="list-style-type: none"> 1. Chicago_Core1 2. Chicago_Core2 3. Default 4. London_Core2
Chicago_Core2	<ol style="list-style-type: none"> 1. Chicago_Core2 2. Chicago_Core1 3. London_Core2 4. Default

Scenario 9: Two sites, multi-media

This scenario is the recommended minimum configuration for a basic multi-site, multi-media deployment. This configuration combines the following previous scenarios:

- York – [Scenario 1: Single site, voice only](#) on page 94
- Paris – [Scenario 4: Single site, multi-media](#) on page 104

In this scenario, you add Email and Web domains to the end of the York agent lists to bridge the York agent pools to Paris for non-voice channels. If you customize your

multi-site, multi-media deployment, you may need to include additional machines and Avaya IC components.

Topics for this scenario include:

- [Scenario 9: Deployment overview](#) on page 130.
- [Scenario 9: Avaya IC domain overview](#) on page 131.
- [Scenario 9: Partitioning of servers](#) on page 131.
- [Scenario 9: Failover strategy](#) on page 133.

Scenario 9: Deployment overview

This scenario shows a potential production system with the following deployment:

- All media channels
- Two sites connected by a WAN
- Two machines for Avaya IC Telephony components at York
- Five machines for all other Avaya IC components at Paris
- One machine at each site for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One machine for the Website and Web-related servers in the network DMZ
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS

Tip:

You can locate the RDBMS machine in the York LAN with WAN access from Paris, or at a third site with WAN access from York and Paris.

- Hardware redundancy
- Server (VESP) failover

Scenario 9: Avaya IC domain overview

This scenario includes two sites: York and Paris. The following table shows the Avaya IC domains in each site. The Default domain is used in both sites.

Site 1 – York	Site 2 – Paris
<ul style="list-style-type: none"> ● York_User1 ● York_User2 ● York_Voice1 ● York_Voice2 ● York_Prompter1 ● York_Prompter2 ● York_Core1 ● York_Core2 ● York_OA 	<ul style="list-style-type: none"> ● Paris_User1 ● Paris_User2 ● Paris_Voice1 ● Paris_Voice2 ● Paris_Prompter1 ● Paris_Prompter2 ● Default ● Paris_Core2 ● Paris_Web ● Paris_Web_Helper ● Paris_Email ● Paris_Email_Helper ● Paris_Website ● Paris_OA

Scenario 9: Partitioning of servers

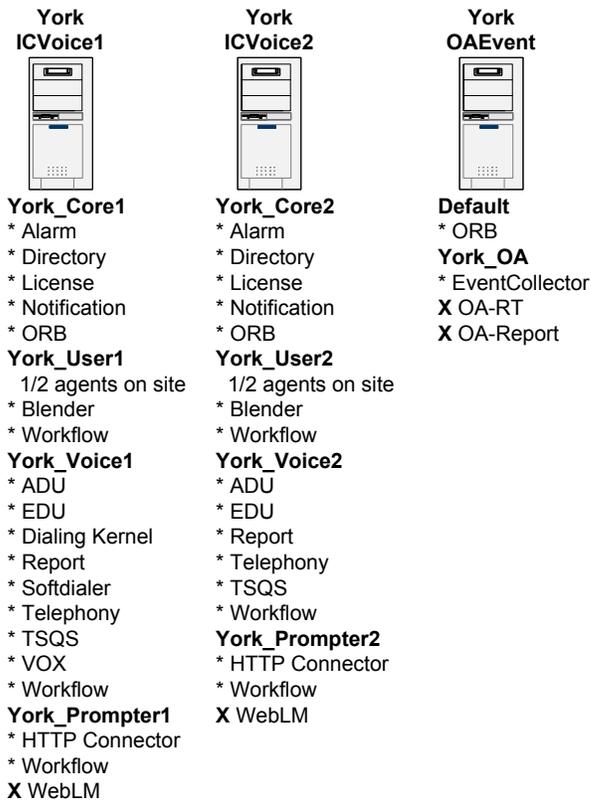
The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

This section includes the following topics:

- [Partitioning at York site](#) on page 132.
- [Partitioning at Paris site](#) on page 133

Partitioning at York site

The following figure shows the distribution of components on the server machines at the York site. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Partitioning at Paris site

The following figure shows the distribution of components on the server machines at the Paris site. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 9: Failover strategy

This section includes the following topics:

- [Failover strategy at York site](#) on page 134.
- [Failover strategy at Paris site](#) on page 136

Failover strategy at York site

The following table shows the failover strategy at the York site in this example. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
York_User1	<ol style="list-style-type: none"> 1. York_User1 2. York_User2 3. York_Prompter1 4. York_Prompter2 5. York_Voice1 6. York_Voice2 7. York_Core1 8. York_Core2 9. Default 10. Paris_Core2 11. Paris_Email 12. Paris_Email_Helper 13. Paris_Web 14. Paris_Web_Helper
York_User2	<ol style="list-style-type: none"> 1. York_User2 2. York_User1 3. York_Prompter2 4. York_Prompter1 5. York_Voice2 6. York_Voice1 7. York_Core2 8. York_Core1 9. Paris_Core2 10. Default 11. Paris_Email 12. Paris_Email_Helper 13. Paris_Web 14. Paris_Web_Helper
York_Voice1	<ol style="list-style-type: none"> 1. York_Voice1 2. York_Voice2 3. York_Core1 4. York_Core2 5. Default 6. Paris_Core2

Domain	Failover domains
York_Voice2	<ol style="list-style-type: none"> 1. York_Voice2 2. York_Voice1 3. York_Core2 4. York_Core1 5. Paris_Core2 6. Default
York_Prompter1	<ol style="list-style-type: none"> 1. York_Prompter1 2. York_Prompter2 3. York_Core1 4. York_Core2 5. York_Voice1 6. York_Voice2 7. Default 8. Paris_Core2
York_Prompter2	<ol style="list-style-type: none"> 1. York_Prompter2 2. York_Prompter1 3. York_Core2 4. York_Core1 5. York_Voice2 6. York_Voice1 7. Paris_Core2 8. Default
York_OA	<ol style="list-style-type: none"> 1. York_OA 2. York_Voice1 3. York_Voice2 4. York_Core1 5. York_Core2
York_Core1	<ol style="list-style-type: none"> 1. York_Core1 2. York_Core2 3. Default 4. Paris_Core2
York_Core2	<ol style="list-style-type: none"> 1. York_Core2 2. York_Core1 3. Paris_Core2 4. Default

Failover strategy at Paris site

The following table shows the failover strategy at the Paris site in this example. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Paris_User1	<ol style="list-style-type: none"> 1. Paris_User1 2. Paris_User2 3. Paris_Prompter1 4. Paris_Prompter2 5. Paris_Voice1 6. Paris_Voice2 7. Default 8. Paris_Core2 9. Paris_Web 10. Paris_Email 11. Paris_Email_Helper 12. Paris_Web_Helper
Paris_User2	<ol style="list-style-type: none"> 1. Paris_User2 2. Paris_User1 3. Paris_Prompter2 4. Paris_Prompter1 5. Paris_Voice2 6. Paris_Voice1 7. Paris_Core2 8. Default 9. Paris_Web 10. Paris_Email 11. Paris_Email_Helper 12. Paris_Web_Helper
Paris_Voice1	<ol style="list-style-type: none"> 1. Paris_Voice1 2. Paris_Voice2 3. Default 4. Paris_Core2
Paris_Voice2	<ol style="list-style-type: none"> 1. Paris_Voice2 2. Paris_Voice1 3. Paris_Core2 4. Default
Paris_Prompter1	<ol style="list-style-type: none"> 1. Paris_Prompter1 2. Paris_Prompter2 3. Paris_Core2 4. Default 5. Paris_Voice1 6. Paris_Voice2

Domain	Failover domains
Paris_Prompter2	<ol style="list-style-type: none"> 1. Paris_Prompter2 2. Paris_Prompter1 3. Default 4. Paris_Core2 5. Paris_Voice2 6. Paris_Voice1
Default	<ol style="list-style-type: none"> 1. Default 2. Paris_Core2
Paris_Core2	<ol style="list-style-type: none"> 1. Paris_Core2 2. Default
Paris_Email	<ol style="list-style-type: none"> 1. Paris_Email 2. Paris_Email_Helper 3. Paris_Web 4. Paris_Core2 5. Default
Paris_Email_Helper	<ol style="list-style-type: none"> 1. Paris_Email_Helper 2. Paris_Email 3. Paris_Core2 4. Default
Paris_Web	<ol style="list-style-type: none"> 1. Paris_Web 2. Paris_Web_Helper 3. Paris_Email 4. Paris_Core2 5. Default <p>Note: If you do not configure the Event Collector server to monitor the ADU server in this domain, configure the server groups on the Advanced tab as follows: Paris_Web – Priority Value = 1</p>
Paris_Web_Helper	<ol style="list-style-type: none"> 1. Paris_Web_Helper 2. Paris_Web 3. Paris_Core2 4. Default
Paris_Website	<ol style="list-style-type: none"> 1. Paris_Website 2. Paris_Web 3. Paris_Voice1 4. Default 5. Paris_Core2
Paris_OA	<ol style="list-style-type: none"> 1. Paris_OA 2. Paris_Voice1 3. Paris_Voice2 4. Default 5. Paris_Core2

Scenario 10: Single instance Business Advocate for two sites, multi-media

This scenario extends [Scenario 9: Two sites, multi-media](#) on page 129 to include Business Advocate. This scenario is the recommended minimum configuration to add one instance of Business Advocate to a basic multi-site, multi-media deployment in a contact center. If you customize your multi-media deployment, you might need to include additional machines and Avaya IC components.

Note:

This scenario uses the same Workflow servers as *Scenario 9: Two sites, multi-media*. However, to correctly run with Business Advocate, these Workflow servers must run the Business Advocate workflows to qualify and transfer contacts.

A single instance of Business Advocate indicates that the Avaya IC system includes only one Logical Resource Manager for Business Advocate. For more information about Logical Resource Managers, see *IC Business Advocate Configuration and Administration*.

Topics for this scenario include:

- [Scenario 10: Deployment overview](#) on page 138.
- [Scenario 10: Avaya IC domain overview](#) on page 139.
- [Scenario 10: Partitioning of Business Advocate servers](#) on page 139.
- [Scenario 10: Failover strategy for Business Advocate domains](#) on page 141.

Scenario 10: Deployment overview

This scenario adds Business Advocate servers to some of the machines that host Avaya IC servers, described in [Scenario 9: Deployment overview](#) on page 130. This scenario also adds two machines to host the Resource Manager server and other Avaya IC servers in the Paris domain.

If you host Avaya IC and Avaya OA databases in DB2 on AIX, this scenario requires the following:

- A Windows or Solaris machine to host the Business Advocate databases. If desired, you can install SQL Server on a machine that hosts a Resource Manager server.
- An additional Data server on the same machine as a Resource Manager server. This Data server will provide Avaya IC with access to the Business Advocate database and data, such as service classes. Configure this Data server in its own domain, such as RM_Data. Add the RM_Data domain to the failover path for all domains that include Directory servers and Workflow servers that run contact qualification workflows.

Scenario 10: Avaya IC domain overview

This scenario includes two sites: York and Paris. The Business Advocate servers in this scenario are distributed across the following Avaya IC domains including those listed in [Scenario 9: Avaya IC domain overview](#) on page 131.

The following table shows the Avaya IC domains in each site. The highlighted domains were added to support Business Advocate.

Site 1 – York	Site 2 – Paris
<ul style="list-style-type: none"> ● York_User1 ● York_User2 ● York_Voice1 ● York_Voice2 ● York_Prompter1 ● York_Prompter2 ● York_Core1 ● York_Core2 ● York_OA 	<ul style="list-style-type: none"> ● Paris_User1 ● Paris_User2 ● Paris_Voice1 ● Paris_Voice2 ● Paris_Prompter1 ● Paris_Prompter2 ● Default ● Paris_Core2 ● Paris_Email ● Paris_Email_Helper ● Paris_Web ● Paris_Web_Helper ● Paris_Website ● Paris_OA ● Paris_RM1 ● Paris_RM2 ● Paris_RM_Helper1 ● Paris_RM_Helper2

Scenario 10: Partitioning of Business Advocate servers

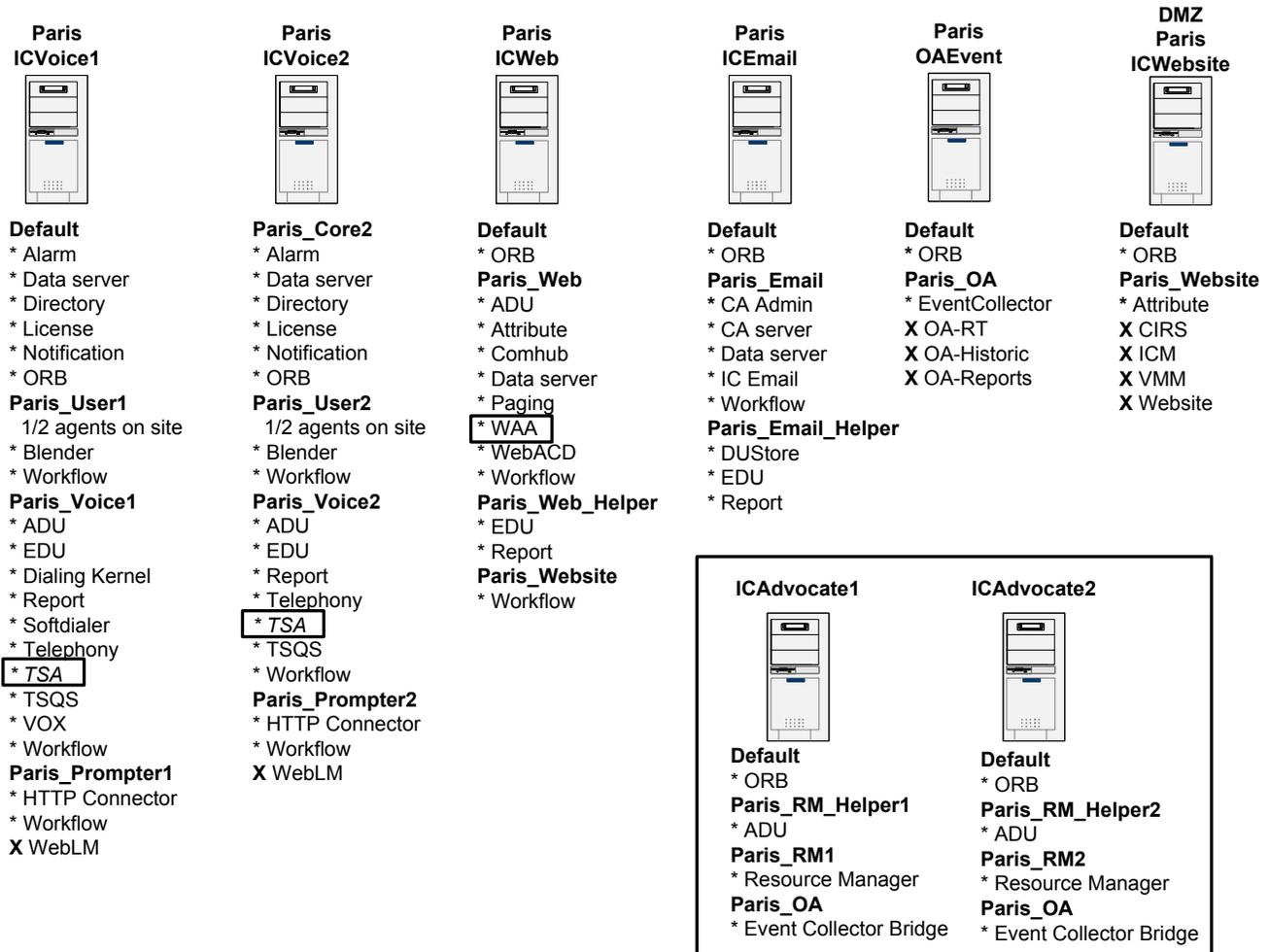
The physical partitioning of the servers reflects the distribution of the Business Advocate components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

This section includes the following topics:

- [Partitioning of Business Advocate servers at Paris site](#) on page 140.
- [Partitioning of Business Advocate servers at York site](#) on page 141.

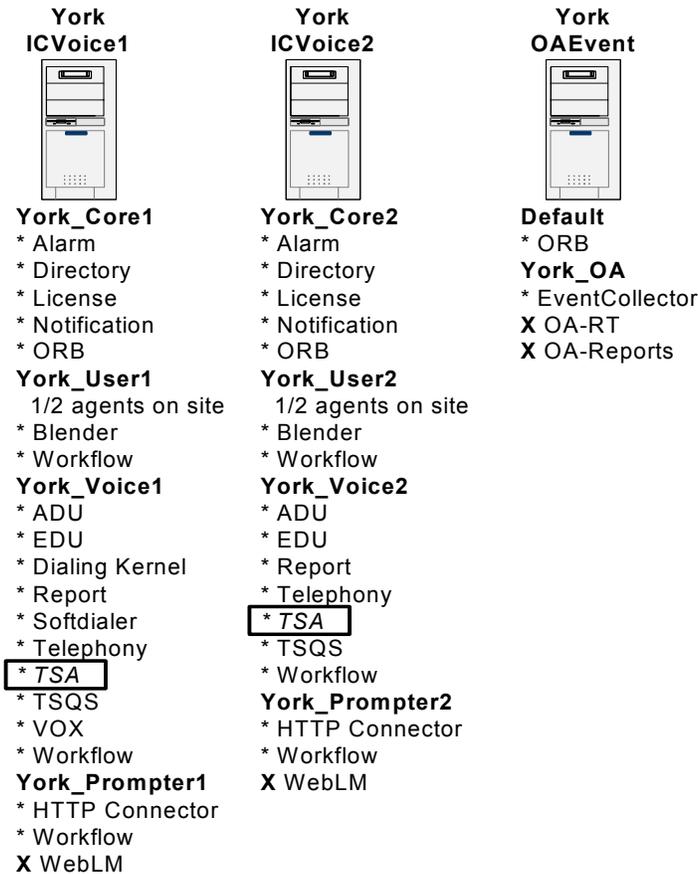
Partitioning of Business Advocate servers at Paris site

The following figure shows the distribution of Business Advocate servers on the server machines at the Paris site. The highlighted servers are in addition to those components described in [Scenario 9: Partitioning of servers](#) on page 131.



Partitioning of Business Advocate servers at York site

The following figure shows the distribution of Business Advocate servers on the server machines at the York site. The highlighted servers are in addition to those components described in [Scenario 9: Partitioning of servers](#) on page 131.



Scenario 10: Failover strategy for Business Advocate domains

Business Advocate has some unique failover strategies for the Resource Manager and the voice channel. For details about those strategies, see *IC Business Advocate Configuration and Administration*.

The failover strategy for the other domains is the same as in [Scenario 9: Two sites, multi-media](#) on page 129.

Avaya IC multi-site deployment scenarios

The following table shows the failover strategy for the Business Advocate domains in this example. The Business Advocate domains do not failover to any of the other Avaya IC domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Paris_RM_Helper1	<ol style="list-style-type: none">1. Paris_RM_Helper12. Default3. Paris_Core2
Paris_RM_Helper2	<ol style="list-style-type: none">1. Paris_RM_Helper22. Default3. Paris_Core2
Paris_RM1	<ol style="list-style-type: none">1. Paris_RM12. Paris_RM_Helper13. Paris_RM_Helper24. Default5. Paris_Core2
Paris_RM2	<ol style="list-style-type: none">1. Paris_RM22. Paris_RM_Helper13. Paris_RM_Helper24. Default5. Paris_Core2
Paris_OA	<ol style="list-style-type: none">1. Paris_OA2. Paris_Voice13. Paris_Voice24. Default5. Paris_Core2

Scenario 11: Multi-instance Business Advocate for two sites, multi-media

This scenario extends [Scenario 9: Two sites, multi-media](#) on page 129 to include Business Advocate. This scenario is the recommended minimum configuration to add two instances of Business Advocate to a basic multi-site, multi-media deployment in a contact center. If you customize your multi-media deployment, you might need to include additional machines and Avaya IC components.

Note:

This scenario uses the same Workflow servers as *Scenario 9: Two sites, multi-media*. However, to correctly run with Business Advocate, these Workflow servers must run the Business Advocate workflows to qualify and transfer contacts.

Multi-instance Business Advocate indicates that the Avaya IC system includes more than one Logical Resource Manager for Business Advocate. Each Logical Resource Manager handles a separate population of agents.

You can configure a Logical Resource Manager:

- For groups of agents across all sites who handle specific types of contacts
- For agents in each site

Avaya does not recommend that you configure a Logical Resource Manager for each Telephony switch in an Avaya IC system.

For more information about Logical Resource Managers, see *IC Business Advocate Configuration and Administration*.

Topics for this scenario include:

- [Scenario 11: Deployment overview](#) on page 143.
- [Scenario 11: Avaya IC domain overview](#) on page 144.
- [Scenario 11: Partitioning of Business Advocate servers](#) on page 145.
- [Scenario 11: Failover strategy for Business Advocate domains](#) on page 147.

Scenario 11: Deployment overview

Use this deployment in the following circumstances:

- To provide on-site physical redundancy.
- To configure Business Advocate for a contact center that exceeds the capacities of a single instance of Business Advocate.

This scenario does not prevent delivery of contacts to another site. If you want to prevent delivery of contacts to another site, you must create a qualifier to represent each site. For more information about qualifiers, see *IC Business Advocate Configuration and Administration*.

This scenario adds Business Advocate servers to some of the machines that host Avaya IC servers, described in [Scenario 9: Deployment overview](#) on page 130. This scenario also adds two machines at each site to host a Resource Manager server and an ADU server

Avaya IC multi-site deployment scenarios

If you host Avaya IC and Avaya OA databases in DB2 on AIX, this scenario also requires the following:

- A Windows or Solaris machine to host the Business Advocate databases. If desired, you can install SQL Server on a machine that hosts a Resource Manager server.
- An additional Data server on the same machine as a Resource Manager server. This Data server will provide Avaya IC with access to the Business Advocate database and data, such as service classes. Configure this Data server in its own domain, such as RM_Data. Add the RM_Data domain to the failover path for all domains that include Directory servers and Workflow servers that run contact qualification workflows.

Scenario 11: Avaya IC domain overview

This scenario includes two sites: York and Paris. The Business Advocate servers in this scenario are distributed across the following Avaya IC domains including those listed in [Scenario 9: Avaya IC domain overview](#) on page 131.

The following table shows the Avaya IC domains in each site. The highlighted domains were added to support Business Advocate.

Site 1 – York	Site 2 – Paris
<ul style="list-style-type: none">● York_User1● York_User2● York_Voice1● York_Voice2● York_Prompter1● York_Prompter2● York_Core1● York_Core2● York_OA● York_RM1● York_RM2● York_RM_Helper1● York_RM_Helper2	<ul style="list-style-type: none">● Paris_User1● Paris_User2● Paris_Voice1● Paris_Voice2● Paris_Prompter1● Paris_Prompter2● Default● Paris_Core2● Paris_Email● Paris_Email_Helper● Paris_Web● Paris_Web_Helper● Paris_Website● Paris_OA● Paris_RM1● Paris_RM2● Paris_RM_Helper1● Paris_RM_Helper2

Scenario 11: Partitioning of Business Advocate servers

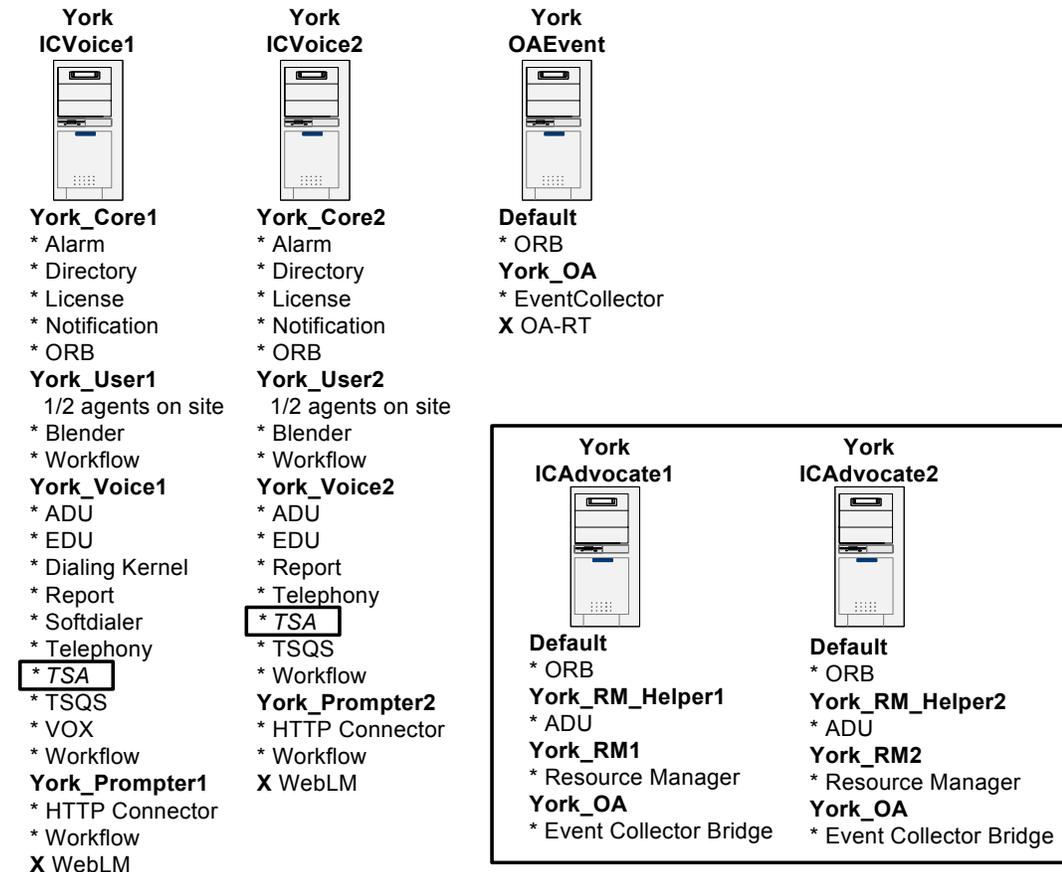
The physical partitioning of the servers reflects the distribution of the Business Advocate components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

This section includes the following topics:

- [Partitioning of Business Advocate servers at York site](#) on page 145.
- [Partitioning of Business Advocate servers at Paris site](#) on page 146

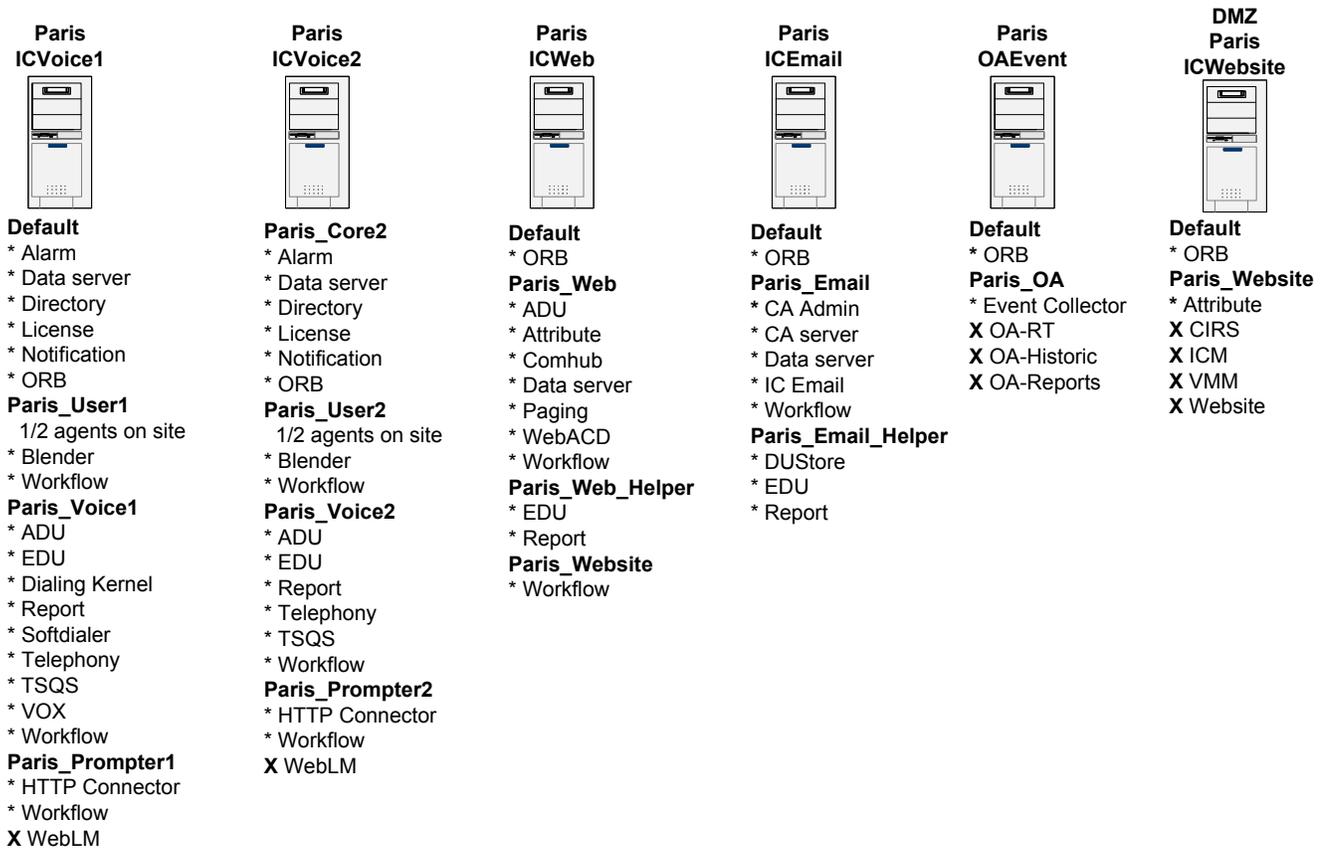
Partitioning of Business Advocate servers at York site

The following figure shows the distribution of Business Advocate servers on the server machines at the York site. The highlighted servers are in addition to those components described in [Scenario 9: Partitioning of servers](#) on page 131.



Partitioning of Business Advocate servers at Paris site

The following figure shows the distribution of Business Advocate servers on the server machines at the York site. The highlighted servers are in addition to those components described in [Scenario 9: Partitioning of servers](#) on page 131.



Scenario 11: Failover strategy for Business Advocate domains

Business Advocate has some unique failover strategies for the Resource Manager and the voice channel. For details about those strategies, see *IC Business Advocate Configuration and Administration*.

This section includes the following topics:

- [Failover strategy at York site](#) on page 147.
- [Failover strategy at Paris site](#) on page 148

Failover strategy at York site

The following table shows the failover strategy for the Business Advocate domains at the York site in this example. The Business Advocate domains do not failover to any of the other Avaya IC domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
York_RM_Helper1	<ol style="list-style-type: none"> 1. York_RM_Helper1 2. York_Core1 3. York_Core2
York_RM_Helper2	<ol style="list-style-type: none"> 1. York_RM_Helper2 2. York_Core2 3. York_Core1
York_RM1	<ol style="list-style-type: none"> 1. York_RM1 2. York_RM_Helper1 3. York_RM_Helper2 4. York_Core1 5. York_Core2
York_RM2	<ol style="list-style-type: none"> 1. York_RM2 2. York_RM_Helper1 3. York_RM_Helper2 4. York_Core2 5. York_Core1
York_OA	<ol style="list-style-type: none"> 1. York_OA 2. York_Voice1 3. York_Voice2 4. York_Core2 5. York_Core1

Failover strategy at Paris site

The following table shows the failover strategy for the Business Advocate domains at the Paris site in this example. The Business Advocate domains do not failover to any of the other Avaya IC domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Paris_RM_Helper1	<ol style="list-style-type: none"> 1. Paris_RM_Helper1 2. Default 3. Paris_Core2
Paris_RM_Helper2	<ol style="list-style-type: none"> 1. Paris_RM_Helper2 2. Default 3. Paris_Core2
Paris_RM1	<ol style="list-style-type: none"> 1. Paris_RM1 2. Paris_RM_Helper1 3. Paris_RM_Helper2 4. Default 5. Paris_Core2
Paris_RM2	<ol style="list-style-type: none"> 1. Paris_RM2 2. Paris_RM_Helper1 3. Paris_RM_Helper2 4. Default 5. Paris_Core2
Paris_OA	<ol style="list-style-type: none"> 1. Paris_OA 2. Paris_Voice1 3. Paris_Voice2 4. Default 5. Paris_Core2

Scenario 12: Two sites, chat and email only

This scenario is the recommended minimum configuration for a basic multi-site deployment in a contact center which includes chat and email channels. If you customize this deployment, you may need to include additional machines and Avaya IC components.

Topics for this scenario include:

- [Scenario 12: Deployment overview](#) on page 149.
- [Scenario 12: Avaya IC domain overview](#) on page 149.

- [Scenario 12: Partitioning of Avaya IC servers](#) on page 150.
- [Scenario 12: Failover strategy](#) on page 151.

Scenario 12: Deployment overview

This scenario shows a potential production system with the following deployment:

- Chat and email media channels
- Two sites (Taos and Tokyo) connected by a WAN
- One machine for the Website and Web-related servers in the network DMZ
- Two machines in Taos and one machine in Tokyo for all other Avaya IC servers
- One machine for Avaya OA Event Collector server and Real-time subsystem
- One machine for IC Manager, Database Designer, and Workflow Designer
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS
- Hardware redundancy
- Server (VESP) failover

Scenario 12: Avaya IC domain overview

This scenario includes two sites: Taos and Tokyo. The following table shows the Avaya IC domains in each site.

Site 1 – Taos	Site 2 – Tokyo
<ul style="list-style-type: none"> ● Default ● Taos_User1 ● Taos_Prompter1 ● Taos_Email ● Taos_Email_Helper ● Taos_Web ● Taos_Web_Helper ● Taos_Website ● Taos_OA 	<ul style="list-style-type: none"> ● Tokyo_User1 ● Tokyo_Prompter1 ● Tokyo_Core1

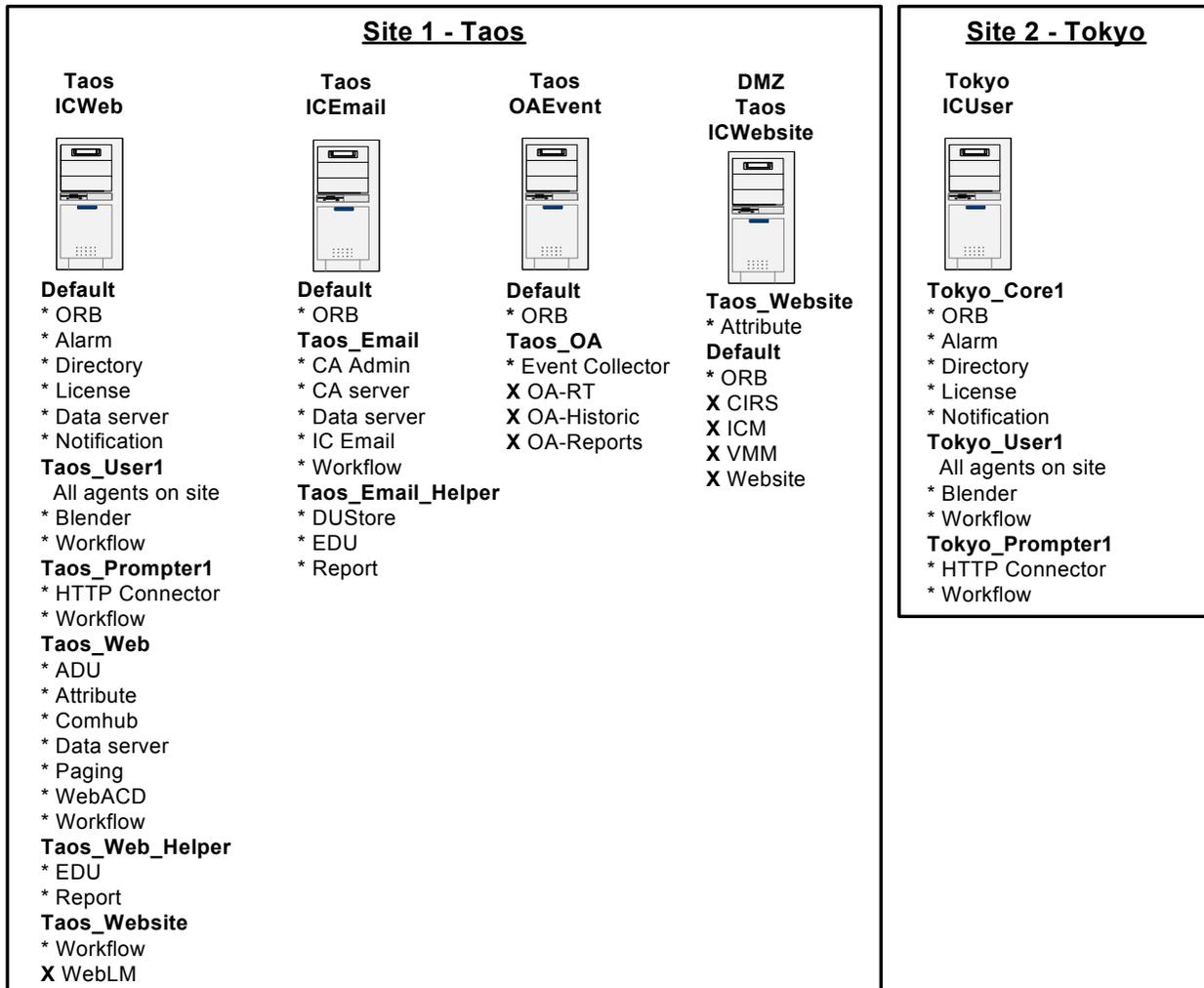
Avaya IC multi-site deployment scenarios

These domains use the following naming convention: *<site>_<service>*. For a single site deployment that will not expand to more sites, you can use a different naming convention for domains, such as *<machine_name>_<service>*.

Scenario 12: Partitioning of Avaya IC servers

The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

The following figure shows the distribution of components on the server machines at both sites. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 12: Failover strategy

The following table shows the failover strategy in this scenario. The components in the Avaya IC domain in the left column failover to the Avaya IC domains in the right column in the order listed.

Domain	Failover domains
Taos_User1	<ol style="list-style-type: none"> 1. Taos_User1 2. Taos_Prompter1 3. Default 4. Taos_Email 5. Taos_Web 6. Taos_Email_Helper 7. Taos_Web_Helper
Taos_Prompter1	<ol style="list-style-type: none"> 1. Taos_Prompter1 2. Default
Default	<ol style="list-style-type: none"> 1. Default 2. Tokyo_Core1
Taos_Email	<ol style="list-style-type: none"> 1. Taos_Email 2. Taos_Email_Helper 3. Taos_Web 4. Default
Taos_Email_Helper	<ol style="list-style-type: none"> 1. Taos_Email_Helper 2. Taos_Email 3. Default
Taos_Web	<ol style="list-style-type: none"> 1. Taos_Web 2. Taos_Web_Helper 3. Default 4. Taos_Email
Taos_Web_Helper	<ol style="list-style-type: none"> 1. Taos_Web_Helper 2. Taos_Web 3. Default
Taos_Website	<ol style="list-style-type: none"> 1. Taos_Website 2. Default
Taos_OA	<ol style="list-style-type: none"> 1. Taos_OA 2. Taos_Web 3. Default

Domain	Failover domains
Tokyo_User1	<ol style="list-style-type: none"> 1. Tokyo_User1 2. Tokyo_Core1 3. Default 4. Tokyo_Prompter1 5. Taos_Email 6. Taos_Web 7. Taos_Email_Helper 8. Taos_Web_Helper
Tokyo_Prompter1	<ol style="list-style-type: none"> 1. Tokyo_Prompter1 2. Tokyo_Core1 3. Default
Tokyo_Core1	<ol style="list-style-type: none"> 1. Tokyo_Core1 2. Default

Scenario 13: Two sites, multi-media, data center

This scenario is a modification of [Scenario 9: Two sites, multi-media](#) on page 129 to include a single data center. Both sites access the data center.

In this scenario, the site with the data center includes the RDBMS, all Data servers, the Event Collector server, Web servers, and Email servers. The data center does not support agents or Voice servers. The second site includes all agents and Voice servers. You can deploy several satellite sites with the same configuration, but different domains, as the second site.

To implement a data center, the WAN connection between the sites must have sufficient bandwidth and must always be available to prevent any disruption to service that a single site dependency can cause.

Topics for this scenario include:

- [Scenario 13: Deployment overview](#) on page 153.
- [Scenario 13: Avaya IC domain overview](#) on page 153.
- [Scenario 13: Partitioning of servers](#) on page 154.
- [Scenario 13: Failover strategy](#) on page 155.

Scenario 13: Deployment overview

This scenario shows a potential production system with the following deployment:

- All media channels
- Two sites connected by a WAN
- Six machines for the data center, Web components, and Email components at the Paris site
- Two machines for agent services and Voice components at the York site
- One machine for the Avaya OA Event Collector server and Real-time subsystem at each site
- One machine for IC Manager, Database Designer, and Workflow Designer
- One machine for the Website and Web-related servers at the Paris site, in the network DMZ
- One or more machines for agent applications, such as Avaya Agent and CallCenterQ
- One machine for SMTP and POP servers
- One machine for your RDBMS at the Paris site
- Hardware redundancy
- Server (VESP) failover

Scenario 13: Avaya IC domain overview

This scenario includes two sites: York and Paris. The following table shows the Avaya IC domains in each site. The Default domain is used in both sites.

Site 1 – Paris	Site 2 – York
<ul style="list-style-type: none"> ● Default ● Paris_Core2 ● Paris_Email ● Paris_Email_Helper ● Paris_Web ● Paris_Web_Helper ● Paris_Website ● Paris_Data1 ● Paris_Data2 ● Paris_OA 	<ul style="list-style-type: none"> ● York_Core1 ● York_Core2 ● York_User1 ● York_User2 ● York_Voice1 ● York_Voice2 ● York_Prompter1 ● York_Prompter2 ● York_OA

Scenario 13: Partitioning of servers

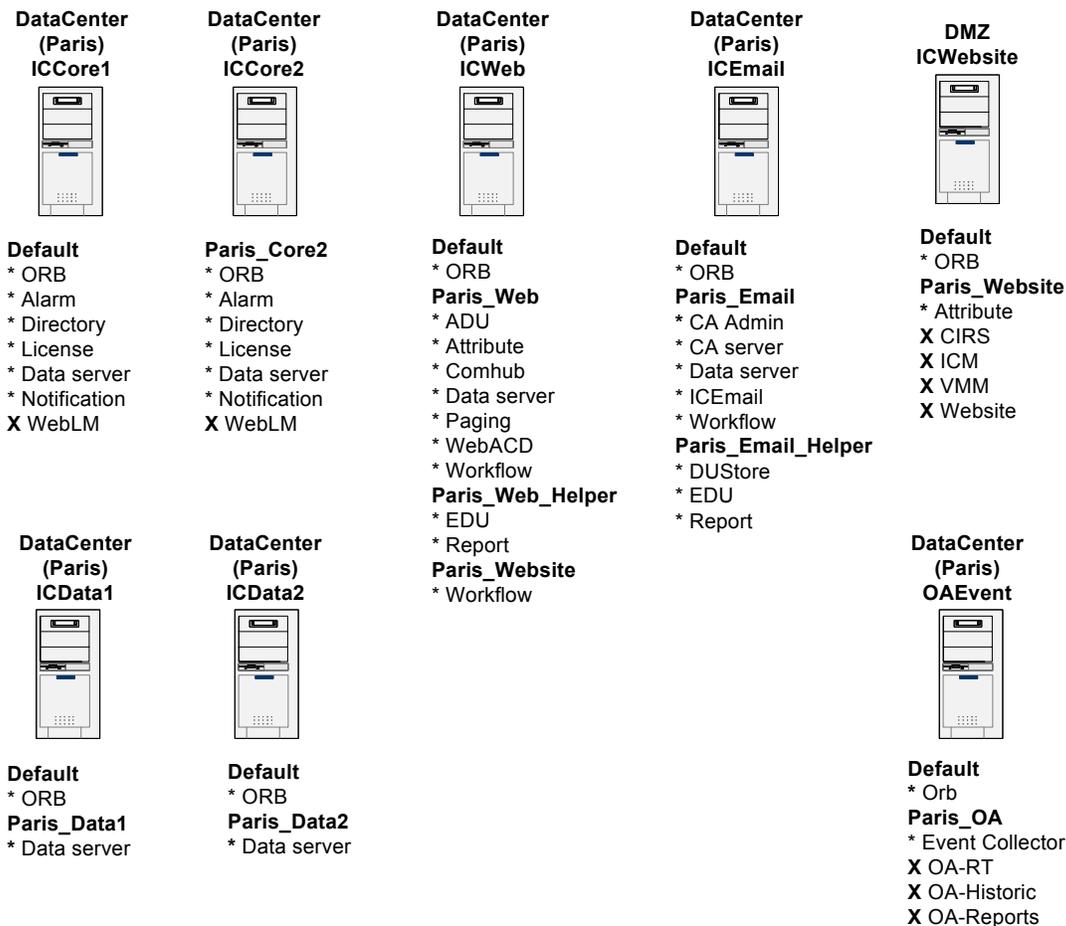
The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

This section includes the following topics:

- [Partitioning at Paris site](#) on page 154.
- [Partitioning at York site](#) on page 155

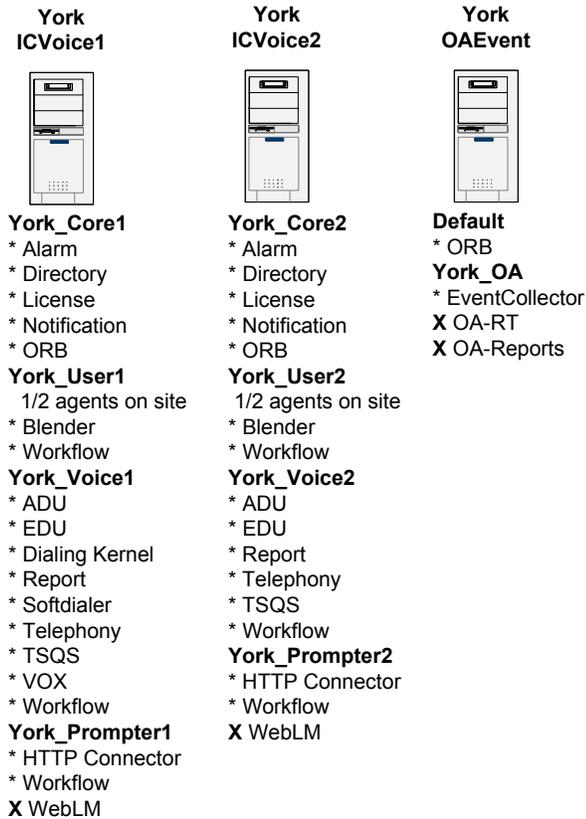
Partitioning at Paris site

The following figure shows the distribution of components on the server machines at the Paris site. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Partitioning at York site

The following figure shows the distribution of components on the server machines at the York site. An **X** before a component indicates that component is installed on the machine, but does not belong to an Avaya IC domain.



Scenario 13: Failover strategy

This section includes the following topics:

- [Failover strategy at York site](#) on page 134.
- [Failover strategy at Paris site](#) on page 136.

Failover strategy at Paris site

The following table shows the failover strategy at the Paris site in this example. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Default	<ol style="list-style-type: none"> 1. Default 2. Paris_Core2
Paris_Core2	<ol style="list-style-type: none"> 1. Paris_Core2 2. Default
Paris_Data1	<ol style="list-style-type: none"> 1. Paris_Data1 2. Default 3. Paris_Core2
Paris_Data2	<ol style="list-style-type: none"> 1. Paris_Data2 2. Paris_Core2 3. Default
Paris_Email	<ol style="list-style-type: none"> 1. Paris_Email 2. Paris_Email_Helper 3. Paris_Web 4. Default 5. Paris_Core2
Paris_Email_Helper	<ol style="list-style-type: none"> 1. Paris_Email_Helper 2. Paris_Email 3. Default 4. Paris_Core2
Paris_Web	<ol style="list-style-type: none"> 1. Paris_Web 2. Paris_Web_Helper 3. Paris_Email 4. Default 5. Paris_Core2 <p>Note: If you do not configure the Event Collector server to monitor the ADU server in this domain, configure the server groups on the Advanced tab as follows: Paris_Web – Priority Value = 1</p>
Paris_Web_Helper	<ol style="list-style-type: none"> 1. Paris_Web_Helper 2. Paris_Web 3. Default 4. Paris_Core2

Domain	Failover domains
Paris_Website	<ol style="list-style-type: none"> 1. Paris_Website 2. Paris_Web 3. York_Voice1 4. Default 5. Paris_Core2
Paris_OA	<ol style="list-style-type: none"> 1. Paris_OA 2. Paris_Web 3. Default 4. Paris_Core2

Failover strategy at York site

The following table shows the failover strategy at the York site in this example. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
York_Core1	<ol style="list-style-type: none"> 1. York_Core1 2. York_Core2 3. Paris_Data1 4. Paris_Data2
York_Core2	<ol style="list-style-type: none"> 1. York_Core2 2. York_Core1 3. Paris_Data2 4. Paris_Data1
York_User1	<ol style="list-style-type: none"> 1. York_User1 2. York_User2 3. York_Prompter1 4. York_Prompter2 5. Paris_Data1 6. Paris_Data2 7. York_Voice1 8. York_Voice2 9. York_Core1 10. York_Core2 11. Paris_Email 12. Paris_Email_Helper 13. Paris_Web 14. Paris_Web_Helper

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Domain	Failover domains
York_User2	<ol style="list-style-type: none"> 1. York_User2 2. York_User1 3. York_Prompter2 4. York_Prompter1 5. Paris_Data2 6. Paris_Data1 7. York_Voice2 8. York_Voice1 9. York_Core2 10. York_Core1 11. Paris_Email 12. Paris_Email_Helper 13. Paris_Web 14. Paris_Web_Helper
York_Voice1	<ol style="list-style-type: none"> 1. York_Voice1 2. York_Voice2 3. York_Core1 4. York_Core2 5. Paris_Data1 6. Paris_Data2
York_Voice2	<ol style="list-style-type: none"> 1. York_Voice2 2. York_Voice1 3. York_Core2 4. York_Core1 5. Paris_Data2 6. Paris_Data1
York_Prompter1	<ol style="list-style-type: none"> 1. York_Prompter1 2. York_Prompter2 3. York_Core1 4. York_Core2 5. Paris_Data1 6. Paris_Data2 7. York_Voice1 8. York_Voice2

Domain	Failover domains
York_Prompter2	<ol style="list-style-type: none"> 1. York_Prompter2 2. York_Prompter1 3. York_Core2 4. York_Core1 5. Paris_Data2 6. Paris_Data1 7. York_Voice2 8. York_Voice1
York_OA	<ol style="list-style-type: none"> 1. York_OA 2. York_Voice1 3. York_Voice2 4. York_Core1 5. York_Core2

Scenario 14: Business Advocate for two sites, multi-media, data center

This scenario is a modification of [Scenario 13: Two sites, multi-media, data center](#) on page 152 to include Business Advocate. Both sites access the data center.

A single instance of Business Advocate indicates that the Avaya IC system includes only one Logical Resource Manager for Business Advocate. This Logical Resource Manager can monitor all agents in the network and select a qualified, available agent for a contact.

Note:

This scenario uses the same Workflow servers as *Scenario 13: Two sites, multi-media, data center*. However, to correctly run with Business Advocate, these Workflow servers must run the Business Advocate workflows to qualify and transfer contacts.

In this scenario, the site with the data center includes the Business Advocate Logical Resource Manager, the RDBMS, all Data servers, the Event Collector server, Web servers, and Email servers. The data center does not support agents or Voice servers. The second site includes all agents and Voice servers. You can deploy several satellite sites with the same configuration, but different domains, as the second site.

To implement a data center, the WAN connection between the sites must have sufficient bandwidth and must always be available to prevent any disruption to service that a single site dependency can cause.

Avaya IC multi-site deployment scenarios

Topics for this scenario include:

- [Scenario 14: Deployment overview](#) on page 160.
- [Scenario 14: Avaya IC domain overview](#) on page 160.
- [Scenario 14: Partitioning of servers](#) on page 161.
- [Scenario 14: Failover strategy](#) on page 163.

Scenario 14: Deployment overview

This scenario adds Business Advocate servers to some of the machines that host Avaya IC servers, described in [Scenario 9: Deployment overview](#) on page 130. This scenario also adds two machines to host the Resource Manager servers and other Avaya IC servers in the Paris domain.

If you host Avaya IC and Avaya OA databases in DB2 on AIX, this scenario requires the following:

- A Windows or Solaris machine to host the Business Advocate databases. If desired, you can install SQL Server on a machine that hosts a Resource Manager server.
- An additional Data server on the same machine as a Resource Manager server. This Data server will provide Avaya IC with access to the Business Advocate database and data, such as service classes. Configure this Data server in its own domain, such as RM_Data. Add the RM_Data domain to the failover path for all domains that include Directory servers and Workflow servers that run contact qualification workflows.

Scenario 14: Avaya IC domain overview

This scenario includes two sites: Paris and York. The Business Advocate servers in this scenario are distributed across the following Avaya IC domains including those listed in [Scenario 13: Two sites, multi-media, data center](#) on page 152.

Scenario 14: Business Advocate for two sites, multi-media, data center

The following table shows the Avaya IC domains in each site. The highlighted domains were added to support Business Advocate. The following table shows the Avaya IC domains in each site. The Default domain is used in both sites.

Site 1 – Paris	Site 2 – York
<ul style="list-style-type: none">● Default● Paris_Core2● Paris_Email● Paris_Email_Helper● Paris_Web● Paris_Web_Helper● Paris_Website● Paris_Data1● Paris_Data2● Paris_OA● Paris_RM1● Paris_RM2● Paris_RM_Helper1● Paris_RM_Helper2	<ul style="list-style-type: none">● York_Core1● York_Core2● York_User1● York_User2● York_Voice1● York_Voice2● York_Prompter1● York_Prompter2● York_OA

Scenario 14: Partitioning of servers

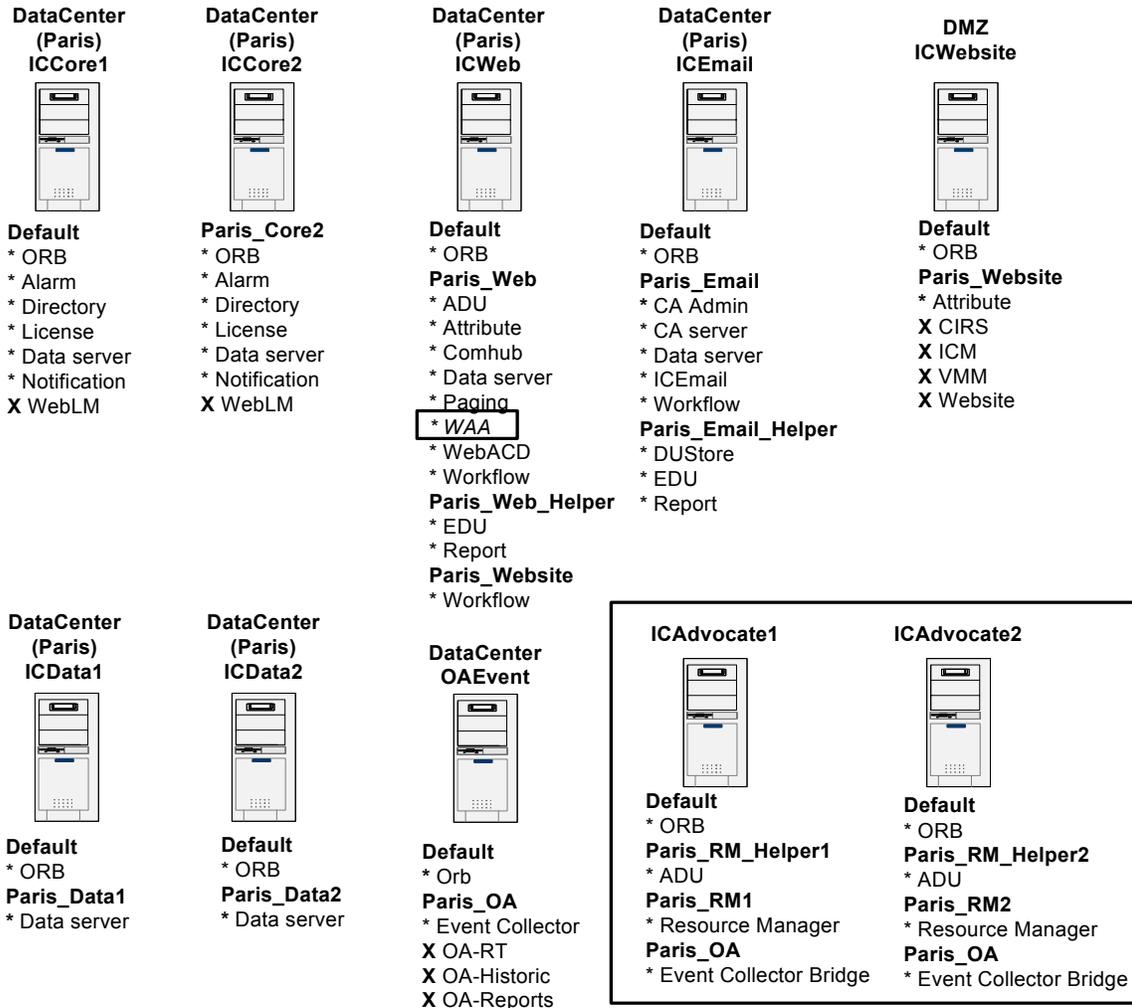
The physical partitioning of the servers reflects the distribution of the Avaya IC and Avaya OA components on the server machines. The logical partitioning reflects the distribution of servers and agents across the Avaya IC domains.

This section includes the following topics:

- [Partitioning at Paris site](#) on page 162.
- [Partitioning at York site](#) on page 163

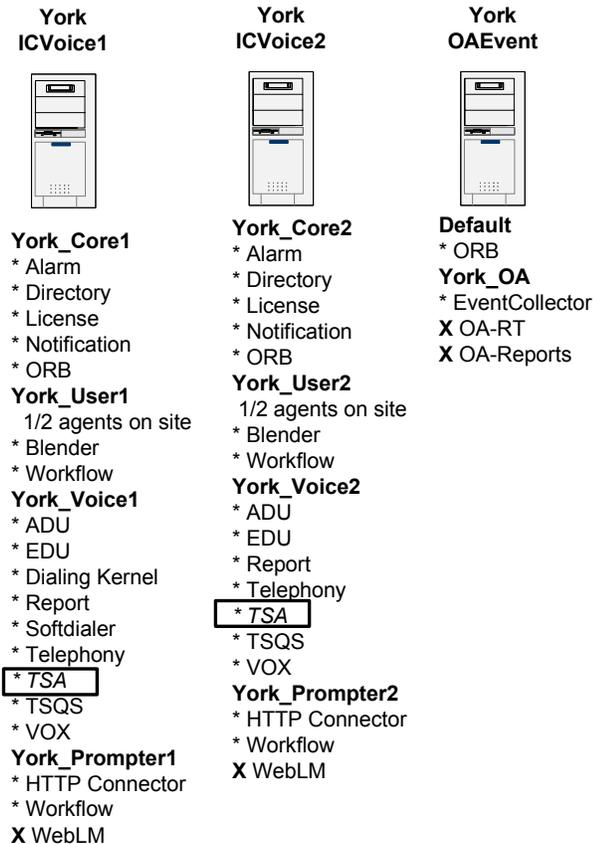
Partitioning at Paris site

The following figure shows the distribution of Business Advocate servers on the server machines at the Paris site. The highlighted servers are in addition to those components described in [Scenario 13: Partitioning of servers](#) on page 154.



Partitioning at York site

The following figure shows the distribution of Business Advocate servers on the server machines at the York site. The highlighted servers are in addition to those components described in [Scenario 13: Partitioning of servers](#) on page 154.



Scenario 14: Failover strategy

Business Advocate has some unique failover strategies for the Resource Manager and the voice channel. For details about those strategies, see *IC Business Advocate Configuration and Administration*.

The failover strategy for the other domains is the same as in [Scenario 9: Two sites, multi-media](#) on page 129.

The following table shows the failover strategy for the Business Advocate domains in this example. The Business Advocate domains do not failover to any of the other Avaya IC

Avaya IC multi-site deployment scenarios

domains. The components in the domain in the left column failover to the domains in the right column in the order listed.

Domain	Failover domains
Paris_RM1	<ol style="list-style-type: none">1. Paris_RM12. Paris_RM23. Paris_RM_Helper14. Default5. Paris_Core2
Paris_RM2	<ol style="list-style-type: none">1. Paris_RM22. Paris_RM13. Paris_RM_Helper24. Default5. Paris_Core2
Paris_RM_Helper1	<ol style="list-style-type: none">1. Paris_RM_Helper12. Default3. Paris_Core2
Paris_RM_Helper2	<ol style="list-style-type: none">1. Paris_RM_Helper22. Default3. Paris_Core2

Chapter 6: Avaya IC hardware requirements

The following hardware requirements are the minimum requirements for an Avaya™ Interaction Center (Avaya IC) installation.

These hardware requirements do not include third party components, such as database management, email, telephony, and web-hosting services. For information about requirements for these components, see the manufacturer's documentation.

This information includes estimated hardware requirements for Avaya OA components that are run on the same machines as Avaya IC components. If you plan to run all Avaya OA components on dedicated machines, you must use the hardware requirements for Avaya OA for those machines. For more information about the hardware requirements for Avaya OA, see *Operational Analyst Installation Planning and Prerequisites*.

Important:

The following hardware requirements are estimates only. Contact your Avaya representative or Avaya Business Partner representative for assistance with sizing your Avaya IC system.

This section includes the following topics:

- [Hardware guidelines for Avaya IC servers](#) on page 165.
- [Hardware requirements for Design & Administration Tools](#) on page 168.
- [Hardware requirements for agent workstations](#) on page 168.

Hardware guidelines for Avaya IC servers

Avaya IC can run on a variety of machines from different hardware vendors. All machines that host Avaya IC servers require fast CPUs and sufficient available memory. To increase the availability of your Avaya IC servers, replicate the servers on independent server machines. For examples of how to replicate your servers to meet the needs of your Avaya IC system, see [Avaya IC multi-site deployment scenarios](#) on page 121.

The performance of your Avaya IC servers is completely dependent on the hardware and networking systems being available and properly configured.

Avaya IC hardware requirements

This section includes the following topics which describe guidelines that typically result in good performance and reliability:

- [Hardware requirements](#) on page 166.
- [Server distribution](#) on page 166.
- [Server failover](#) on page 167.
- [Server machine speed](#) on page 167.
- [Server configuration impact](#) on page 167.
- [Disk space for Avaya IC servers](#) on page 167.
- [Disk space for server log files](#) on page 167.
- [Validation of Avaya IC configuration](#) on page 167.

Hardware requirements

The hardware requirements for servers depend upon the deployment of an Avaya IC system, the volume of contacts in the contact center, and performance requirements.

You can distribute the disk space and CPU requirements across more than one physical hard drive or processor in the same server machine.

Your Avaya representative or Avaya Business Partner representative has documentation and information to estimate hardware sizing for an Avaya IC system. For assistance with sizing an Avaya IC system, contact your Avaya representative or Avaya Business Partner representative.

Server distribution

Distribute application servers across multiple physical machines to meet performance and fault tolerance requirements.

Note:

If you run CPU-intensive third party applications on the same machines as Avaya IC servers, the third party applications will impact the performance of your Avaya IC system.

Server failover

Failure of a single server machine should not impact all agents in the contact center. Partition Avaya IC servers appropriately across physical machines, and configure failover appropriately.

Server machine speed

Install application servers on machines with fast CPUs and adequate memory. These servers primarily require disk space for paging tasks and temporary files.

Server configuration impact

If your configuration includes certain conditions, such as large reporting loads or integration program loads, you may need to re-size the machines that host the servers or configure secondary application servers.

Disk space for Avaya IC servers

Allocate sufficient disk space on each server machine for all Avaya IC servers. Avaya IC copies all server files to a machine, even if that machine will not host all servers.

Disk space for server log files

Allocate 4MB for server log files for each Avaya IC server. Avaya IC installs most servers with a default log size of 2MB. However, when a log file reaches 2MB, Avaya IC automatically creates a backup copy of the log file. You can configure the size of each server's log file in IC Manager.

Validation of Avaya IC configuration

Validate your configuration with hardware, network, security, and database vendors.

Hardware requirements for Design & Administration Tools

The following table lists the minimum hardware requirements for design and administration workstations in a Windows environment.

These hardware requirements do not include third party components, such as database management, email, telephony, and web-hosting services. For information about requirements for these components, see the manufacturer's documentation.



CAUTION:

Do not run IC Manager on a multi-processor machine.

Component	Microsoft Windows
Hardware Architecture	IBM Compatible
CPU	500 MHz Pentium II
RAM	256 MB
Free Disk Space	400 MB
Load Device	N/A
Recommended Monitor Resolution	1280x1024 (256 colors)
Minimum Monitor Resolution	1024x768 (256 colors)

Hardware requirements for agent workstations

The following table lists the minimum hardware requirements for agent workstations in a Windows environment.

These hardware requirements do not include third party components, such as database management, email, telephony, and web-hosting services. For information about requirements for these components, see the manufacturer's documentation.

Hardware requirements for agent workstations

For example, if you plan to run additional components on the agent desktop machine, you must allow a minimum of 256 MB of RAM and 400 MB of free disk space for Avaya IC agent applications.

Hardware component	Microsoft Windows
Hardware Architecture	IBM Compatible
CPU	500 MHz Pentium II
RAM	256 MB
Free Disk Space	400 MB
Load Device	N/A
Recommended Monitor Resolution	1280x1024 (256 colors)
Minimum Monitor Resolution	1024x768 (256 colors)

■ ■ ■ ■ ■ ■ Chapter 7: Avaya IC licensing

You must obtain a license file for your configuration of Avaya™ Interaction Center (Avaya IC) before you complete your installation and configure your Avaya IC system. Avaya IC cannot function without a valid license file for all components included in your Avaya IC system. The steps you must take to obtain a license file begin when you select and purchase your Avaya IC system.

You must obtain a license for Avaya IC systems, including production, development, and test systems. Licenses for production systems include all of the features and capacities that you purchased for your Avaya IC system. Licenses for non-production systems include up to ten concurrent users.

To obtain an Avaya IC license file, consult your Avaya representative or Avaya Partner representative and perform the steps in the following sections:

- [Prerequisites for license files](#) on page 171.
- [Identifying a physical address](#) on page 172.
- [Requesting a license file](#) on page 173.
- [Updating a license file](#) on page 174.
- [Requesting a replacement license file](#) on page 175.
- [Troubleshooting for license files](#) on page 177.

Prerequisites for license files

The contents of your license file reflect your Avaya IC system. Before you apply for and obtain a license file, you must plan the hardware and software configuration of your Avaya IC system. Your Avaya representative or Avaya Partner representative can assist you with this task.

You need to consider all options in your Avaya IC system to determine the hardware and software configuration for your Avaya IC license file, including:

- Platform architecture, such as how many server machines you require and which, if any, telephony equipment you have.
- Reliability objectives.

Avaya IC licensing

- Network topology.
- Avaya IC components required by your system.
- Number and type of media channels.
- Number of Avaya IC sites.
- Number of concurrently logged in agents and supervisors per site.
- Number of concurrently logged in agents and supervisors using each media channel and component.
- Number of Web License Managers and License servers.
- Physical addresses of the computers that will host the License server components for your Avaya IC system. These physical addresses are also known as Host IDs.

Note:

The Dialing Kernel server for Outbound Contact Management has specific requirements for licenses. Each Dialing Kernel server requires one Inbound Agent License and one Total Agent License. Outbound Agent licenses are not affected.

Identifying a physical address

You must provide a physical address for each machine that hosts license components for your Avaya IC system. The physical address is also known as the host ID. If your Avaya IC system includes failover for license components, or multiple sites, you must host the license components on more than one machine, and provide physical addresses for each machine.

The Avaya IC installer automatically identifies the physical address when you install the server files. You do not need to install a license file to install Avaya IC or view the physical address in the Web License Manager (WebLM). To make sure that you identify the physical address for the correct NIC and server, Avaya recommends that you use this method. For more information on how to install Avaya IC and set up the Web License Manager, see *IC Installation and Configuration*.

The WebLM displays the physical address in the Host ID field, as shown in the following figure. For information on how to identify a physical address without the WebLM, see [Troubleshooting for license files](#) on page 177.



Requesting a license file

You must request a separate license file for each Avaya IC system. For example, if you plan to create a development system and a production system, you must have a different license file for each system. You must send a separate request for each license file.

To request an Avaya IC license file:

1. Send an email message to icoakeyrequest@avaya.com with the following information about your Avaya IC system:

Required information	Description
SAP order numbers	Avaya assigns one or more numbers to the customer's order in the SAP system.
Avaya sold-to number	Avaya assigns this number to the customer.
Customer name	Name of the customer that purchased the Avaya IC system.
System purpose	The system purpose must be one of the following: <ul style="list-style-type: none"> ● Production ● Development ● Test If you need license files for two systems, send two separate email requests.

Required information	Description
Return email address	Avaya emails the license file to you. You must provide a secure email address where you want to receive the license file.
Physical addresses	Physical addresses of the computers that will host the Web License Manager (WebLM) and License server components for this particular Avaya IC system. These Physical addresses are also known as Host IDs. For more information, see Identifying a physical address on page 172.

2. You receive an Avaya IC license file from Avaya at the email address designated by your enterprise.
3. Install and activate the license file in your Avaya IC system. For instructions on how to install and activate a license file, see *IC Installation and Configuration*.



Important:

Maintain a copy of your license files in a safe location.

Updating a license file

If your enterprise purchases additional components for your Avaya IC system, or adds more concurrent users, you must update your Avaya IC license file.

Note:

License files for Avaya IC 6.1 releases are valid for all releases of IC 6.1.x. You do not need to update your license files if you upgrade from one Avaya IC 6.1.x release to another unless you purchase new features or capacities.

To update an Avaya IC license file:

1. Send an email message to icoakeyrequest@avaya.com with the following information about your Avaya IC system:

Required information	Description
SAP order numbers	You must provide the original order numbers for your Avaya IC system, and the order numbers for the new components or capacities. Avaya assigns one or more numbers to the customer's order in the SAP system.
Avaya sold-to number	Avaya assigns this number to the customer.

Required information	Description
Customer name	Name of the customer that purchased the Avaya IC system.
System purpose	The system purpose must be one of the following: <ul style="list-style-type: none"> ● Production ● Development ● Test If you need license files for two systems, send two separate email requests.
Return email address	Avaya emails the license file to you. You must provide a secure email address where you want to receive the license file.
Physical addresses	Physical addresses of the computers that will host the Web License Manager (WebLM) and License server components for this particular Avaya IC system. These Physical addresses are also known as Host IDs. For more information, see Identifying a physical address on page 172.

2. You receive an Avaya IC license file from Avaya at the email address designated by your enterprise.
3. Install and activate the license file. For instructions on how to install and activate a license file, see *IC Installation and Configuration*.

Requesting a replacement license file

If you change or upgrade your network, you may need to obtain a replacement license file. Changes that affect the license file include:

- Replacement of the network card on the machine that hosts a Web License Manager
- Transfer of a Web License Manager to a new machine

Avaya IC licensing

To obtain a replacement license file:

1. Send an email message to icoakeyrequest@avaya.com with the following information about your Avaya IC system:

Required information	Description
SAP order numbers	You must provide the original order numbers for your Avaya IC system, and any additional order numbers for new components or capacities. Avaya assigns one or more numbers to the customer's order in the SAP system.
Avaya sold-to number	Avaya assigns this number to the customer.
Customer name	Name of the customer that purchased the Avaya IC system.
System purpose	The system purpose must be one of the following: <ul style="list-style-type: none">● Production● Development● Test If you need license files for two systems, send two separate email requests.
Return email address	Avaya emails the license file to you. You must provide a secure email address where you want to receive the license file.
Physical addresses	Physical addresses of the computers that will host the Web License Manager (WebLM) and License server components for this particular Avaya IC system. These Physical addresses are also known as Host IDs. For more information, see Identifying a physical address on page 172.

2. You receive an Avaya IC license file from Avaya at the email address designated by your enterprise.
3. Install and activate the license file. For instructions on how to install and activate a license file, see *IC Installation and Configuration*.

Troubleshooting for license files

If you cannot use the WebLM to identify the physical address for one or more machines, perform the steps in one of the following sections to identify a physical address:

- [Identifying a physical address in Windows](#) on page 177.
- [Identifying a physical address on Solaris](#) on page 177.
- [Identifying a physical address on AIX](#) on page 177.

Identifying a physical address in Windows

To identify a physical address on a Windows machine:

1. Open a command window.

To open a command window, select **Start** > **Run** and enter `cmd` in the **Open** field.

2. At the prompt, enter: `ipconfig /all`

3. Windows displays the physical address on a separate line, such as:

```
Physical Address. . . . . : 00-53-45-00-00-00
```

Identifying a physical address on Solaris

To identify a physical address on a Solaris machine:

1. Run the following command: `hostid`

2. Solaris displays the physical address as a list of hexadecimal digits on a separate line, such as:

```
831800e9
```

Identifying a physical address on AIX

To identify a physical address on an AIX machine:

1. Run the following command: `uname -m`

2. AIX displays the physical address as a list of hexadecimal digits on a separate line, such as:

```
000C066A4C00
```


Chapter 8: Supported operating systems

You must install and configure your operating system before you install Avaya™ Interaction Center (Avaya IC).

Avaya IC server components support the following operating systems, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Avaya IC component	Supported operating systems
Servers	<ul style="list-style-type: none">● Windows 2000 SP3● Solaris 8● AIX 5.1L ML3 Note: Solaris on Intel is not supported.
Design & Administration Tools	<ul style="list-style-type: none">● Windows 2000 Professional SP3● Windows XP Professional SP1a
Agent desktop applications	<ul style="list-style-type: none">● Windows 2000 Professional SP3● Windows NT 4.0 SP6a● Windows XP Professional SP1a

Note:

The Voice Media Manager (VMM) service required for Voice Chat does not support AIX. You must host the VMM on a Windows or Solaris machine. Voice Chat does not function with the VMM on AIX.

If you need to change the regional system settings for a machine, make sure that you change the settings for all users, including the local system account.

For information about Avaya IC requirements for setting up your selected operating system, see:

- [Microsoft Windows](#) on page 180.
- [Sun Solaris 8](#) on page 186.
- [IBM AIX 5.1](#) on page 189.

Microsoft Windows

To install and configure the following Windows components for Avaya IC, see the documentation provided by Microsoft and the information in the following sections:

- [Setting up Windows 2000](#) on page 180
- [Setting up Windows NT 4.0](#) on page 181
- [Setting up Windows XP Professional](#) on page 182
- [Setting up Microsoft Internet Explorer](#) on page 183
- [Installing Windows 2000 Message Queuing services for Business Advocate](#) on page 184

Note:

Before you install Avaya IC agent applications, configure all agent workstations with restore points. The agent installer replaces some system files. Restore points allow easy rollback after you uninstall Avaya IC if software conflicts arise. Please consult your Windows documentation or third party guides for procedures on how to configure restore points.

Setting up Windows 2000

Avaya IC components support the following versions of Windows 2000, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Avaya IC component	Supported Windows 2000 versions
Servers	<ul style="list-style-type: none">● Windows 2000 Server SP3● Windows 2000 Advanced Server SP3● Windows 2000 Datacenter Server
Design & Administration Tools	<ul style="list-style-type: none">● Windows 2000 Professional SP3
Avaya Agent Desktop	<ul style="list-style-type: none">● Windows 2000 Professional SP3

Installing required service packs for Windows 2000

You must install Windows 2000 Service Pack 3 on all machines that run Windows 2000, except machines that run Windows 2000 Datacenter Server. Avaya IC does not support Service Pack 1 or Service Pack 2 for Windows 2000.

To install the Service Pack:

1. Go to the Microsoft Web site at <http://www.microsoft.com>
2. Navigate to the Downloads section for Windows 2000.
3. Download the following:
 - Windows 2000 Service Pack 3
 - Deployment instructions for Windows 2000 Service Pack 3

Setting up Windows NT 4.0

Desktop applications for Avaya IC support the following Windows NT 4.0 version, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Avaya IC component	Supported operating systems
Avaya Agent Desktop	<ul style="list-style-type: none"> ● Windows NT 4.0 Workstation SP6a

 **Important:**

Avaya IC servers and Design & Administration Tools do not support any version of Windows NT 4.0. For more information, see [Setting up Windows 2000](#) on page 180.

Installing required service packs for Windows NT 4.0

You must install Service Pack 6a on all machines that run Windows NT 4.0. Avaya IC does not support earlier Service Packs for Windows NT.

To install the Service Pack:

1. Go to the Microsoft Web site at <http://www.microsoft.com>
2. Navigate to the Downloads section for Windows NT 4.0.

Supported operating systems

3. Download the following:

- Windows NT Service Pack 6a
- Deployment instructions for Windows NT Service Pack 6a

Setting up Windows XP Professional

The following Avaya IC components support Windows XP Professional, but not its emulations or variants.

- Design & Administration tools
- Client applications

The Shared Browsing and Collaboration features of Web Management require the Microsoft JVM plugin for Internet Explorer. The version of Internet Explorer that is provided with Windows XP Professional does not include the JVM. You need to download and install the JVM on all Avaya IC machines that use Windows XP Professional. For more information, see:

- Microsoft Web site – <http://www.microsoft.com>
- Microsoft Windows Update Web site – <http://windowsupdate.microsoft.com>

Installing required service packs for Windows XP Professional

Avaya certifies support for Windows XP Professional with service pack 1a. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to service pack 1a.

You must install service pack 1a on all machines that run Windows XP Professional.

To install the service pack:

1. Go to the Microsoft Web site at <http://www.microsoft.com>
2. Navigate to the Downloads section for Windows XP Professional.
3. Download the following:
 - Windows XP Service Pack 1a
 - Readme and other deployment instructions

You can select the Express Installation to update one machine, or Network Installation to update multiple machines on your network.

Setting up Microsoft Internet Explorer

You must install Internet Explorer 5.5 SP2 or Internet Explorer 6.0 SP1 on every machine that hosts one or more of the following Avaya IC components:

- Avaya Agent
- Web Management
- Email Management
- Business Applications
- Administration tools

All supported versions of Windows typically include Internet Explorer. However, you may need to upgrade to the current version.

This section includes the following topics:

- [Downloading Internet Explorer](#) on page 183.
- [Configuring the Java plugin for the Microsoft Virtual Machine](#) on page 183.
- [Configuring encoding for localized releases](#) on page 184.

Downloading Internet Explorer

To download Microsoft Internet Explorer 6.0 SP1:

1. Go to the Microsoft Web site at <http://www.microsoft.com>
2. Click the Internet Explorer hyperlink in the left navigation pane.
3. Download and install Microsoft Internet Explorer 6.0 SP1.

Configuring the Java plugin for the Microsoft Virtual Machine

Email Template Administration uses a Java applet which is not compatible with the Sun Java plugin. To view the Email Template Administration pages in Internet Explorer, configure the Java plugin for the Microsoft Virtual Machine, as follows:

1. In Internet Explorer, select **Tools > Internet Options**.
2. Select the **Advanced** tab.
3. Scroll down to the **Java (Sun)** option.
4. Clear the **Use Java 2 v1.3.1_06 for <applet>** box.
5. Scroll down to the **Microsoft VM** option.
6. Check the **JIT Compiler for virtual machine enabled** box.
7. Select the **OK** button.
8. Restart the machine.

Configuring encoding for localized releases

If your Avaya IC system includes Prompter in a supported language other than English, you must configure the encoding in Internet Explorer to match that locale. For example, if an agent will view Prompter scripts in Thai:

- Turn off Auto select
- Configure the encoding for the Thai locale.

To configure encoding, select **View > Encoding** in Internet Explorer.

Installing Windows 2000 Message Queuing services for Business Advocate

If your Avaya IC system includes Business Advocate, you must install Message Queuing service (MSMQ) support on the machine that hosts the Resource Manager server. This machine serves as your MSMQ client for Business Advocate.

You need a Windows 2000 CD-ROM for these steps.

To install the MSMQ service, perform the steps in the following sections:

1. [Setting up the Active Directory domain](#) on page 184.
2. [Installing the MSMQ service](#) on page 185.

Setting up the Active Directory domain

The MSMQ server requires Active Directory services. You must join all machines with Windows 2000 that host Business Advocate servers to an Active Directory domain. If your Avaya IC system includes servers on Solaris or AIX, you need to join all Windows 2000 machines that host Resource Manager servers to an Active Directory domain.

If your network does not include an Active Directory domain, you must create a new Active Directory domain. A machine that hosts one or more Business Advocate servers can serve as the Active Directory domain controller.

You must join all Windows machines that host Business Advocate servers to the same Active Directory domain as the machine that hosts the Resource Manager server.

To create an Active Directory domain:

1. On the machine that will be your Active Directory domain controller, open the Windows Control Panel.
2. Select **Administrative tools > Configure Your Server > Active Directory**.

3. In the right pane, select **Start the Active Directory wizard**.
4. Follow the prompts in the wizard to update your machine to an Active Directory Domain Controller.

Installing the MSMQ service

After you have joined a machine to an Active Directory domain, you must install the MSMQ service.

Important:

If the MSMQ service is already installed and configured before you join a machine to the Active Directory domain, you have to re-install the service on that machine after you join the machine to the domain.

To install the MSMQ service:

1. To confirm whether the MSMQ service is installed, open the Windows Control Panel.
2. Select **Add or Remove Programs > Add/Remove Windows Components**.
3. In the Windows Components Wizard, confirm whether there is a check mark in the box next to **Message Queuing Service**.
4. If there is no check mark:
 - a. Select the box to add a checkmark.
 - b. Select the **Next** button.
5. In the **Message Queuing Type** window:
 - a. Select **Independent client**.
 - b. Select the **Next** button.
6. In the **Message Queuing Server** window:
 - a. Select **Message Queuing service will access a directory service**.
 - b. In the **Domain controller** field, enter the IP address of the Active Directory domain controller.
 - c. Select the **Next** button.

Windows 2000 installs the MSMQ service.

Sun Solaris 8

Avaya IC servers support Solaris 8. Avaya IC Design & Administration Tools and client applications do not support Solaris 8.

Although, Avaya IC does not support an internet browser for Solaris, you will require an internet browser to install your Avaya IC license. If you host your Avaya IC servers on Solaris, you can install your Avaya IC license from the machine that hosts your Design & Administration Tools or from another machine with a supported Windows operating system.



Important:

Avaya IC does not support Solaris 8 on Intel.

Disk space requirements for Solaris

A Solaris machine that hosts Avaya IC servers requires the following disk space:

- A minimum of 1 GB of disk space for the server files
- A minimum of 30 GB disk space to store server log files
- A minimum of 360MB extra temp space in the /var/tmp directory for the Avaya IC installer to perform the Java Virtual Machine

These requirements do not include disk space for required third party applications, such as Solaris, Sun ONE server, or the JDK.

Detailed information about how to partition individual Solaris machines is beyond the scope of this manual. The most efficient method to partition a machine depends on many factors, including which Avaya IC servers you plan to host on the machine, and the volume of customer interactions in your contact center. You must consider all of these factors carefully when you determine how to partition each machine in your Avaya IC system.

Installing required patches for Solaris

To avoid potential problems, you must install the latest Recommended Patch Cluster for Solaris 8 issued by Sun Microsystems. The latest Recommended Patch Cluster may include some of the required patches. Review the list of patches in the cluster before you install any additional patches.

You must install the latest versions of the patches for Solaris 8 shown in the following table.

Patch	Dependencies	Description
109147	None	Linker patch
108528	None	Security patch
108434-10	109147 from above	32-bit runtime patch for C++
108435-10	108434 from above	64-bit runtime patch for C++
111721	None	Math lib patch

To install the patches:

1. Download the patches from following website:
<http://www.sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>
2. Follow the instructions provided by Sun Microsystems in the Readme file for the patch suite.

Configuration requirements for Solaris

The following table describes the configuration settings required on a Solaris machine that hosts Avaya IC servers.

Configuration setting	Notes
Locale	Install the English locale: <ul style="list-style-type: none"> ● English: en_US.UTF-8 You can also install the appropriate locale for the language of your Avaya IC system: <ul style="list-style-type: none"> ● Japanese: ja_JP.UTF-8 ● Korean: ko_KR.UTF-8 ● Simplified Chinese: zh_CN.UTF-8 ● German: de_DE.UTF-8 ● French: fr_FR.UTF-8 ● Italian: it_IT.UTF-8 ● Spanish: es_ES.UTF-8 ● Portuguese: pt_BR.UTF-8 ● Thai: th_TH.UTF-8 Note: This setting is case-sensitive.
Port 9010	Solaris runs the HTTP Input Method Server (htt_server) on port 9010 by default. 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.
Windowing environment	Install a Windowing environment such as X Windows.
DISPLAY	Enable the DISPLAY parameter. The Avaya IC installation and Configuration Tool cannot run if you have not enabled the DISPLAY parameter.
Space requirements	Make sure that the server machine has sufficient space in the /var/tmp directory. For more information, see Disk space requirements for Solaris on page 186.

User accounts for Solaris

Make sure you have access to the following Solaris user accounts:

- Root user – You must use this account when you configure some Avaya IC components, including Telephony, Web Management, Email Management, Web License Manager, and Letter Generator.

 **CAUTION:**

If your Telephony environment includes an Avaya switch with Definity® or Communication Manager™ software, you must use the root account for the installation on all machines that host a Telephony server.

- Installation user – You must use this account for the Avaya IC installation. The home directory for this account must be the directory where you copy the Avaya IC component files. For example, create an account named **avaya**.

IBM AIX 5.1

Avaya IC servers support AIX 5.1L, maintenance level 3. Avaya IC Design & Administration Tools and client applications do not support AIX 5.1.

Although, Avaya IC does not support an internet browser for AIX, you will require an internet browser to install your Avaya IC license. If you host your Avaya IC servers on AIX, you can install your Avaya IC license from the machine that hosts your Design & Administration Tools or from another machine with a supported Windows operating system.

Disk space requirements for AIX

An AIX machine that hosts Avaya IC servers requires the following disk space:

- A minimum of 1 GB of disk space for the server files
- A minimum of 30 GB disk space to store server log files
- A minimum of 360MB extra temp space in the `/tmp` directory for the Avaya IC installer to perform the Java Virtual Machine

These requirements do not include disk space for required third party applications, such as AIX or the JDK.

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Detailed information about how to partition individual AIX machines is beyond the scope of this manual. The most efficient method to partition a machine depends on many factors, including which Avaya IC servers you plan to host on the machine, and the volume of customer interactions in your contact center. Consider all of these factors carefully when you determine how to partition each machine in your Avaya IC system.

Installing required locales

All installations on IBM AIX 5.1 require that you install the following locales:

- EN_US locale
- If the Avaya IC system includes a supported language other than English, one of the following locales, as appropriate:
 - Spanish: ES_CO
 - Portuguese: PT_BR
 - Italian: IT_IT
 - French: FR_FR
 - German: DE_DE
 - Simplified Chinese: ZH_CN
 - Korean: KO_KR
 - Japanese: JA_JP
 - Thai: TH_TH

Installing required components for AIX

All installations on IBM AIX 5.1 require the following additional components:

- Library and tools from the AIX installation CD-ROM

Installing required maintenance level for AIX

To avoid potential problems, install Maintenance level 3 for AIX.

Installing required patches for AIX

Avaya IC requires the following patch in addition to those patches in the required maintenance level 3:

- Patch IY34030

Configuration requirements for AIX

This section includes the following topics which describe the recommended configuration parameters for Avaya IC on IBM AIX 5.1:

- [Characteristics of operating system](#) on page 191.
- [Configuration settings](#) on page 192.

Characteristics of operating system

The following table describes the recommended settings for the characteristics of the operating system for an AIX machine that hosts Avaya IC servers.

To access these characteristics, navigate with smitty to:

System Environments > Change / Show Characteristics of Operating System

Characteristic	Recommended setting
Maximum number of PROCESSES allowed per user	5000
Maximum number of pages in block I/O BUFFER CACHE	64
Maximum Kbytes of real memory allowed for MBUFS	0
Automatically REBOOT system after a crash	false
Continuously maintain DISK I/O history	false
HIGH water mark for pending write I/Os per file	0
LOW water mark for pending write I/Os per file	0
Amount of usable physical memory in Kbytes	4194304
State of system keylock at boot time	normal
Enable full CORE dump	false
Use pre-430 style CORE dump	false

Supported operating systems

Characteristic	Recommended setting
CPU Guard	disable
ARG/ENV list size in 4K byte blocks	6

Configuration settings

The following table describes the configured settings required on an AIX machine that hosts Avaya IC servers.

Configuration setting	Notes
Locale	Install one of the following locales, as appropriate for the language of the Avaya IC system: <ul style="list-style-type: none">● English: EN_US● Spanish: ES_CO● Portuguese: PT_BR● Italian: IT_IT● French: FR_FR● German: DE_DE● Simplified Chinese: ZH_CN● Korean: KO_KR● Japanese: JA_JP● Thai: TH_TH
DISPLAY	Enable the <code>DISPLAY</code> parameter. The Avaya IC installation and Configuration Tool cannot run if you have not enabled the <code>DISPLAY</code> parameter.
Space requirements	Make sure that the server machine has sufficient space in the <code>/tmp</code> directory. For more information, see Disk space requirements for AIX on page 189.
Windowing environment	Install a Windowing environment such as X Windows.



Chapter 9: Network configuration

You need to configure your network for Avaya™ Interaction Center (Avaya IC). To set up your network, perform the steps in the following sections:

- [Enabling TCP/IP networking](#) on page 193.
- [Verifying DNS resolution](#) on page 194.
- [Installing printers](#) on page 197.

For additional network information, see [Network topology and configuration guidelines](#) on page 66.

Enabling TCP/IP networking

All Avaya IC servers and client applications use TCP/IP to communicate. You need to enable TCP/IP networking on each machine in an Avaya IC system.

By default, Windows and UNIX operating systems include TCP/IP networking on all machines with network cards. Typically, Avaya IC uses the default TCP/IP settings applied during installation.

However, if you deploy Avaya IC on an existing Novell NetWare network, you may need to take additional steps to configure the TCP/IP networking protocol. You can obtain information on how to install and configure TCP/IP networking on a NetWare network from your IT professionals.

Verifying DNS resolution

Before you install software for Web Management or Email Management, you must verify the domain name system (DNS) resolution on each machine.

Each Web Management server and Email Management server must have a Fully Qualified Domain Name (FQDN) that:

- Has a minimum of three parts, separated with periods
For example, `bsmith.com` only has two parts and would not qualify.
`bsmith.domain.com` has three parts and would qualify.
- Does not contain special characters, except the dash (-)
- Has forward and reverse DNS mapping in public DNS records

To verify the DNS resolution on machines in your Avaya IC system, perform the steps in one of the following sections:

- [Verifying DNS resolution in Windows](#) on page 194
- [Verifying DNS resolution on Solaris and AIX](#) on page 195

Verifying DNS resolution in Windows

The following procedure verifies that the FQDN is configured properly for Windows. Perform this procedure on every Avaya IC server machine that has a Windows operating system.

To verify DNS resolution in Windows:

1. Open a command prompt window.
2. To find the machine's IP address, type `ipconfig` at the prompt.

The system returns information about the machine's IP configuration, including the IP address (254.24.167.211), as shown in the following example:

```
Windows NT IP Configuration
Ethernet adapter El70x1:
IP Address. . . . . : 254.24.167.211
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 254.24.167.1
```

3. To verify the “forward” DNS mapping, type the following command with the machine’s FQDN at the prompt:

```
nslookup <machine_name>.<domain_name>
```

The system returns information about the machine’s forward DNS mapping, including the machine’s IP address and FQDN. The following example of forward DNS mapping indicates that the FQDN `bsmith.domain.com` is assigned to the IP address `254.24.167.211` in public DNS records.

```
Server: ns3.domain.com
Address: 254.24.167.23

Name: bsmith.domain.com
Address: 254.24.167.211
```

4. To verify the “reverse” DNS mapping, type the following command with the machine’s IP address at the prompt:

```
nslookup <IP_address>
```

The system returns information about the machine’s reverse DNS mapping, as shown in the following example:

```
Server: ns3.domain.com
Address: 254.24.167.23

Name: bsmith.domain.com
Address: 254.24.167.211
```

Verifying DNS resolution on Solaris and AIX

The following procedure verifies that the FQDN is configured properly for Solaris and AIX. Perform this procedure on every Avaya IC server machine with a UNIX operating system.

To verify DNS resolution on Solaris and AIX:

1. Open the `hosts` file and locate the information about the machine’s IP configuration, including the IP address (`254.24.167.211`).
2. To verify the “forward” DNS mapping, type the following command with the machine’s FQDN at the prompt:

```
nslookup <machine_name>.<domain_name>
```

The system returns information about the machine’s forward DNS mapping, including the machine’s IP address and FQDN. The following example of forward DNS mapping

Network configuration

indicates that the FQDN `bsmith.domain.com` is assigned to the IP address `254.24.167.211` in public DNS records.

```
Server: ns3.domain.com
Address: 254.24.167.23
```

```
Name: bsmith.domain.com
Address: 254.24.167.211
```

3. To verify the “reverse” DNS mapping, type the following command with the machine’s IP address at the prompt:

```
nslookup <IP_address>
```

The system returns information about the machine’s reverse DNS mapping, as shown in the following example:

```
Server: ns3.domain.com
Address: 254.24.167.23
```

```
Name: bsmith.domain.com
Address: 254.24.167.211
```

Troubleshooting an unresolved DNS entry

If a DNS entry is not set up for a Web Management or Email Management machine, you can temporarily use local host entries.

Note:

This workaround is only temporary. You must establish true DNS resolution as quickly as possible for an easier implementation.

To add local host entries for Avaya IC servers:

1. Open the `hosts` file in a text editor.
 - Windows default location: `\WinNT\System32\Drivers\etc`
 - Solaris default location: `/etc`
 - AIX default location: `/etc`
2. In the `hosts` file, locate the IP entry and name for `localhost`.
For example, the `localhost` line in the file might read:
`127.0.0.1localhost`
3. Add an entry for each Web Management or Email Management machine:
 - a. At the end of the `localhost` line, press **Enter** to get a new line.
 - b. Type the machine’s IP address.
 - c. Press **Tab** or type a few spaces, and type the machine’s FQDN.

- d. Press **Tab** or type a few more spaces, and type the machine name.

The machine name and the FQDN resolve to the specified address, as shown in the following example:

```
192.168.0.1testbox.xyzcorp.comcomhub
```

```
192.168.0.2testbox.xyzcorp.comsql
```

4. Save the file under its original name (hosts).

Note:

If the IP address changes, you must update the `hosts` file to reflect this change.

Installing printers

Letter Generator requires a postscript-compatible printer. Most high end laser printers are postscript-compatible. Most low end inkjet printers are not postscript-compatible.

Printers must be in the same Windows domain as the Workflow server.

Letter Generator uses GhostScript to generate postscript output for the printer. For more information, see [GhostScript](#) on page 248.

Network configuration

Chapter 10: Supported database management systems

The Relational Database Management System (RDBMS) is a core component of Avaya™ Interaction Center (Avaya IC). Avaya IC servers and client applications access databases to:

- Store employee, contact, and configuration information
- Deliver statistical information to managers
- Deliver customer contact information to agents

Avaya OA reports on information that Avaya IC stores in the IC Repository database. Before you install Avaya IC, make sure that you perform all prerequisite steps for Avaya OA. For more information and some guidelines for installing and configuring your database software, see *Operational Analyst Installation Planning and Prerequisites*.

CAUTION:

Avaya IC does not work on a case-sensitive database. Do not configure your database to be case-sensitive.

This section describes the required databases and optional databases for Avaya IC and Avaya OA, and provides information that you need to configure a relational database management system for Avaya IC. This section includes the following topics:

- [Avaya databases for Avaya IC](#) on page 200.
- [Supported database management systems](#) on page 201,
- [Requirements for database login](#) on page 201.
- [Installing database servers](#) on page 202.
- [Installing database client software](#) on page 202.
- [Configuring binary sort order for Web Management](#) on page 203.
- [Adding hard drives to database machines](#) on page 204.
- [SQL Server](#) on page 204.
- [Oracle](#) on page 208.
- [IBM DB2](#) on page 218.

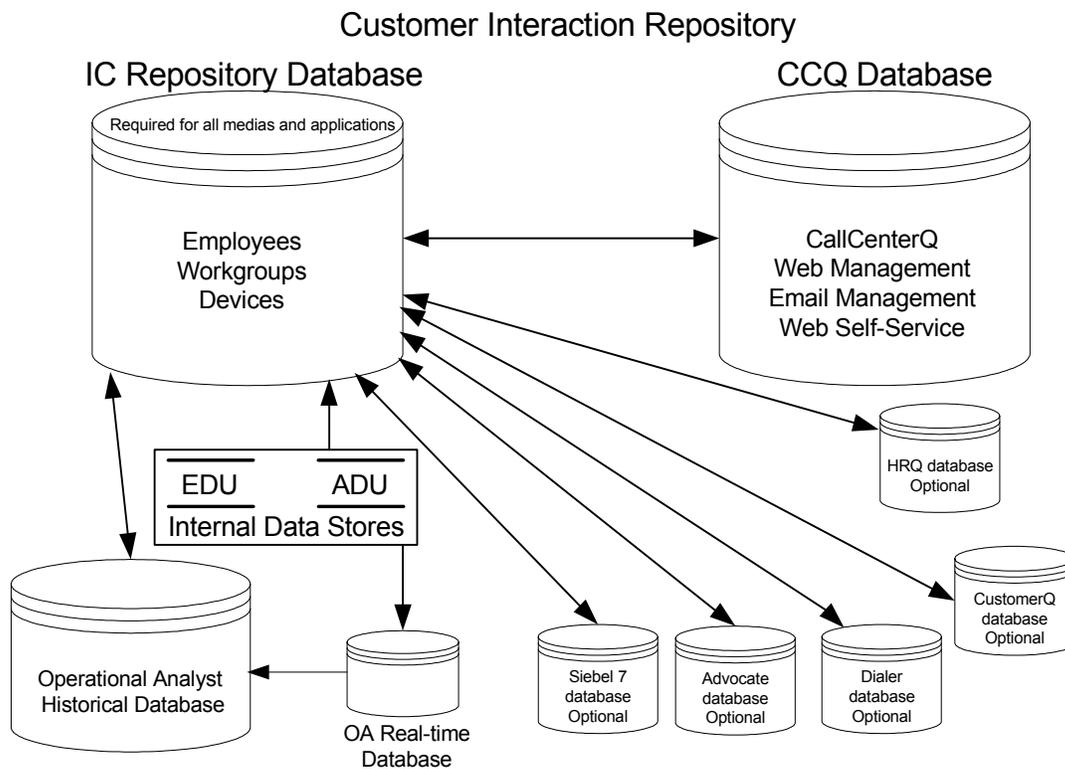
Avaya databases for Avaya IC

Your Avaya IC databases interact with:

- Other Avaya IC databases
- Avaya IC data store units
- Avaya OA databases

At a minimum, your Avaya IC system must include the IC Repository database and the CCQ database. Some Avaya IC applications, such as Outbound Contact, Business Advocate, and the Business Applications, also require a separate, dedicated database. Depending on the components in your implementation, your Avaya IC system may also require one or more of these optional Avaya IC databases.

The Avaya Customer Interaction Repository includes the Avaya IC and Avaya OA database and storage components used by an Avaya IC system. The following figure shows these components and how they interact.



Supported database management systems

Avaya IC servers support the following databases, according to the operating system on the server machine, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Operating system	SQL Server 2000 SP3	Oracle 8.1.7, patch set 4.0 (with UTF8 Character Set)	DB2 UDB 7.2 Fix Pack 9 (with UTF8 Character Set)
Windows 2000 Server SP3	✓	✓	
Solaris 8		✓	
AIX 5.1			✓



Important:

Business Advocate does not support databases on AIX and DB2. If you host your Avaya IC and Avaya IC databases on AIX and DB2, you must configure a Windows or Solaris machine with a supported SQL Server or Oracle database to host the Business Advocate databases. You must also configure a Data server on a machine that hosts a Resource Manager server to connect to the Business Advocate database.

Requirements for database login

The Avaya IC Data server requires an administrative login with DBA privileges for your database. The administrative login must be a DBA login ID for the database server. Do not use the DBA login for a database client.

Avaya IC and Avaya OA must use the same administrative login. The following table shows typical values for this administrative login.

Property	SQL Server	Oracle	DB2
Database Administration Login	sa	sys	db2inst1
Database Administration Password	sa password	sys password	db2inst1 password

Installing database servers

Database servers act as a central repository for all the information that Avaya IC stores and retrieves.

You can install and configure database servers in a number of ways to provide scalability, fault tolerance, and security to meet the specific requirements of your organization.

Database server installation and configuration are beyond the scope of this manual. If you have not yet deployed your chosen database platform, consult a qualified Database Administrator (DBA).

Note:

Install the database vendor libraries on every machine that hosts an Avaya IC Data server.

Installing database client software

Avaya IC servers communicate with the RDBMS through a database client. You need to install the appropriate database client for the RDBMS. Avaya IC supports the following database clients, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Database	Database client
Oracle 8.1.7	Oracle 8.1.7 client
SQL Server 2000 SP3	SQL Server 2000 Client
IBM DB2 FP9	IBM DB2 Administration Client.

This section includes the following topics:

- [Location for database clients](#) on page 203.
- [Requirements for database clients](#) on page 203.

Location for database clients

You must install the database client on:

- All machines that host Avaya IC servers
- All machines that host QKnowledge and IndexQ, if the Avaya IC system includes QKnowledge

The database administrator (DBA) should ensure that the database client can connect to the database server.

Note:

Detailed information about database client installation is beyond the scope of this manual. See the documentation provided by your RDBMS vendor.

Requirements for database clients

Database clients require the following:

Dedicated RAM - Reserve a dedicated amount of RAM to run the database. For more information, see the documentation for your database client.

Connection pool - Ensure there is a connection pool to the Data server. For example, if your Avaya IC includes an Oracle database, calculate the amount of memory required (in megabytes) by multiplying the connection pool size by 3.

Swap space - Reserve two to three times the amount of main memory as swap space, preferably on a raw disk.

Configuring binary sort order for Web Management

Web Management:

- Does not support binary sort order on any database platform
- Cannot differentiate between employee accounts based on case
- Can cause authentication problems in cases where, for example, **Agent1** is not the same user as **agent1**

Binary sort order compares bit by bit and is case sensitive. For example, in Web Management, the SQL command `select * from topic` would not return results from a

Supported database management systems

table named `Topic` if binary sort order is turned on, because `Topic` does not match `topic`.

Note:

DB2 databases do not use binary by default. The sort order for DB2 is set in the configuration of the AIX operating system.

Adding hard drives to database machines

If you add hard drives to your database configuration (preferably a RAID environment), Avaya recommends that you dedicate the additional hard drives as described in the following table.

Hard drive	Database	Files or tables
First extra hard drive	SQL Server	after image file
	Oracle	redo log
	DB2	transaction logs
Second extra hard drive	SQL Server	before image file
	Oracle	rollback file
	DB2	transaction logs
Third extra hard drive	All databases	<ul style="list-style-type: none">● contact table● request table
	Oracle only	qw_text table

SQL Server

All Avaya IC servers and client components support the following SQL Server 2000 databases:

- Microsoft SQL Server 2000 Standard Edition SP3
- Microsoft SQL Server 2000 Enterprise Edition SP3

Avaya certifies support for these versions. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

This section includes the following topics:

- [Installing SQL Server](#) on page 205.
- [Installing required service packs for SQL Server](#) on page 205.
- [Installing the SQL Server 2000 client](#) on page 206.
- [Configuring SQL Server for Business Advocate](#) on page 206.

Installing SQL Server

You must install and configure SQL Server 2000 SP3 on all machines that host your Avaya IC databases.

Detailed instructions on the installation and configuration of SQL Server 2000 SP3 are beyond the scope of this manual. If you plan to use SQL Server 2000 SP3 with Avaya IC but have not yet installed SQL Server, consult a qualified SQL Server DBA (Database Administrator) for assistance.

Installing required service packs for SQL Server

Install the SQL Server Service Pack 3 on all machines that host your Avaya IC databases.

To install the SQL Server 2000 Service Pack 3:

- Download and run Service Pack 3 from

<http://www.microsoft.com/sql/downloads/2000/sp3.asp>

For specific information on how to deploy the SQL Server 2000 Service Pack 3, particularly if you need to install the Service Pack on multiple machines, see the Microsoft document from the following Web sites:

<http://support.microsoft.com/support/servicepacks/SQL/2000/SP3ReadMe.asp>

Installing the SQL Server 2000 client

The SQL Server 2000 client is also known as the Microsoft Data Access Component. You must install the SQL Server 2000 client on every machine that hosts an Avaya IC server.

Detailed instructions on the installation and configuration of SQL Server 2000 client are beyond the scope of this manual. If you plan to install SQL Server 2000 client with Avaya IC, consult a qualified SQL Server DBA for assistance.

Configuring SQL Server for Business Advocate

Business Advocate does not use Database Designer to create and configure the advocate database. You must create and configure the advocate database before you install the Business Advocate components.

To configure SQL Server for Business Advocate, perform the steps in the following sections:

1. [Creating a database for Business Advocate](#) on page 206.
2. [Creating the Nethome directory](#) on page 207.
3. [Configuring the SQL Server client](#) on page 207.
4. [Configuring a user to run Business Advocate services](#) on page 208.

Creating a database for Business Advocate

With SQL Server Enterprise Manager, create a database with the properties in the following table.

Property	Value
Database name	advocate Note: You can use a different name if desired. However, Avaya recommends that you name this database "advocate" for easy identification.
Main schema size	10 MB or more
Log size	20 MB or more

Creating the Nethome directory

On the machine that will host the first Logical Resource Manager for Business Advocate, do the following:

1. Create a directory called "Nethome".
2. Share the Nethome directory as `Nethome`.

Configuring the SQL Server client

On every machine that hosts one or more Business Advocate servers, do the following:

1. Install the SQL Server Client, Microsoft Data Access Component.
2. Upgrade each machine to the Microsoft Data Access Component 2.7.
3. Configure the Client to access the machine that hosts your advocate databases with TCP/IP protocol, using the correct server port, as follows:
 - a. Run the SQL Server Client Network Utility.

If you installed the SQL Server Client in the default location, you can find the Client Network Utility in the following folder: `C:\WINNT\System32\cliconfg.exe`

- b. On the **Alias**, add an alias with the properties in the following table.

Property	Value
Server alias	Name of the machine that hosts SQL Server. Note: You can use a different name if desired. However, Avaya recommends that you use this naming convention for easy identification.
Network libraries	TCP/IP.
Server name	Name of the machine that hosts your advocate database.
Dynamically determine port	Do not check this box.
Port number	Enter the port number that the client uses to communicate with the advocate database.

Configuring a user to run Business Advocate services

Create and configure a user to run Business Advocate services:

1. In Active Directory, create a user for Business Advocate
2. Configure the Business Advocate user account with the following rights and permissions:
 - Read, write, and execute permissions to the Nethome network share.
 - Create, delete, and access permissions for MSMQ queues.
 - Send and receive rights for MSMQ events.
 - Logon as a service permissions on every machine that hosts Business Advocate servers.
 - Local administrative rights on every machine that hosts Business Advocate servers.

For information about how to assign these rights and permissions to the user account, see the documentation provided by Microsoft.

Oracle

All Avaya IC servers and client components support the Oracle 8.1.7 database. Avaya certifies support for this version. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed version.

You must consider the needs of your contact center, the operating system of the machine that hosts your database, and the configuration of your Avaya IC system to determine whether you require the Enterprise Edition or Standard Edition of Oracle 8.1.7.

This section includes the following topics:

- [Required patches for an Oracle database](#) on page 208.
- [Installing Oracle Server](#) on page 209.
- [Installing Oracle Client](#) on page 210.
- [Configuring Oracle for Business Advocate](#) on page 210.

Required patches for an Oracle database

Avaya IC requires Oracle 8.1.7 with patch set 4.0.

Installing Oracle Server

You must install and configure the Oracle Server on all machines that host your Avaya IC databases. When you create the database instance for Avaya IC, you must include the following configurations.

Note:

You cannot change the character set or `db_block_size` after you create the database instance. If the `db_block_size` of the Avaya IC database instance is less than 8192, your database will not be able to create some of the large indexes required by Avaya IC.

Configuration	Required settings
Character set	UTF8
<code>db_block_size</code>	8192 or higher
Locale	Install the English locale: <ul style="list-style-type: none"> ● English: <code>en_US.UTF-8</code> You can also install the appropriate locale for the language of your Avaya IC system: <ul style="list-style-type: none"> ● Japanese: <code>ja_JP.UTF-8</code> ● Korean: <code>ko_KR.UTF-8</code> ● Chinese: <code>zh_CN.UTF-8</code> ● German: <code>de_DE.UTF-8</code> ● French: <code>fr_FR.UTF-8</code> ● Italian: <code>it_IT.UTF-8</code> ● Spanish: <code>es_ES.UTF-8</code> ● Portuguese: <code>pt_BR.UTF-8</code> ● Thai: <code>th_TH.UTF-8</code> Note: This setting is case-sensitive.
Tablespaces	Two tablespaces for each Avaya IC database: one for standard database tables, one for temporary tables. For example, IC Repository and CallCenterQ databases require the following tablespaces: <ul style="list-style-type: none"> ● IC Repository tables – <code>T_CI</code> ● IC Repository temporary tables – <code>T_CI_TEMP</code> ● CallCenterQ tables – <code>T_CCQ</code> ● CallCenterQ temporary tables – <code>T_CCQ_TEMP</code>

Tip:

Depending upon the deployment of the Avaya IC system, you may need to increase the value for the Oracle shared pool size configuration parameter.

Supported database management systems

For Avaya OA configuration requirements, see *Operational Analyst Installation Planning and Prerequisites*.

Detailed instructions on installation and configuration of an Oracle Server are beyond the scope of this manual. If you plan to use Oracle Server with Avaya IC but have not yet installed the Oracle Server, consult a qualified Oracle DBA for assistance.

Installing Oracle Client

You must install the Oracle client on every machine that hosts an Avaya IC server. You can view complete installation instructions for the Oracle client from the Oracle Technology Network Web site at <http://otn.oracle.com>

These links require a UserID and password for the Oracle Technology Network. If you do not currently have an Oracle Technology Network UserID and password, you can register for free.

Configuring Oracle for Business Advocate

Business Advocate only supports Oracle 8.1.7 on Windows and Solaris.

If your Avaya IC system includes Business Advocate and an Oracle database, do the following steps:

1. [Installing Oracle components for Business Advocate](#) on page 211.
2. [Creating the tablespace for the Business Advocate database](#) on page 211.
3. [Creating a user for the Business Advocate database](#) on page 212.
4. [Disabling NTS authentication](#) on page 213.
5. [Installing the Oracle Client](#) on page 213.
6. [Installing the Oracle Client with the Oracle Service for Microsoft Transaction Server](#) on page 213.
7. [Completing the Net8 configuration](#) on page 214.
8. [Configuring the Oracle Service for Microsoft Transaction Server for Business Advocate](#) on page 215.
9. [Creating Oracle Service for MTS in MMC](#) on page 216.
10. [Validating Oracle Service for MTS Configuration](#) on page 217.

Installing Oracle components for Business Advocate

The following table shows which Oracle components you need to install for Business Advocate.

Machine	Required Oracle components
Machine that hosts your Business Advocate database	Install the following components: <ul style="list-style-type: none"> ● Windows 2000 with recent updates and MDAC 2.6 ● Oracle Enterprise Server 8.1.7 ● Oracle Services for Microsoft Transaction Server (MTS) 8.1.7, available on the Oracle installation CD-ROM ● Patchset 4.0
On one machine that hosts Business Advocate servers	Install the following: <ul style="list-style-type: none"> ● Oracle Client 8.1.7 ● Oracle Service for Microsoft Transaction Server (MTS) with Oracle Client and Oracle Services for MTS ● Patchset 4.0 Important: Do not install MTS on more than one Business Advocate machine.
On all other machines that host Business Advocate servers	Install the following: <ul style="list-style-type: none"> ● Oracle Client 8.1.7 ● Patchset 4.0

For more information, see the documentation provided with your Oracle database software.

Creating the tablespace for the Business Advocate database

You must create the tablespace on the machine that hosts your Business Advocate database.

To create the tablespace:

1. Open the Oracle DBA Studio standalone.
2. Create a tablespace with the properties described in the following table.

Window	Property	Recommended value
Database Connection Information	Username	internal
	Password	oracle
	Connect as	SYSOPER

Supported database management systems

Window	Property	Recommended value
General tab of Create Tablespace	Name	Enter a name for the tablespace. For example, enter ADVOCATETBS.
	Drive used for directory	E If possible, use drive E for the Business Advocate tablespace, and use drive D for the system tablespace. This configuration reduces the I/O burden on the drive for the system tablespace.
	Size	Enter an appropriate size. For example, enter 10240.

Creating a user for the Business Advocate database

You must create a user for the Business Advocate database on the machine that hosts the database.

To create a user:

1. Open the Oracle DBA Studio standalone.
2. Create a user with the properties described in the following table.

Window	Property	Recommended value
General tab of Create User	Name	Enter a name for the user. For example, enter advocateuser.
	Password	Enter a password for the user. For example, enter advocatepw.
	Confirm	Re-enter the password.
	Tablespaces Default	Enter the name of the Business Advocate database. For example, enterADVOCATEDB.
Role tab of Create User	Available roles	Select all of the available roles and move to the Granted column.
System Privileges tab of Create User	Available system privileges	Select all of the available roles and move to the Granted column.

Disabling NTS authentication

CAUTION:

You must disable NTS authentication on all machines that host the Business Advocate servers and the Business Advocate database.

To disable NTS authentication:

1. Open the sqlnet.ora file.

If you installed Oracle in the default directory, you can find this file in the following location: `.. \oracle\ora81\network\admin\sqlnet.ora`

2. Confirm that the file includes the following setting, which disables NTS authentication:

```
SQLNET.AUTHENTICATION_SERVICES = (NONE)
```

Add this setting to the file, if it does not already exist.

Installing the Oracle Client

When you install the Oracle Client, install the following options:

- Oracle Service for Microsoft Transaction Server (MTS) on one of the Business Advocate machines that hosts the Oracle database client. For more information, see [Installing the Oracle Client with the Oracle Service for Microsoft Transaction Server](#) on page 213.
- Oracle ODBC connector on the machine that hosts your Oracle database server

Important:

Do not install the Microsoft Oracle ODBC connector.

Installing the Oracle Client with the Oracle Service for Microsoft Transaction Server

You must install and configure the Oracle Client with the Oracle Service for Microsoft Transaction Server (MTS) on one Business Advocate machine that hosts the Oracle Client.

Important:

Do not install MTS on more than one Business Advocate machine that hosts the Oracle client.

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To install MTS for Business Advocate:

1. Run the Oracle Client Setup from the Oracle CD-ROM.
2. Complete the installation in the Oracle Universal Installer with the properties described in the following table.

Window and property	Recommended value
File Locations	Select a different drive from the one where you install the Business Advocate files. The Oracle Universal Installer automatically selects the drive with maximum free space. Your database administrator should determine the appropriate drive to optimize performance and reduce I/O contention.
Install Types	Select Custom .
Available Product Components	Accept the default choices. Select Oracle Services for Microsoft Transaction Server 8.1.7.0.0 .
Oracle Protocol Support	Select the following: <ul style="list-style-type: none">● Named Pipes● TCP

3. Accept the defaults on all other windows in the Oracle Universal Installer.

Completing the Net8 configuration

After you install the Oracle Client, the Oracle Universal Installer automatically runs the Net8 Configuration Assistant.

To complete the Net8 configuration:

1. Complete the windows in the Net8 Configuration Assistant with the properties described in the following table.

Window and property	Recommended value
Welcome	Confirm that Perform typical configuration is not selected.
Directory Service Access	Select No, I want to defer directory service access configuration to another time .
Naming Methods Configuration, Select Naming Methods	Verify that Local is the only selected naming method.

Window and property	Recommended value
Net Service Name Configuration, Database Version	Select Oracle8I database or service .
Net Service Name Configuration, Service Name	For Service Name , type the Oracle SID value.
Net Service Name Configuration, Select Protocol	Verify that TCP is the only selected network protocol.
Net Service Name Configuration, TCP/IP Protocol	Do the following: <ul style="list-style-type: none"> ● For Host Name, type the host name of the machine that hosts the Oracle Enterprise Server. ● Verify that the standard port number of 1521 is selected.
Net Service Name Configuration, Net Service Name	For Net Service Name , type the Oracle SID value.

2. After you complete the Net8 Configuration Assistant, exit the Oracle Universal Installer.

Configuring the Oracle Service for Microsoft Transaction Server for Business Advocate

Perform this step on the Business Advocate machine that hosts MTS.

To configure MTS for Business Advocate:

1. Start SQL Plus.
2. Log in as *advocateuser/advocatepw@ADVOCATEDB_machine*.

This is the Business Advocate user that you created in [Creating a user for the Business Advocate database](#) on page 212.

3. Execute the following command:

```
DROP TABLE MTS_PROXY_INFO;
```

If the table did not exist previously, SQL Plus will display an error. Ignore the error.

Supported database management systems

4. Execute the following commands:

```
CREATE TABLE MTS_PROXY_INFO (  
  WBBUF RAW(1024),  
  WBSIZ NUMBER(8),  
  HOSTNAME VARCHAR2(255),  
  PIPENAME VARCHAR2(255),  
  INCNO NUMBER(8),  
  RMGUID RAW(16)  
);  
GRANT SELECT ON MTS_PROXY_INFO TO PUBLIC;  
DROP PUBLIC SYNONYM MTS_PROXY_INFO;
```

If the synonym did not exist previously, SQL Plus will display an error. Ignore the error.

5. Execute the following commands:

```
CREATE PUBLIC SYNONYM MTS_PROXY_INFO FOR MTS_PROXY_INFO;  
GRANT ALL ON MTS_PROXY_INFO TO PUBLIC;
```

6. Exit SQL Plus.

Creating Oracle Service for MTS in MMC

Perform this step on the Business Advocate machine that hosts MTS.

To create the Oracle service for MTS in MMC:

1. Select **Start > Run**.
2. In the Run dialog box, open the **mmc** application.
3. Add the MTS snap-in with the properties described in the following table.

Window and property	Recommended value
Console window	Select Add/Remove Snap-in .
Add Standalone Snap-in	Select the following: <ul style="list-style-type: none">● Microsoft Transaction Server● Oracle Primary MMC Snap-in
Console window	Do the following: <ol style="list-style-type: none">1. Expand Oracle Managed objects, Computers, <MTS_Server_Host>.2. Right-click on Oracle Manager for MTS Services and select New > Service.

Window and property	Recommended value
Service Information	Do the following: <ul style="list-style-type: none"> ● For User name, type <i>advocateuser</i> ● For Password, type <i>advocatepw@</i> ● For Database Alias, type <i>ADVOCATEDB_machine</i>. This is the Business Advocate user that you created in Creating a user for the Business Advocate database on page 212.
Oracle Protocol Support	Select the following: <ul style="list-style-type: none"> ● Named Pipes ● TCP

Validating Oracle Service for MTS Configuration

Perform these steps on the machine that hosts your Business Advocate database.

To validate the configuration of the Oracle Service for MTS:

1. In the Oracle Managed Objects component of MMC, note the value of the ResourceManager GUID field.

To find the ResourceManager GUID field, go to Oracle Manager for MTS Services node > Oracle Service for MTS > Properties window > Identification tab > ResourceManager GUID.
2. In the Business Advocate database, confirm that the following table exists: MTS_PROXY_INFO.
3. In the MTS_PROXY_INFO table, confirm that the value of the RMGUID field in the record matches the value in the ResourceManager GUID field. The values in these fields can match without following the same order.

For example, If RMGUID value in MTS_PROXY_INFO table is:
AE63CB1364906C4AB633BB9FB5FDE768

Then, the Resource Manager GUID value would be: 13CB63AE-9064-4A6C-B633-BB9FB5FDE768

Important:

If the configuration of the Oracle Service for MTS includes errors, you might get unexpected errors, such as "Installing Qualifiers' Objects objinst ti".

Supported database management systems

4. If you cannot validate any or all of the above steps, do the following:
 - a. Stop the Oracle service for MTS.
 - b. Delete the snap-in from MMC and the Windows registry.
 - c. Restart the machine.
 - d. Repeat the following steps:
 - [Configuring the Oracle Service for Microsoft Transaction Server for Business Advocate](#) on page 215.
 - [Creating Oracle Service for MTS in MMC](#) on page 216.
 - [Validating Oracle Service for MTS Configuration](#) on page 217.

IBM DB2

Avaya IC servers and client components support the IBM DB2 UDB version 7.2 with Fix Pack 9. Avaya certifies support for this version. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed version.

This section includes the following topics:

- [Installing IBM DB2 Server](#) on page 218.
- [Configuring IBM DB2 server for Avaya IC](#) on page 219.
- [Installing IBM DB2 Client](#) on page 220.
- [Installing the stored procedure library](#) on page 219
- [Configuring IBM DB2 client for Avaya IC](#) on page 221.

Installing IBM DB2 Server

Install and configure the IBM DB2 server on all AIX machines that host the database instance for Avaya IC databases.

Installing the stored procedure library

Avaya IC requires the qdb2sp stored procedure library.

To install the qdb2sp stored procedure library in the DB2 server installation hierarchy:

1. On the machine that hosts the DB2 Data server, navigate to the `.../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.

Configuring IBM DB2 server for Avaya IC

This section includes the following topics which describe the configuration parameters for IBM DB2:

- [DB2 registry variables](#) on page 219.
- [Automatic configuration parameters](#) on page 220.
- [Manual configuration parameters](#) on page 220.

DB2 registry variables

The following table includes the DB2 registry variables required for Avaya IC.

DB2 registry variable	Recommended entry
DB2_INDEX_2BYTEVARLEN	yes
DB2_STRIPED_CONTAINERS	yes
DB2ENVLIST	EXTSHM
DB2_RR_TO_RS	YES_OVERRIDE_RI
DB2COMM	tcPIP

Supported database management systems

Manual configuration parameters

The following table includes DB2 configuration parameters required for Avaya IC. You must configure these parameters manually. Database Designer does not automatically configure these parameters.

Configuration parameter	Required minimum setting
APP_CTL_HEAP_SZ	256
MAXLOCKS	22
MAXAPPLS	500

Automatic configuration parameters

Avaya recommends that you use Database Designer to create and configure Avaya IC databases in DB2. Database Designer automatically sets the configuration parameters in the following table.

Configuration parameter	Required minimum setting
Database code set	UTF-8
Territory	US
pagesize	8KB
APPLHEAPSZ	512
bufferpool BUFFERPOOL8K	1000
tablespace USERSPACE8K	<ul style="list-style-type: none">● pagesize: 8k● bufferpool: BUFFERPOOL8K
tablespace TEMPSPACE8K	<ul style="list-style-type: none">● pagesize: 8k● bufferpool: BUFFERPOOL8K

Installing IBM DB2 Client

Install the DB2 Administration Client from the DB2 Server CD-ROM or the DB2 Administration Clients CD-ROM.

Configuring IBM DB2 client for Avaya IC

You might need to catalogue the databases on an IBM DB2 client. For more information, see the DB2 documentation.

Supported database management systems



Chapter 11: Supported Telephony switches and software

Avaya™ Interaction Center (Avaya IC) supports specific versions of the following telephony products, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

This section includes the following topics:

- [Exceptions for Telephony software and switches](#) on page 224.
- [Avaya Definity and Communication Manager products](#) on page 224.
- [Aspect CallCenter switches](#) on page 227.
- [Nortel Meridian switches and middleware](#) on page 228.
- [Interactive Voice Response systems](#) on page 233.

Avaya IC supports these telephony products over various protocols. The supported switches interface with Avaya IC in various ways, including:

- Switch connects directly to the Avaya IC Telephony server. For example, Avaya products and Aspect switches use this interface.
- Switch connects to the Avaya IC Telephony server with Intel NetMerge Call Processing Software as an interface. For example, Nortel Meridian-1 switches use this interface.

Exceptions for Telephony software and switches

The following table contains exceptions to telephony support for Avaya IC:

Avaya IC component	Supported Telephony software and switch
Outbound Contact	<ul style="list-style-type: none"> ● Avaya Definity G3 R8.3 ● Avaya Definity G3 R9 ● Avaya Definity G3 R10 ● Aspect CallCenter 8.3 with Contact Server V4
Business Advocate	<ul style="list-style-type: none"> ● Avaya Definity G3: <ul style="list-style-type: none"> - R8.3 - R9 - R10 ● Avaya Communication Manager: <ul style="list-style-type: none"> - 1.1 - 1.2 - 1.3 ● Nortel Meridian-1 with: <ul style="list-style-type: none"> - Meridian Link - Symposium Call Center Server 4.2 <p>Note: Multiple announcements require Communication Manager 1.2 or Communication Manager 1.3</p>

Avaya Definity and Communication Manager products

Avaya IC supports the following Avaya Definity® G3 and Communication Manager™ products, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

- Definity G3 R8.3
- Definity G3 R9
- Definity G3 R10
- Communication Manager 1.1 software on 8700 Media server or Definity G3 servers (R, SI, CSI)

- Communication Manager 1.2 software on 8700 Media server or Definity G3 servers (R, SI, CSI)
- Communication Manager 1.3 software on 8700 Media server or Definity G3 servers (R, SI, CSI)

For information about the interface between Avaya products and the Avaya IC TS, see *Telephony Connectors Programmer's Guide*.

This section includes the following topics:

- [Supported components](#) on page 225.
- [Requirements for Avaya Definity and Communication Manager products](#) on page 225.
- [Downloading the CVLAN client](#) on page 227.

Supported components

Avaya IC supports the following components with Avaya Definity® and Communication Manager™ products, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Switch	Operating systems	Multisite heterogeneous switch	Protocol
Definity G3: <ul style="list-style-type: none"> ● R8.3 ● R9 ● R10 	<ul style="list-style-type: none"> ● Windows 2000 ● Solaris 8 ● AIX 5.1 	✓	ASAI
Communication Manager releases: <ul style="list-style-type: none"> ● 1.1 ● 1.2 ● 1.3 	<ul style="list-style-type: none"> ● Windows 2000 ● Solaris 8 ● AIX 5.1 	✓	ASAI

Requirements for Avaya Definity and Communication Manager products

Install the following prerequisites for Avaya Definity G3 and Communication Manager products. Consult the administrator responsible for the Avaya Communication Manager Call Center at your site for more detailed information about these requirements.

! Important:

Avaya IC requires Call Center Elite. Call Center Elite includes Expert Agent Selection. Telephony in Avaya IC uses Expert Agent Selection to improve the synchronization between the agent desktop telephone and the Avaya Agent Softphone. These improvements were made available through tighter linkages with ASAI Agent States.

Install CVLAN Client version 8.2.5 or later to use the Service Observer feature of your Avaya Definity G3 and Communication Manager products. Do not use version 8.2.1 of the CVLAN Client. Version 8.2.1 can cause the Telephony server to fail under a moderate load.

The following table describes the requirements for the supported versions of Avaya Definity G3 and Communication Manager products.

Switch	Requirements
Definity G3: <ul style="list-style-type: none"> ● R8.3 ● R9 	<ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD. ● CVLAN Client 8.2.5 or later. ● ADJLK Adjunct Link (not asai link) configured on the switch. ● Call Center Elite with EAS for ASAI Agent States For Business Advocate only: <ul style="list-style-type: none"> ● Increased Adjunct Route Capacity
Definity G3 R10	<ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD. ● CVLAN Client 8.2.5 or later. ● ADJLK Adjunct Link (not asai link) configured on the switch. Order of an Avaya IC ACD connector configures the RFA file on the switch appropriately. ● Call Center Elite with EAS for ASAI Agent States For Business Advocate only: <ul style="list-style-type: none"> ● Increased Adjunct Route Capacity
Communication Manager: <ul style="list-style-type: none"> ● 1.1 ● 1.2 ● 1.3 	<ul style="list-style-type: none"> ● CVLAN Server 8.2.x, mode 6 or 8, on MAPD. ● CVLAN Client 8.2.5 or later. ● ADJLK Adjunct Link (not asai link) configured on the switch. Order of an Avaya IC ACD connector configures the RFA file on the switch appropriately. ● 8700 Media server or Definity servers (R, SI, CSI). ● Call Center Elite with EAS for ASAI Agent States For Business Advocate only: <ul style="list-style-type: none"> ● Increased Adjunct Route Capacity

Downloading the CVLAN client

To download the current version of the CVLAN client:

1. With your Web browser, navigate to the Avaya Technical Support website at:
<http://www.avaya.com/support/>
2. Select **Call Center / CRM** from the options displayed on the **Support Centre Home** page.
3. Scroll down to **Computer Telephony Integration (CTI)** in the list of products.
4. Click **CVLAN Client** from the list under Computer Telephony Integration (CTI).
5. Click **Software Downloads**.
6. Select **CVLAN Client Version 8.2.5** (or the latest version if a more recent version is available).
7. Follow the instructions provided on the screen.
8. From the table at the bottom of the page, select the CVLAN Client for your environment.

Aspect CallCenter switches

Avaya IC supports the following Aspect CallCenter switch with the Aspect Contact Server, but not its emulations or variants. Avaya certifies support for the version listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed version.

- Aspect CallCenter 8.3 with Contact Server V4

The Aspect Contact Server is part of the Aspect Portal.

For information about the interface between the Aspect CallCenter switch and the Avaya IC TS, see *Telephony Connectors Programmer's Guide*.

This section includes the following topics:

- [Supported components](#) on page 228.
- [Requirements for Aspect CallCenter switches](#) on page 228.

Supported components

Avaya IC supports the following components with Aspect CallCenter switches, but not their emulations or variants. Avaya certifies support for the version listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed version.

Switch	Operating system	Multisite heterogeneous switch	Protocol
Aspect CallCenter 8.3	Windows 2000	✓	Aspect

Requirements for Aspect CallCenter switches

Avaya IC requires the following additional software for supported Aspect CallCenter switches:

- Aspect Contact Server (Portal)
- Aspect CMI server version 4.x, installed and available via an Ethernet connection to enable the Telephony server to establish a connection to the Aspect CallCenter System
- Aspect Real-time Receiver Custom Control runtime version, installed on the same machine as the TSQS server
- Aspect App Bridge Admin tool

Nortel Meridian switches and middleware

Avaya IC supports the Nortel Meridian-1 option 61 & 81 switches, with X11 Release with V2111 patch (core patch 9MP05182), Version 5.42, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Nortel switches connect to Avaya IC through the Telephony server using NetMerge 6.0. For more information, see [Intel NetMerge Call Processing Software](#) on page 231.

For information about the interface between Nortel Meridian-1 switches and the Avaya IC TS, see *Telephony Connectors Programmer's Guide*.

This section includes the following topics:

- [Supported links](#) on page 229.
- [Supported packages](#) on page 229.
- [Supported components](#) on page 229.
- [Requirements for Nortel Meridian switches](#) on page 230.
- [Intel NetMerge Call Processing Software](#) on page 231.

Supported links

Avaya IC supports Nortel switches with the following links:

- Meridian Link
- Symposium Call Center Server 4.2

Supported packages

Avaya IC supports these products with the following packages, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

- Integrated Message System (35)
- Command Status Link (77)
- Application Module Link (153)
- Meridian Link Module (209)
- Custom Controlled Routing (215) if your system uses the Workflow server to route calls
- Call ID (247)

Supported components

Avaya IC supports the following components for Nortel Meridian-1 switches, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will

Supported Telephony switches and software

make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Link	Operating systems	Multisite heterogeneous switch	Protocol
Meridian Link	<ul style="list-style-type: none">● Windows 2000● Solaris 8 with IBM DCE 3.1	✓	MLP
Symposium Call Center Server 4.2	<ul style="list-style-type: none">● Windows 2000● Solaris 8 with IBM DCE 3.1	✓	MLS

Requirements for Nortel Meridian switches

Avaya IC requires the following components for Nortel Meridian-1 switches, but not their emulations or variants. Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Switch	Required software	Installation location
Meridian Link	Link 5c	Switch
	Nortel Meridian 1 X11, Release 24B, version 5.42	Switch
	Intel NetMerge Call Processing Software 6.0	Telephony server machine
	IBM DCE 3.1 with patch 6 (Solaris only)	Telephony server machine
	Meridian MAX version 9 with MSI	TS Queue Statistics server machine

Switch	Required software	Installation location
Symposium Call Center Server 4.2	Symposium Server 4.2	Symposium server machine
	Symposium Client 4.2	Symposium client machine
	Link 5c	Switch
	Nortel Meridian 1 X11, Release 24B, version 5.42	Switch
	Intel NetMerge Call Processing Software 6.0	Telephony server machine
	IBM DCE 3.1 with patch 6 (Solaris only)	Telephony server machine
	Real Time Data Interface Toolkit	TS Queue Statistics server machine

Intel NetMerge Call Processing Software

If your Avaya IC system includes a Nortel Meridian-1 switch, you must install Intel NetMerge Call Processing Software 6.0. You can purchase the Intel NetMerge Call Processing Software 6.0 CD-ROM and documentation with Avaya IC. The Intel NetMerge Call Processing Software 6.0 CD-ROM includes Windows and Solaris versions.

You can view product information for Intel NetMerge Call Processing Software 6.0 from the following Web site:

<http://www.intel.com/network/csp/products/ctconnect/index.htm>

Note:

If you install the Intel NetMerge Call Processing Software server on a different machine than the machine that hosts the Telephony server, install the Intel NetMerge Call Processing Software client libraries on the machine with the Telephony server.

To set up Intel NetMerge Call Processing Software for Avaya IC with a Nortel Meridian-1 switch:

1. Install Intel NetMerge Call Processing Software with the default settings for a typical installation.
2. Set the following value in the Intel NetMerge Call Processing Software PBX:
`dialby_equipment=true`
3. Solaris only – Configure IBM DCE 3.1 for Intel NetMerge Call Processing Software:
 - Download and install patch 6

Supported Telephony switches and software

- Run the DCE daemon as background process: `ps -ef | grep dced`
4. Configure Intel NetMerge Call Processing Software for the switch protocol, using the values in the following table.

Configuration window	Symposium protocol
Configuration	Enter a logical identifier, such as symposium . Click Add .
Switch Type for Link	Select Nortel Symposium.
Configuring Nortel TCP/IP Link	Enter values for Symposium Module (SM): <ul style="list-style-type: none"> ● Switch IP Address – SM IP address. Do not enter the host name. ● Port Number – SM port (default 3000). ● Maximum Monitors – Maximum number of channels to monitor simultaneously (default 1000). ● Application ID – Host name of machine that runs Intel NetMerge Call Processing Software server. ● Machine ID – Type of SM (default SL16). This field is case sensitive. ● Customer Number – Customer number for MLM (default 0). ● Host name – Host name of SM (default Lanlink). This field is case sensitive. ● Auto Start Link – Check. ● Switch Timestamp – Do not check.
Advanced Settings for Link	Check Server Application Data.
Configuration	In this window: <ol style="list-style-type: none"> 1. Confirm Logical Identifier is in New Link list. 2. Click Server Options.
Server Options	Check the following Server Interfaces: <ul style="list-style-type: none"> ● Enable DCE/RPD Interface ● Enable Java™ RMI Interface

Interactive Voice Response systems

Avaya IC supports the following interactive voice response systems (IVRs). For more information, see the documentation provided with the IVR.

IVR	Supported version
CONVERSANT® System for Interactive Voice Response	<ul style="list-style-type: none">● 8.0● 9.0
Avaya Interactive Response	1.0
Edify Interactive Voice Response	8.0
Periphonics IVR	5.4
IBM WebSphere® Voice Response	2.3 and greater
Intervoice TRM	510

For information on how to configure the CONVERSANT® System for Interactive Voice Response, see *External Function Library for Avaya IVR Programmer's Guide*.

Note:

IBM WebSphere and Intervoice require connectors that are only available from the IVR manufacturer. Contact IBM or Intervoice for current information on their support for Avaya IC and to acquire the required software to integrate their IVRs with Avaya IC

Supported Telephony switches and software

■ ■ ■ ■ ■ ■ Chapter 12: Supported Web servers

The Web components of Avaya™ Interaction Center (Avaya IC), such as Web Management and WebQ, require one of the following Web servers. Avaya IC does not support any emulations or variants of these Web servers.

Avaya certifies support for the versions listed below. Avaya will make best efforts to support service packs that are guaranteed to be backwards compatible to the listed versions.

Web server	Windows 2000	Solaris 8	AIX 5.1
Microsoft Internet Information Server (IIS) 5.0	✓		
Sun™ ONE Web Server 6.0 SP5		✓	
IBM HTTP Server 1.3.26			✓

Note:

The Voice Media Manager (VMM) service required for Voice Chat does not support AIX. You must host the VMM on a Windows or Solaris machine. Voice Chat does not function with the VMM on AIX.

The following Avaya IC components use a supported Web server:

- Web Management external website with chat and ICM server
- Web Management administration website
- Email Management Template Administration
- Letter Generator
- QKnowledge
- Agent Installer

Supported Web servers

This section includes information that you require to set up the supported Web server for a specific operating system and to install the Java SDK. This section includes the following topics:

- [Microsoft Internet Information Server 5.0](#) on page 236.
- [Sun ONE Web Server](#) on page 237.
- [IBM HTTP Server](#) on page 239.
- [Java SDK](#) on page 240.

Microsoft Internet Information Server 5.0

If your system uses Windows 2000 as the operating system for the Avaya IC servers, you must use IIS 5.0 as your Web server.

IIS 5.0 is part of the Windows 2000 Server operating system. For information on how to configure and use IIS 5.0 for Windows 2000, see your Windows 2000 documentation.

This section includes the following topics:

- [Security patches and hot fixes for IIS 5.0](#) on page 236.
- [Security considerations for IIS 5.0](#) on page 237.

Security patches and hot fixes for IIS 5.0

You need to check the Microsoft Web site for security bulletins and hot fixes for IIS 5.0 that describe possible security issues and solutions. Review these security bulletins after you install IIS 5.0, make any required configuration changes, and apply the required patches.

You can find a listing of current security bulletins, patches, and hot fixes for IIS 5.0 from the following Web site:

<http://www.microsoft.com/technet/security/current.asp?productID=17&servicePackId=0>

Continue to monitor the Microsoft security bulletins and apply all future hot fixes when they are made available.

Security considerations for IIS 5.0

The IIS Lockdown Wizard increases the security of an IIS deployment for Avaya IC and Avaya OA and reduces the risk of intrusion. The IIS Lockdown Wizard can help you close several security risks that can occur with IIS. However, the IIS Lockdown Wizard cannot completely remove all risk of intrusion.

Note:

Microsoft creates and maintains the IIS Lockdown Wizard. Avaya recommends that you review and follow the security guidelines outlined by Microsoft for IIS. Avaya does not make security recommendations for IIS or Windows.

Install the most recent security patch and hot fix for IIS 5.0 before you install and run the IIS Lockdown Wizard.

You can download a copy of the IIS Lockdown Wizard version 2.1 from the following Web site:

<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=DDE9EFC0-B30-47EB-9A61-FD755D23CDEC>

For specific recommendations and instructions on how to configure security with the IIS Lockdown Wizard, see [IIS Lockdown Wizard](#) on page 253.

Sun ONE Web Server

If your system uses Solaris 8 as the operating system for the Avaya IC servers, you must use Sun™ ONE Web Server 6.0 SP 5 as your Web server. Sun™ ONE Web Server was formerly known as iPlanet Enterprise Edition.

Avaya IC does not support the Windows version of Sun™ ONE Web Server. You can obtain more information about Sun™ ONE Web Server from the following Web site:

http://www.sun.com/software/products/web_srvr/home_web_srvr.html

Note:

The Administrative Web Server of Sun™ ONE Web Server may have some Javascript compatibility problems with Internet Explorer 5.0. If the Web page does not display correctly or **Apply** is not active, open Sun™ ONE Web Server with a Netscape 4.x browser.

Sun ONE Web Server configuration parameters

A detailed guide to installing and configuring Sun™ ONE Web Server is beyond the scope of this document. See the installation guide for Sun™ ONE Web Server from the following Web site:

<http://docs.sun.com/db/prod/slappsrv>

When you install and configure Sun™ ONE Web Server, use the following parameters:

Parameter	Value
Installation staging directory	iplanet_install
Installation type	Typical installation
Installation components	<ul style="list-style-type: none">• All• Server Core and Java Support (1, 3)
Host name	Default (if correct)
User and group	Nobody (or a user without general privileges)
iWS Administration server “run-as” user	root
Admin login	Admin
Admin password	admin
Port	8888
Port	80
Docs	Default
JDK	Use own JDK
libs	Default
classpath	Default

IBM HTTP Server

If your system uses AIX 5.1 as the operating system for the Avaya IC servers, you must use IBM HTTP Server, release 1.3.26, as your Web server.

You can obtain more information about IBM HTTP Server 1.3.26 from the following Web site:

<http://www-3.ibm.com/software/webservers/httpservers/>

 **Important:**

If you plan to host the IBM HTTP Server on the same machine as the Websphere server for Avaya OA, install Websphere and the HTTP Server before you install Avaya IC with the instructions in *Avaya Operational Analyst Installation Planning and Prerequisites*.

IBM HTTP Server configuration parameters

A detailed guide to installing and configuring IBM HTTP Server is beyond the scope of this document. See the installation guide for IBM HTTP Server.

When you install and configure IBM HTTP Server, use the following parameters:

Parameter	Value
ServerName Property is in the following file: <code><IBMHttpServer_installation_root>/ conf/httpd.conf</code>	Fully-qualified domain name of the machine that hosts the IBM HTTP Server. CAUTION: Do not use localhost for the value. A value of localhost for ServerName causes an infinite redirection loop when you access the Administration Website.

Java SDK

You must install and configure the Java SDK on the machines that host certain Avaya IC components. This section includes the following topics.

- [Supported versions of the Java SDK](#) on page 240.
- [Components that require the Java SDK](#) on page 240.
- [Installing the Java SDK for Windows and Solaris](#) on page 241.
- [Installing the Java SDK for AIX](#) on page 241.

Supported versions of the Java SDK

The following table shows the version of the Java SDK that you need to install for each supported operating system:

Operating system	Java SDK version
Windows	Sun JDK 1.3.1_06
Solaris	Sun JDK 1.3.1_06
AIX	IBM JDK 1.3.1, 32 bit, build ca131-20030329

Components that require the Java SDK

The following table describes the Avaya IC components which require the Java SDK.

Avaya IC component	Description
QKnowledge	For all Avaya IC agent desktop applications, provides full-text database search and retrieval for problem determination and resolution.
Website	For systems with Web Management, runs the customer-facing website and the administration website for Web Management.

Avaya IC component	Description
Email Template Administration	For systems with Email Management, lets you create, customize, and maintain templates for responses to email contacts and outbound email contacts to customers.
Letter Generator	For systems with Business Applications, lets contact center supervisors and agents create letter and form templates, then generate mass mailings or single documents from those templates.
Web License Manager	For all Avaya IC systems, hosts the Avaya license for your Avaya IC system.

Installing the Java SDK for Windows and Solaris

To install the Java SDK for Windows or Solaris:

1. Download JDK release 1.3.1_06, including the optional Java 2 Runtime Environment from the following Web site:

<http://java.sun.com/products/archive/index.html>

2. Install the Java SDK on all required machines.

Tip:

If this URL is no longer valid, go to <http://java.sun.com> and navigate to the product archive from there.

Installing the Java SDK for AIX

To install the Java SDK for AIX:

1. Download IBM JDK 1.3.1, 32 bit, build ca131-20030329 from the following Web site:

<http://www-106.ibm.com/developerworks/java/jdk/aix/index.html>

2. Install the JDK on all required machines.

Tip:

If this URL is no longer valid, go to <http://www.ibm.com> and navigate to the product archive from there.

Supported Web servers



Chapter 13: Supported email servers

Certain components of Avaya™ Interaction Center (Avaya IC) require access to email servers that support the following protocols:

POP3 - (Post Office Protocol - RFC-1725, required to receive email contacts.

SMTP - Simple Mail Transport Protocol - RFC - 822, required to send email contacts

SMTP and POP3 are standard Internet email protocols. Most common mail servers, such as Microsoft Exchange and Lotus Notes, support these protocols. You need to install or configure your enterprise email server to support SMTP and POP3 services.

 **CAUTION:**

Turn off Microsoft Word Autocorrect features if you use Word as the editor for Outlook. The Autocorrect features can cause application errors in the Avaya IC agent desktop.

Configuring SMTP and POP3 servers

Email Management works closely with other servers and applications on your Local Area Network.

To configure your email system:

1. Configure your mail server to allow POP3 and SMTP access.

The Avaya Email Server uses a POP3 server to retrieve incoming messages, and uses an SMTP server to send outgoing messages.

2. Define an email address your email system that matches the following configuration which you will set in the Notification server:
 - Email server name
 - Domain name
 - Default email sender name, for example user@xyzcorp.com

Supported email servers

3. Verify the email system on the machine, as described in the following table.

Operating system	Verification step
Windows	Notification server verifies the ability to send a simple email contact to the default email sender name. The Notification server will not start if the email address is invalid.
Solaris	<p>You must verify that the default email sender name is accessible from the mail daemon on the machine that hosts the Notification server.</p> <p>Execute the following command from any directory to send a simple text message:</p> <pre>mail <email_address> test .</pre> <p>Where <email_address> is the default email sender name. For example, enter <code>user@xyzcorp.com</code></p>
AIX	<p>You must verify that the default email sender name is accessible from the mail daemon on the machine that hosts the Notification server.</p> <p>Execute the following command from any directory to send a simple text message:</p> <pre>mail <email_address> test .</pre> <p>Where <email_address> is the default email sender name. For example, enter <code>user@xyzcorp.com</code></p>

4. Remove all aliases and distribution lists from the mail accounts that Email Management handles.

To avoid potential mail loops, do not include mail accounts that are polled by Email Management in any distribution lists or aliases.

5. Configure your firewall for Email Management:

- To send messages to the SMTP server on port 25
- To retrieve messages from the POP3 server on port 110
- To allow agent machines to communicate with the Email server on port 19113
- To allow administrators to communicate with Mail Template Administration on port 19114

6. Create mail accounts for the following roles in your contact center:

- Agents
- Supervisors
- Subject matter experts (also known as external agents)
- Bounce (rejected) message
- Support message

Email Management handles these accounts as POP3 mailboxes not IMAP mailboxes.

7. Do not store email messages on a mail server after they have been retrieved and archived. Email Management does not support IMAP. Email Management stores incoming and outgoing messages in IC Repository.

8. Enable relaying if Email Management will send replies to customers outside the local domain.

Supported email servers

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Chapter 14: Supported third party applications

Avaya™ Interaction Center (Avaya IC) works with several third party applications from other vendors. These applications support various functions within the product, such as database management and reports.

This section includes the following topics that describe third party applications:

- Acrobat Reader, see [Adobe Acrobat Reader](#) on page 248.
- Compilers for custom servers, see [Compilers for Avaya IC Server SDK](#) on page 248.
- GhostScript, see [GhostScript](#) on page 248.
- IBM DCE, see [IBM Distributed Computing Environment](#) on page 249.
- Java Runtime Environment, see [Java Runtime Environment](#) on page 249.
- Lotus Sametime, see [Lotus Sametime](#) on page 250.
- SearchServer, see [SearchServer](#) on page 250.
- Sun Java Virtual Machine, see [Sun Java Virtual Machine](#) on page 250.
- Tomcat, see [Tomcat](#) on page 251.

The following topics in other sections provide information about supported third party applications and the requirements of Avaya IC:

- [Required software components](#) on page 33.
- Operating systems, see [Supported operating systems](#) on page 179.
- Database management systems, see [Supported database management systems](#) on page 199.
- Telephone switches, see [Supported Telephony switches and software](#) on page 223.
- Intel NetMerge Call Processing Software, see [Intel NetMerge Call Processing Software](#) on page 231.
- Web servers, see [Supported Web servers](#) on page 235.
- Java SDK, see [Java SDK](#) on page 240.
- Email servers, see [Supported email servers](#) on page 243.

For more information about Avaya OA and its prerequisites, see *Avaya Operational Analyst Installation Planning and Prerequisites*. For detailed information about Avaya IC for Siebel 7, see *Avaya IC for Siebel 7 Integration*, which is available on the Avaya IC for Siebel 7 installation CD-ROM.

Adobe Acrobat Reader

You must install the Adobe® Acrobat® Reader® 5.0 with Search to view the Avaya IC PDF documentation and access the cross-document indexing and search capabilities of the Avaya IC documentation. The PDF documents are available:

- On the Avaya IC CD-ROM
- On the Avaya IC Documentation CD-ROM
- On all machines that host Avaya IC components

You can download the free Acrobat Reader and the separate Search functionality from a link on the splash screen of the Avaya IC documentation CD-ROM or directly from the Adobe Web site at <http://www.adobe.com/>

Compilers for Avaya IC Server SDK

If you build custom Avaya IC servers with the SDK, you must install the following compilers:

- Solaris – Sun® Forte Developer 6, Update 2
- Windows – Microsoft® Visual Studio 6, SP 5

GhostScript

Avaya IC supports GhostScript 6.5, but not its emulations or variants. GhostScript is a PostScript language interpreter that prints PostScript and PDF documents. Letter Generator uses GhostScript to print batch letters.

You install GhostScript on the machine that hosts the Letter Generator Web server.

You can view production information and download GhostScript from the following Web site:

<http://www.GhostScript.com/>

Note:

Letter Generator requires a postscript-compatible printer. This printer must be in the same Windows domain as the Workflow Server. Most inkjet printers are not postscript-compatible.

IBM Distributed Computing Environment

IBM's Distributed Computing Environment (DCE) enables file sharing over a network, across multiple platforms. Avaya IC requires IBM DCE 3.1 with patch 6, but not its emulations or variants.

You can view IBM DCE product information at the following Web site:

<http://www-4.ibm.com/software/network/dce/>

You can purchase the IBM DCE CD-ROM with Avaya IC.

Note:

Do not use Transarc DCE. The Transarc DCE versions are not compatible with Intel NetMerge Call Processing Software for Solaris

Java Runtime Environment

Avaya IC support the Java Runtime Environment (JRE) 1.3, but not its emulations or variants. JRE from Sun Microsystems is a set of applications and support files. JRE enables Java applications to run on supported hardware and operating systems.

The following Avaya IC components require JRE:

- IC Manager
- Web Management
- Email Management
- Letter Generator
- Qknowledge

Avaya IC installs JRE 1.3 automatically with IC Manager.

Lotus Sametime

Sametime 2.5 is a product of Lotus/IBM that can be integrated with Avaya IC. Sametime allows your agents to share a session with customers that provides application sharing, whiteboarding, and chat and IP audio and video capabilities.

If you integrate Sametime with Avaya IC, agents in your contact center can initiate a Sametime session when they are in a chat and collaboration session. Your customer can join the Sametime session after the agent initializes the session.

For information about Sametime, see the following Web site:

<http://www.lotus.com/products/lotussametime.nsf/wdocs/homepage>

SearchServer

Avaya IC requires SearchServer 4.0, from Hummingbird Ltd., but not its emulations or variants.

Avaya QKnowledge and IndexQ require SearchServer.

Avaya IC automatically installs SearchServer when you install Avaya IC servers and the agent desktop applications.

For information on the system requirements and supported platforms for SearchServer, see the Hummingbird Web site at: <http://www.hummingbird.com/products/eip/index.html>

Sun Java Virtual Machine

Avaya IC requires the Sun Java Virtual Machine (“JVM”).

The Avaya IC installation includes and installs the JVM. You do not need to purchase, install, or configure the JVM.

Tomcat

Avaya IC installs Tomcat 3.3.1 with the Avaya IC servers. Tomcat is the servlet container of the Jakarta Project. Tomcat is developed in an open and participatory environment and released under the Apache Software License.

Supported third party applications

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Appendix A: IIS Lockdown Wizard

You can use the IIS Lockdown Wizard to increase the security of an IIS deployment that hosts Websites and Web applications for Avaya IC and Avaya OA. Microsoft recommends the Lockdown Wizard to close some security risks that can occur with IIS.

This section describes the steps tested and recommended by Avaya for how to configure and implement security with the IIS Lockdown Wizard. Deviations from this recommended configuration could interfere with the performance of Avaya IC.

Perform this configuration after you install and configure the Avaya IC system.

This section includes the following topics:

- [Prerequisites for the IIS Lockdown Wizard](#) on page 253.
- [Downloading the IIS Lockdown Wizard](#) on page 254.
- [Configuring security with the IIS Lockdown Wizard](#) on page 254.
- [Testing the security settings](#) on page 257.
- [Troubleshooting the security settings](#) on page 257.

Note:

Microsoft developed and maintains the IIS Lockdown Wizard. Avaya recommends that you review and follow the security guidelines for IIS outlined by Microsoft. Avaya does not make security recommendations for IIS or Windows.

Prerequisites for the IIS Lockdown Wizard

Before you install and use the IIS Lockdown Wizard, do the following:

1. Apply the most recent security patches and hot fixes for Windows 2000 Server. For more information, see [Installing required service packs for Windows 2000](#) on page 181.
2. Apply the most recent security patches and hot fixes for IIS 5.0. For more information, see [Security patches and hot fixes for IIS 5.0](#) on page 236.
3. Back up all files on the machine that hosts the IIS Web server.

4. Install and configure the Avaya IC system, including all channels and prerequisites, as described in *IC Installation and Configuration*.

Downloading the IIS Lockdown Wizard

To download the IIS Lockdown Wizard version 2.1:

- Go to the following Website in your Web browser:

<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=DDE9EFC0-B30-47EB-9A61-FD755D23CDEC>

- If that link is no longer valid:
 1. Go to the Microsoft Web site at <http://www.microsoft.com>
 2. Navigate to the Download Center.
 3. In the **Search for a Download** section:
 - Select IIS from the **Product/Technology** drop-down list.
 - Enter `Lockdown Wizard 2.1` in the **Keywords** field.

Follow the instructions on the Website to install the IIS Lockdown Wizard.

Configuring security with the IIS Lockdown Wizard

This section provides the security settings for the IIS Lockdown Wizard that are compatible with IIS and Avaya IC.

The instructions and information in this section assume that the machine that hosts IIS 5.0 uses Windows 2000 Server SP3. This information was current at the time of publication. Check the documentation and other information provided on the Microsoft Web site for the most recent changes.

To configure security with the Lockdown Wizard.

1. Navigate to the folder where you downloaded and installed the IIS Lockdown Wizard.
2. Double-click `iislockd.exe`.

3. Complete the windows in the IIS Lockdown Wizard with the properties described in the following table.

Window	Property	Recommended value
Lockdown Security Templates	Server templates	Select Static Web Server. Avaya IC does not use ASP. You can select Dynamic Web Server if you host an ASP application on the same machine as Avaya IC.
	View Template Settings	Check this box. You need to view template settings to be able to customize the template.
Internet Services Note: If a service has not been installed, the options are not available.	Web services (HTTP)	Check this box.
	File transfer service (FTP)	If you want to allow the ability to FTP files from the machine that hosts the Avaya IC Website, check this box.
	E-mail service (SMTP)	If the Avaya IC system uses an SMTP server on the target machine to make SMTP connections for the email channel, check this box.
	News service (NNTP)	If you host NNTP on the same machine as the Avaya IC Website, check this box.
	Remove unselected services	Do not check this box. If you do not check this box, the IIS Lockdown Wizard disables the service but does not remove it. You can enable the service later, if required.
Script maps	Disable support for the selected script maps.	Check all boxes.

Window	Property	Recommended value
Additional security	Remove the selected virtual directories from this server	If desired, check the boxes for virtual directories.
	Set file permissions to prevent anonymous IIS users from performing these actions	Check all boxes.
	Disable Web Distributed Authoring and Versioning	Check this box.
URLScan	Install URLScan filter on the server.	If desired, check this box. Note: The URLScan filtering tool runs as an ISAPI filter at the root of the IIS installation. Rules to block URL requests are in the urlscan.ini file. Avaya has not evaluated the impact of this tool and IIS on Web server performance.

After the IIS Lockdown Wizard completes the configuration, it generates a report of the changes.

4. If you installed the URLScan ISAPI filter:

- a. Open the `urlscan.ini` file in a text editor and add the verb `POST` to the list of verbs in the `[AllowVerbs]` section.

By default, `urlscan.ini` is installed in the following location:

`... \winnt\system32\inet_srv\urlscan\urlscan.ini`

- b. In the Services control panel, stop and restart the World Wide Web Publishing Service.

If you do not add `POST`, a user might receive 404 - Page Not Found errors from an Avaya IC Website.

The URLScan tool writes a log file to `... \winnt\system32\inet_srv\urlscan`. Check this log file to determine if URLScan has rejected a particular request.

5. If you plan to install Avaya IC agent desktop applications from a Web server, delete the `EXE` from the list in the `[Deny Extensions]` section.

You do not need to perform this step if you plan to install Avaya IC agent desktop applications from a network share.

Testing the security settings

After you configure security settings with the IIS Lockdown Wizard, test IIS 5.0 to validate that the Web server performs as expected.

To test the security settings:

1. In IC Manager, select **Services > WebACD** to access the Avaya IC Administration Website.
2. Access the Avaya IC Customer Website at the following URL:
`http://<machine_name>.<domain_name>/website/public`
3. Start a chat contact and make sure that:
 - a. The chat applet launches correctly.
 - b. An agent can receive and respond to the chat contact.
4. Send an email contact from the Website and make sure that an agent receives the email contact.
5. If the Avaya IC system includes Self Help or other Web Management features, test those features to make sure that they perform correctly.
6. Open the Email Template Administration Web pages at the following URL:
`http://<machine_name>.<domain_name>/rlmanager/index.jsp`

Troubleshooting the security settings

If you encounter any issues with the tests:

- To undo one or more of the changes that you made to the security settings, re-run the IIS Lockdown Wizard.
- To disable the URLScan tool, remove the URLScan ISAPI filter from the IIS server. After you make this change, stop and restart the World Wide Web Publishing Service for the change to take effect.

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